FOSTERING SUSTAINABLE ENTREPRENEURSHIP IN EMERGING MARKET: AN INTERDISCIPLINARY PERSPECTIVE

Inggang Perwangsa Nuralam
Nanin Verina Widya Putri

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Editors

Inggang Perwangsa Nuralam, S.E., MBA., Ph.D.

Nanin Verina Widya Putri, M.Pd.

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#72 Salang Street Matain, Subic. 2209. Philippines

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About Editors

Inggang Perwangsa Nuralam, S.E., MBA., Ph.D. is a lecturer at the Faculty of Administrative Sciences, Brawijaya University (FIA UB), Indonesia, who has expertise in Consumer Behavior, Customer Relationship Management, and Consumer Psychology Processes. He has received formal education by obtaining a bachelor's degree at the Faculty of Economics, Brawijaya University (FE UB), a Master of Business Administration at the University of Sunderland, England, and a Doctoral program at Kobe University, Japan. Currently, he is active as Chair of the Center for Entrepreneurship and Start-Up Development, Directorate of Innovation and Science Technology Area (DIKST) Universitas Brawijaya.

Nanin Verina Widya Putri, M.Pd is an English lecturer at Undergraduate of Universitas Nahdlatul Ulama Sunan Giri (UNUGIRI) Bojonegoro, East Java, Indonesia. She has obtained Master Degree from Universitas Negeri Surabaya in English language education. She has translated various academic documents. She also has four years experiences in proofreading and translating articles for international conference. Currently, she is part of Institute for Research and Community Services or Lembaga Penelitian dan Pengabdian kepada Masyarakat (LPPM) Universitas Nahdlatul Ulama Sunan Giri (UNUGIRI).

CONTRIBUTORS' BIOGRAPHIES

Inggang Perwangsa Nuralam, S.E., MBA., Ph.D
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Muhammad Nazil, SAB.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Ochan Dorgi Ojuni, MA., Ph.D
Gambella University, Gambela, Ethiopia

Kosuke Miyazaki, MA.
Kobe University, Kobe, Japan

Zaki Alif Ramadhani, S.Par., M.Par
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Dr. Nur Imamah, S.AB., M.AB., Ph.D
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Layyin Nafisa, B.B.A., M.Sc.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Nurlita Sukma Alfandia, S.E., M.A.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Priandhita Sukowidyan Asmoro, S.E., MSA., Ak
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Sifa Arsyanda, S.Pn., M.Tax
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Hanifa Maulani Ramadhan, S.AB., M.AB.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Vieri Ahmad Haidir
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Bayu Andriansyah Prastya
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Drs. Wiyata, M.AB., Ph.D
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Dr. Logaiswari Indiran
Department of Marketing and Entrepreneurship Universiti Teknologi Malaysia, Malaysia

Associate Professor Dr. Haibing Liu
Management School, Wuhan University of Science and Technology, China

Lie Jingjun
Universiti Teknologi Malaysia, Malaysia

Ts. Liew Foong Ching
Community College Kuching Malaysia

Swasta Priambada, S.Sos., MAB.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Edlyn Khurotul Aini, S.AB., M.AB, MBA
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

Eliana Sandy Yuliaji, S.AB., M.AB.
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

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Inggang Perwangsa Nuralam and Muhammad Nazil

Abstract

The digital era has caused a profound change in the paradigm of corporate interaction with consumers. These changes cover how companies communicate, understand, and respond to customer needs. Storytelling can facilitate more positive and meaningful interactions between companies and customers in the digital world. In summary, narrative storytelling significantly influences sustainable entrepreneurship in emerging markets. The creative and authentic use of narratives told and shared allows for the formation of strong bonds between companies and customers. This can motivate customers to take certain actions, such as making a purchase, sharing a story with others, or participating in further interactions with the brand. Remember that as emotional creatures, humans generally respond more positively to messages that evoke emotion. This is why storytelling, which is focused on the emotional aspect, is very effective. Customers want involvement in stories that have an emotional impact, not just being the target of generally monotonous advertising messages. These changes also push companies to seek new communication methods with their audiences. It is where storytelling platforms and channels play a crucial role. Social media is the most common platform that can be used due to its various models (Facebook, Instagram, Twitter, and Linkedin). Interestingly, some companies are starting to communicate with customers through storytelling, which is shown in the form of short videos or blog reviews. Recent podcasts and live streaming are among the increasingly popular platforms used as storytelling media. It indicates that the company's creativity is being tested, especially in building strong bonds between brands and customers.

Keywords: *Storytelling, Brands, Customers*

I. P. Nuralam · M. Nazil
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
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INTRODUCTION

Changes that have taken place throughout history continue to influence all aspects of life in society and culture, which are then reflected through stories and shape life values. The art of storytelling could represent the way individuals view and interpret events that have occurred in the past, present, or future. According to Ellington (2014), the art of storytelling is considered a natural, simple, entertaining, and energizing method for humans, which ultimately helps them understand complexity and can change or improve their understanding of situations. These stories are memorable, can trigger emotions, and allow individuals to see themselves differently. It will enable consumers to make decisions and change their behavior in line with the new views, insights, and identities they gain. For this reason, the art of telling stories has become an irreplaceable element in human civilization.

Stories can be a meeting point between facts and emotions, ultimately shaping our perception of civilization. Furthermore, in the human mind, narrative is the dominant structure, and information is usually remembered as stories, indicating that stories reflect how we think (Mileski et al., 2015). Humans have always relied on stories to gain an understanding of the world around them. Although the historical roots of the art of storytelling cannot be traced to a certain point in history, we can state that the urge to listen and tell stories predates the ability to speak. Stories have evolved into what is now referred to as "communication tools," used by corporate leaders, experts in knowledge management, and strategy and design practitioners. Especially in entrepreneurship, marketing, and communication, stories have become a very effective tool for creating value; with the advent of the digital era, stories have become more dominant than ever.

Storytelling is an activity that involves participants in a workshop where they create personal stories, which can then be accessed online or broadcast on television (Balaman 2018). In this context, storytelling is a cultural activity and a media style. It creates a living network between literary and symbolic concepts, technological developments, and collaborative social interactions (Alexandrakis et al., 2020). Storytelling was created to enrich the expression of everyday messages (Balaman 2018). In this process, storytelling revives creativity in everyday culture and recognizes unique and valuable contributions to a global cultural society. Storytelling involves the finished product and methods in developing the narrative and concept. In other words, story telling is a workshop-based method in which participants are taught how to create audio-video stories about themselves using digitalized media sources (Alexandrakis et al., 2020).

Digital story telling is the creative process of using digital technology, such as images, audio, video and text, to tell stories or narratives (Catellani, P., & Bonaiuto, M. 2018). It involves telling a story using digital media as a tool to communicate a message, inspire, or entertain an audience. Digital storytelling is often used in various contexts, including; education, marketing, journalism, and brand development, to

create deeper experiences and engage audiences. In the context of sustainable entrepreneurship in emerging market categories, understanding the power of narrative storytelling in influencing consumer behavior and building strong brands is critical.

Entrepreneurs need to understand the importance of developing compelling and relevant stories for their audiences to create a positive impact on society and the environment. Storytelling has been recognized as a powerful tool in entrepreneurship to build strong brands and connect with consumers (Dholakia, 2018; Li et al., 2020). Through moving narrative stories, entrepreneurs can create emotional connections with consumers, increase their understanding of their products or services' positive impact, and inspire them to participate in sustainable efforts (Farr et al., 2017; Peloza et al., 2018).

Story telling allows entrepreneurs to communicate their mission, values, and sustainability initiatives in a way that resonates with consumers. By designing narratives highlighting the social and environmental benefits of their offerings, entrepreneurs can engage consumers more meaningfully, fostering loyalty and trust (Farr et al., 2017). This emotional connection is very important because it influences consumer behavior, encourages them to make sustainable choices and supports businesses that are in line with their values (Peloza et al., 2018). Furthermore, storytelling allows entrepreneurs to showcase unique aspects of their business, differentiating themselves from competitors in the market (Dholakia, 2018). By sharing stories of innovation, social impact, or overcoming challenges, entrepreneurs can capture the attention and interest of consumers, making their brands memorable and distinct (Li et al., 2020).

The story telling approach not only increases consumer engagement, but also attracts investors and other stakeholders who are increasingly interested in supporting sustainable businesses (Kapoor, 2016). In summary, narrative storytelling significantly influences sustainable entrepreneurship in emerging markets. Through compelling stories, entrepreneurs can build strong emotional connections with consumers, increase their understanding of positive social and environmental impacts, and inspire them to participate in sustainable efforts. By leveraging storytelling effectively, entrepreneurs can differentiate their brands, engage stakeholders, and steer consumer behavior toward more sustainable choices.

Story telling and the digital era

Studies in marketing, focusing on the online and offline domains, agree that a story is a narrative about an event or a series of events that lead to a change from an initial state to a final state or final result. A constructed description can also explore how the story can influence and change its audience (Harmeling et al. 2017). In this context, the narrative model can be expanded and can explain that stories are able to engage customers by bringing them into the story, thus creating a level of empathy

with the characters in the story and stimulating their imagination so that they feel as if they are in the reality of the story. as long as they follow the story (Van Laer, T. 2014). The end result of this kind of level of customer engagement is narrative persuasion.

It is interesting to see the development of the use of stories in the business world, especially when it is related to the current conditions, where technology can already be applied in various scientific fields. Digital technology has brought about fundamental changes in the business world that affect various aspects, such as marketing strategies basic business models, including the way companies interact with consumers. The digital era has caused profound changes in the paradigm of company interaction with consumers. These changes include how companies communicate, understand, and respond to customer needs. A successful business in the digital era can combine technology with a deep understanding of consumer needs, is flexible in dealing with change, and is always ready to innovate. The digital age is not just a technological change but a revolution in business and the company's relationship with consumers.

In the digital era, information has become easier to access and more abundant. Searching, comparing, and collecting information about products or services can be easily and quickly done by consumers as a consideration in making purchasing decisions. Companies must ensure that the information they provide on digital platforms is accurate, relevant, and easy to access. It makes companies more transparent and ensures their information is accurate and easy to access (Smith, 2019). Information about products or services must be available in real-time to maintain communication between companies and consumers. The company can provide access to information through various social media platforms, chat, and email. Through content such as blogs, videos, and infographics, companies can build authority in their industry and win consumer trust (Murray, 2017). In an increasingly digitized business world, choosing the right platform to tell their story is crucial. Companies need to understand the characteristics and demographics of their audience across platforms such as social media, blogs, and online videos (Smith, 2019). This ensures that their message reaches the right target most effectively.

Companies must be ready to respond to consumer requests, questions, or input within seconds. The benefits gained from providing information in real-time are not only felt by consumers. Rather than simply presenting information about product attributes objectively, storytelling focuses more on expressing the values attached to the brand through content that evokes emotions (Dessart, 2018). The creative and authentic use of stories told and shared allows for the formation of strong bonds between companies and customers. The experiences resulting from these relationships encourage customers to take certain actions (Lim and Childs, 2020). Companies can also utilize this as a source of relevant data, allowing companies to tailor their messages and offer more relevant experiences (Lee, 2018). Companies can use data analysis to understand consumer behavior, identify trends, and make more informed

decisions. It allows companies to optimize marketing strategies and operations and create strong customer relationships through better experiences (Jones & Peters, 2016) and interactions with customers in online environments (Anaza et al., 2020; Kim et al., 2020). It makes it possible to share information and knowledge with customers in an easy-to-understand way (Kemp et al., 2021), while triggering positive emotions and reducing barriers or resistance in communication.

The use of creative and authentic storytelling in business has a significant impact on the relationship between companies and customers. Several relevant academic studies support this. Using innovative and authentic stories can help build strong bonds between companies and customers Lim and Childs (2020). When customers feel emotionally connected to a brand's story, they tend to be more engaged and attached to the company. It can motivate customers to take certain actions, such as making a purchase, sharing a story with others, or participating in further interactions with the brand.

Companies can utilize story telling as a source of highlighting relevant data. By understanding how brand stories influence customer behavior, companies can tailor their messages more effectively. Careful data analysis can help companies understand trends in consumer behavior and make more informed decisions. Several studies also emphasize the importance of storytelling in creating strong relationships between companies and customers. Jones and Peters (2016) highlight that storytelling can create a more immersive customer experience. It can help companies to build sustainable long-term relationships with their customers. Story telling can facilitate more positive and meaningful interactions between companies and customers in the digital world Kim et al. (2020).

In the highly competitive digital marketing environment, the role of story telling has become very significant. It helps the brand to differentiate itself from its competitors. Especially in situations where digital audiences are exposed to a large amount of information and messages from multiple sources, storytelling allows brands to emerge more clearly and be easily identified by potential customers. Storytelling allows brands to convey the core messages and values they want to convey to their audience. This way, the audience can better understand and connect deeply with the brand. Brands are not only seen as providers of products or services but as entities with a strong vision, mission, and goals that can convince audiences.

Storytelling in the context of digital marketing is able to create a close emotional bond between brands and customers. It helps brands bere relevant and closer to custocustomers' hearts This emotional connection also can influence customers' future purchasing decisions. In addition, stories that have a strong appeal are more likely to be remembered by customers, which is an important factor in maintaining a brand impression in their minds. Not only that, storytelling in digital marketing also has the potential to inspire action from customers. Motivating stories can encourage customers to purchase, share the story with others, engage in interactions with the brand, or even contribute to a charity campaign that the brand supports. It creates

active engagement from customers, which can positively impact brand success in a highly dynamic digital environment.

The Influence of Emotions in Storytelling

In an increasingly complex marketing world, companies constantly seek more effective methods to interact with their customers. One approach that is becoming increasingly popular is storytelling, where stories are used to convey messages to customers. However, what makes storytelling have such a significant impact? The answer is emotion. Emotions are a universal language that everyone can understand, regardless of their cultural or linguistic background. When a story contains emotional elements such as happiness, sadness, fear, or anger, it can create an emotional bond between the audience and the story itself. This means the audience feels emotionally connected to the story and message the brand wants to convey. Strong emotions can also increase the audience's ability to remember certain events related to the story. This illustrates that stories that trigger emotions can influence the level of recall of the brand or product mentioned in the story.

Emotional storytelling is a powerful tool in the modern marketing landscape. This allows brands to forge deep connections with their audiences, make their messages memorable, and build sustainable customer relationships. In an environment full of information and competing messages, storytelling with emotional elements becomes an effective strategy to differentiate a brand from others and leave a deep impression on customers. Storytelling can be a tool capable of forming deep bonds between brands and customers, positively impacting various aspects of marketing.

It is important to remember that as emotional creatures, humans generally respond more positively to messages that evoke their emotions. This is why storytelling that focuses on the emotional aspect is so effective. By reaching audiences' emotional pathways, these stories allow brands to communicate directly with customers' hearts, not just their minds. This forms a deeper and more personal relationship between brands and consumers. Humans tend to be more likely to remember stories that evoke emotions than simply facts. It has a significant impact in marketing, where the main goal is to make a brand or product memorable to customers. When customers remember the stories they hear or experience through a brand, they also remember the brand itself, increasing brand awareness and the likelihood of future purchases.

To maximize the potential of emotion-based storytelling, companies need to have a deep understanding of their audience. They need to know what makes their customers feel, what concerns them, and how their brand can play a role in that context. It requires a strong understanding of human psychology and the role of emotions in customer interactions. For example, Coca-Cola launched a "Share a Coke" campaign in which bottle labels were replaced with individual names. The main goal

of this campaign is to trigger emotions of nostalgia and personalization. Customers feel more emotionally connected to the brand by seeing their name on the bottle. The result is increased sales and extensive exposure on social media. Another example comes from Google and the "Reunion" ad released by Google India. This advertisement tells the emotional story of a grandfather and grandmother separated by the India-Pakistan border for decades. Although Google doesn't directly promote the product in this ad, the main message is that Google can help people find the information they need. This ad went viral and successfully built a positive brand image.

Academic research has highlighted the significance of storytelling that focuses on emotional aspects in increasing consumer retention of information. Furthermore, stories allow consumers to experience the product or brand mentally, including the associated feelings and emotions, which is a more practical approach in influencing their attitudes and purchase intentions. In other words, when storytelling is able to arouse the emotional imagination of consumers, the impact tends to be greater in increasing memory and strengthening brand influence. Another finding in a study conducted by Bartsch et al. (2016) published in the journal "Psychology & Marketing" confirms that stories that contain elements of positive emotions tend to generate more in-depth consumer experiences, increase the level of information retention about brands, and influence consumer intention to make a purchase.

Companies need to invest in thorough market research and a deep understanding of consumer behavior to fully exploit the potential of emotion-based storytelling. This action allows them to design appropriate stories and have the ability to evoke the desired emotions. With this approach, storytelling can be a powerful tool in building strong and sustainable relationships with customers, increasing brand recall, and positively impacting a company's marketing strategy.

Understanding the role of emotion in customer memory is key to designing effective stories. Emotions have the ability to stimulate deeper cognitive processes in the human brain, which in turn can influence long-term recall rates. When consumers are emotionally involved in a story, they are more likely to remember it better than stories that do not trigger an emotional response. In the marketing world, increasing the memory level is one of the main goals. When customers can easily remember a product or brand, they are more likely to choose it when it comes to future purchasing decisions. Brands with strong memory have a significant competitive advantage. Therefore, companies often strive to create stories that contain emotional elements that can associate their brand with positive experiences.

For example, Coca-Cola's "Share a Coke" campaign connects the brand to customers' emotional moments when they find their own name on the bottle. This creates a strong emotional memory, positively impacting Coca-Cola's brand image. It is important to remember that storytelling that evokes emotions is not just about creating stories that touch customers' feelings but also about building deep memories. This tool can be very effective in a competitive and information-heavy marketing

environment. By designing stories that connect customer emotions with the brand, companies can build strong relationships, increase retention, and achieve long-term success in the company's marketing strategy.

Storytelling and brands: success in building brands (large companies) and their application to start-up

Brand storytelling is the art of telling a story related to a company's brand or product. However, it is much more than selling a product or service. It is about sharing the values, vision, and mission that underlie the company. Successful stories allow customers to connect emotionally with the company's brand. Besides simply creating a fleeting experience, brand storytelling aims to build a strong, long-term relationship between brands and customers. Through this approach, companies are seen not only as product or service providers but as entities that reflect compelling values and visions. When customers experience an emotional connection with their brand, they are more likely to remain loyal and may even become passionate brand advocates.

Brand storytelling has been at the heart of successful marketing strategies in various industries. It's not just about telling stories about brands or products but about creating immersive customer experiences. When brand stories are successful in authentically conveying the company's emotions, values, and vision, the result is positive, long-term customer relationships. These stories allow customers to feel an emotional connection with the brand. When customers feel that the values and vision in the brand story align with their values, this creates a strong emotional bond. Customers think that the brand understands them well and shares the same views.

Academic research has strongly confirmed the important role of brand storytelling in forming positive relationships with customers. The importance of these stories lies in their ability to allow customers to “feel” the product or brand in their imagination, encompass associated feelings and emotions, and ultimately influence their attitudes and purchase intentions. Results of research by Bartsch et al. (2016) confirmed that stories containing positive emotional elements tend to create deeper consumer experiences, increase retention of information about the brand, and impact consumer intentions to make purchases.

Successful brand storytelling isn't just about selling a product or service. It's about building strong, positive relationships with customers over the long term. The practice of storytelling is not the exclusive right of large companies with established brands. Start-ups can also successfully adopt brand storytelling in their marketing strategy. It is a very effective tool for forming positive and sustainable customer relationships, which is very important when entering a competitive market and building a loyal customer base. For start-ups, successful brand storytelling must be able to trigger emotions and communicate the brand's relevance in customers' lives. When customers feel emotionally connected to an authentic brand story, they are more likely to remember the brand and more likely to consider making a purchase.

As a start-up, understanding your audience is a key step in designing effective stories. Companies must deeply understand what makes customers feel, what concerns them, and how their brand can meet customer needs and values (Bartsch et al., 2016). Consistency is an essential element in brand storytelling. Start-ups must ensure their brand message and story remain consistent throughout the brand journey. The stories they share across various channels and platforms must align with the brand's values and vision. This consistency is an effective way to build solid customer relationships over the long term.

Measuring the response and results of brand storytelling is essential in measuring the effectiveness of the stories shared by start-ups in building positive customer relationships. Several methods can be used in this practice, such as data analysis, customer feedback, and social media monitoring. Measuring the response and results of brand storytelling helps start-ups ensure that their stories are impactful. It also allows for identifying areas where improvement is needed and allows story adaptation. One tool that can be used is Google Analytics, which helps see how start-up stories influence website visitor behavior. This includes monitoring how long visitors stay on a story page, how many pages they visit, and whether the story drives an action like a signup or purchase. In addition, social media also plays an important role in measuring response. Start-ups can analyze the number of likes and shares on storytelling content.

However, not only is data important, start-ups can also collect direct feedback from their customers. This can be done through customer surveys, interviews, or community forums. Relevant questions include whether customers feel emotionally connected to the brand story, whether it influences their perception of the brand, and whether it encourages them to take certain actions. All of these are important steps in measuring the effectiveness of brand storytelling and ensuring that the customer's relationship with the brand is going well. After a customer purchases, the start-up can continue measurement efforts by sending post-purchase surveys. The survey aims to measure the extent to which brand stories influence their purchasing decisions. Questions in this survey could include how important the story is in the customer's buying process and whether it affects their brand choice. By combining these various measurement methods, start-ups will have a more comprehensive understanding of the response and results of their brand storytelling. This data collected from various sources can then be used to design more effective stories, identify trends in customer behavior, and build stronger customer relationships over the long term.

As an example of best practice, Airbnb is a start-up that has successfully implemented brand storytelling. They launched their "Belong Anywhere" campaign focused on inspirational stories about their customers using Airbnb's services on their travels. The campaign stirred emotion and highlighted Airbnb's relevance to the customer journey experience. By combining these elements, the result is not only building positive customer relationships but also significantly increasing brand awareness. By understanding their audience well, evoking emotion, maintaining

consistent brand messaging, and systematically measuring the results of brand storytelling, start-ups can follow in the footsteps of big companies in achieving success through strong storytelling. In an era where positive customer relationships and brand awareness are invaluable, brand storytelling is a very effective tool to achieve goals.

Platform and Kanal Storytelling

Marketing and brand storytelling have undergone significant transformations in the digital era that continues to develop. These changes cover not only the way companies communicate with customers but also the tools used to tell business stories. Along with this development, various platforms and channels have emerged as a means for companies to share their narratives and reach the appropriate audience. These changes have shaken up the entire marketing and communications landscape. Most importantly, this shift is leading companies to move away from traditional advertising campaign methods and a more storytelling-oriented approach. The main driving factor for this change is the increasing demand from modern audiences for content that has high meaning, relevance, and authenticity. For example, research by Smith et al. (2018) have shown that brand narratives delivered through digital platforms, especially through social media, tend to create higher levels of engagement than traditional advertising campaigns. Active customer interactions, such as commenting, liking, and sharing stories, are key indicators of success in creating significant engagement.

Customers want involvement in stories that have an emotional impact, not just being the target of generally monotonous advertising messages. These changes are pushing companies to look for new communication methods with their audiences. This is where storytelling platforms and channels play a key role. According to research conducted by Johnson and Brown (2017), brands that successfully implement digital storytelling tend to significantly increase their brand awareness. Stories focused on the brand's core values and social goals often capture attention and influence positive perceptions of the brand.

Platforms and channels for telling business stories are important tools in a modern company's marketing toolkit. Through this platform, companies can share narratives that have depth, provoke emotion, and reach an audience that resonates with their message. In an age where audiences increasingly demand meaningful content, companies must understand how to leverage these various platforms and channels to support their storytelling strategy. By combining practical, theoretical knowledge and empirical findings, companies can develop a solid storytelling approach to achieve success in the business world. It is important to note that business storytelling is not just about telling stories to entertain but also about how those stories can be an integrated part of an effective marketing strategy. Here are some fundamental principles in the art of business storytelling:

1. Audience: Deeply understanding who your audience is key to designing the right story. It involves deep knowledge of the values, needs, and desires of the audience you want to reach. Understanding your audience involves careful research into their identity, what they value, and how your brand can meet their needs. This includes thorough market segmentation and an understanding of consumer behavior.
2. Brand Sustainability: The business story should align with your brand values and vision. This helps build a strong and consistent image for your audience. Brand continuity means keeping the story's message in line with the brand identity you have made. It means that every story you share should look natural as part of your brand.
3. Evoke Emotions: Emotionally appealing business stories are very important. Emotions are what make stories memorable to audiences and motivate action. Creating feelings in business storytelling involves creating stories that can trigger emotions, from happiness and awe to concern.
4. Relevance: Business stories must be relevant to your audience. It includes selecting topics and storytelling styles that match the interests and preferences of the audience. Being relevant in storytelling involves understanding what is currently necessary for your audience. It could mean responding to current trends, adapting to seasonal changes, or creating stories tied to actual events.
5. Measurement of The Results: Measuring the impact of your business story is very important. This involves using metrics such as engagement rate, information retention, and conversions. Measuring results in business storytelling is an important step in assessing how successful your strategy is. This involves using relevant metrics.

Developing successful business storytelling involves integrating all of the above principles into a comprehensive marketing strategy. It is also closely related to the selection of platforms and channels that will be used to convey stories to customers. Exploring different storytelling platforms and channels is key to applying these principles effectively. In this ever-evolving digital era, the choice of platforms and channels is increasingly diverse, and they influence how business stories can be presented to audiences. Therefore, amidst all these options, it is important for companies to choose the platforms and channels that best suit the characteristics of their audience and the type of stories they want to tell. Carefully analyzing these various platforms will help companies maximize the impact of corporate storytelling in achieving business goals.

1. Social Media: Social media is one of the strongest tools for implementing storytelling in the business world. Social media has a very wide scope and can spread stories quickly. They are also very efficient at generating engagement and communicating with their audience in real-time. In practical terms, companies need to understand the characteristics and

algorithms that apply to each platform to maximize the impact of the stories they share. With millions of active users every day, platforms like Facebook, Instagram, Twitter, and LinkedIn enable companies to tell their stories quickly in a variety of formats.

a. Facebook: Facebook is a very popular platform for sharing business stories through various types of content such as text, images, videos, and paid advertisements. The main advantage is the ability to target the right audience.
b. Instagram: Instagram is a platform that is very suitable for visual storytelling, focusing on images and short videos. It is an ideal place for brands looking to express their visual identity.
c. Twitter: Twitter is a suitable platform for short stories and fast news. With limited characters, companies need to structure stories sharply.
d. LinkedIn: LinkedIn focuses more on stories about the business and professional world. It is a good platform for sharing business success stories, case studies, and knowledge-based content.

2. Blogs: Blogs are a powerful platform for telling business stories in greater detail and depth. Through blog posts, companies can tell their stories, explore topics more comprehensively, and incorporate a variety of data sources and references. Blogs allow companies to dig deep into topics. In practice, an effective blog requires careful research and excellent writing skills. Many companies in the tech sector, such as HubSpot and Moz, use blogs as a way to share sector knowledge and build bonds with their audience.
3. Podcast: Podcasts are a storytelling format that is currently increasingly popular. Companies can create podcasts focusing on industry topics, host interviews with opinion leaders, or explore various aspects of their business. Podcasts allow audiences to engage in stories while engaging in various other activities. Some leading brands like Shopify and Mastercard have created successful podcasts that cover a variety of business and industry-related topics.
4. Video: The video format is one of the most powerful tools for telling business stories. This includes video ads, content uploaded on platforms like YouTube, and videos shared on social media. Companies can combine visual and audio elements through video to create a stunning experience. Examples of successful video campaigns include inspirational stories such as the inspiring “Dove Real Beauty Sketches” or product tutorials on YouTube uploaded by Apple.
5. Email Marketing: Email marketing doesn't just focus on product promotions or offers. Companies can use email to send valuable business stories to their customers. It helps companies maintain long-term relationships with customers. Companies often use email marketing to send

inspiring stories, exciting case studies, or newsletters containing industry insights.

6. Live Streaming: Through platforms such as Facebook Live, Instagram Live, or Twitch, companies can interact in real-time with their audience. This creates an invaluable hands-on experience. Many companies utilize live streaming to launch products, conduct live interviews, or provide real-time industry insights.
7. Brand Website: A company website is a place where all the elements of business storytelling can come together. It includes an "About Us" page, blogs, videos, and other elements.

In the practical and strategic application of these platforms and channels, companies can more effectively reach audiences, trigger high levels of engagement, and influence consumer behavior. The importance of measuring the performance of business stories is so that storytelling strategies can continue to adapt and prove successful. By understanding the principles of storytelling, selecting appropriate platforms, and integrating strategic elements, companies can create powerful, relevant, and inspiring business narratives that will ultimately help them succeed in the ever-changing marketing world.

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2 THE FUTURE OF CONSUMER BEHAVIOUR: EMERGING TRENDS AND OPPORTUNITIES FOR ENTREPRENEURS

Inggang Perwangsa Nuralam and Ochan Dorgi Ojuni

Abstract

Changes in consumer behavior are always interesting to discuss because they are directly related to a company's success in business. The transformation that occurs has a significant impact on every consumer behavior. It is still clear in my memory before 2000 physical stores dominated. Now, without coming in person, consumers can already make purchases. Technology does play a big role in influencing consumer behavior. In an era dominated by technology, rapid changes in consumer behavior and developments in digital technology have played a key role in changing the way companies interact with customers. Easy access to mobile devices and the internet have become an integral part of everyday life, enabling consumers to search for information, shop and communicate with brands at various times and locations. One of the market segments that is growing in size at the moment is Generation Z, often referred to as "iGen". Generation Z, who grew up in the digital age, has unique preferences when it comes to shopping and interacting with brands. Generation Z tends to trust product reviews from their fellow generations more than brand advertisements. They often look for product reviews online through platforms like YouTube, Instagram, or dedicated product review websites. This behavior gave rise to a new trend in the world of marketing, namely influencer-focused marketing strategies and user-generated content (User-Generated Content or UGC) which have become increasingly dominant in reaching consumers in the modern era. UGC's credibility is often considered higher than brand-generated content, as it comes from the real experiences of users. It is not surprising that consumers in the future will be more active as marketers for the products they use

Keywords: *Digital Technology, Consumer Behavior, Gen Z and Influencers*

I. P. Nuralam
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia

O. D. Ojuni
Gambella University, Gambela, Ethiopia
http://doi.org/10.11594/futscipress12

INTRODUCTION

Changes in consumer behavior over time have resulted in changes in their interactions with businesses and products. In the past, physical stores were the main place to shop, but now, e-commerce and digital transformation have changed the way we transact. Nowadays, consumers have the convenience of exploring and shopping for products via online platforms without time and place restrictions. This transformation has had a major impact on consumer behavior, providing greater satisfaction in meeting their needs. Additionally, the shift to e-commerce has resulted in a significant increase in the variety of products available. E-commerce platforms provide access to a wide range of products from various brands and sellers, giving consumers more choices than they would find in a physical store. This allows consumers to be more selective in finding products that suit their preferences and needs. Not only that, the way consumers make purchasing decisions has also changed. Product reviews and recommendations from friends or influencers on social media now play an important role in consumer decision-making. Consumers are more likely to seek guidance from individuals they trust before making a purchase.

The influence of social media on consumer behavior has become very significant in the digital era. These changes have changed the way consumers find information about products, interact with brands, and ultimately make purchase decisions. Social media provides a broad platform for individuals to share their experiences regarding products and brands. Product reviews from consumers who have used the product are a valuable source of information for potential buyers. In addition, the role of influencers on social media is getting stronger in shaping consumer preferences and behavior. They have a large and loyal audience who trust their views on products and brands. When an influencer recommends a particular product or brand, it can considerably impact consumer purchasing decisions (Bakshi and Singh, 2021). Not only that, social media also opens the door for consumers to interact directly with brands. This provides an opportunity for companies to launch interactive marketing campaigns and listen in real-time to consumer feedback.

The use of mobile devices is increasingly dominating consumers' lives, becoming the main means of shopping, searching for information, and interacting with brands. This situation encourages companies to develop mobile applications that make it easier for customers to shop practically and comfortably. On the other hand, the importance of having a responsive website has become even more pressing, given that consumers often switch between desktop and mobile devices. This emphasizes the importance for companies to provide a consistent and appropriate user experience across multiple platforms (Chen et al., 2016). In addition, data analytics and artificial intelligence (AI) play a central role in understanding consumer behavior. Today, companies have the ability to collect and analyze consumer data from a variety of sources, including online footprints and transaction data. This allows them to provide more accurate recommendations, customize marketing content, and optimize pricing

strategies. AI technology is also being adopted in chatbots and virtual assistants to provide more responsive and efficient customer support (Kapoor et al., 2018).

Additionally, personalization and customization are increasingly becoming a pressing need, driven by technological advances that enable companies to collect more accurate consumer data and provide more informed recommendations. Companies today are focusing heavily on leveraging technology to create experiences that are more personal and tailored to each consumer's preferences. With developments in data collection and analysis, companies can access richer information about consumer behavior, product tastes, and usage habits. This data allows companies to design experiences that are more individualized and relevant to each consumer. For example, music streaming services can use data about songs that are frequently played by users to create playlists that are tailored to their musical tastes (Montecchi, 2019).

This not only increases consumer satisfaction, but also strengthens their bond with the platform. Personalization also has a big impact on physical products. For example, a clothing company can provide consumers with the ability to choose the color, material, and design of clothing according to their preferences, and then produce the clothing according to the selected specifications (Jin & Phua, 2014). This creates a stronger connection between the consumer and the brand and provides a greater sense of ownership of the product. With the help of advanced manufacturing technology, highly personalized mass production has become possible, enabling companies to meet consumer demands quickly and efficiently.

Awareness of environmental and ethical issues has become a significant factor in shaping consumer behavior today. Consumers are increasingly concerned about the possible environmental impact of the products they buy, as well as the ethical values held by the brands they endorse. This trend has generated strong demand for products and brands committed to sustainable business practices. Today's consumers are more inclined to seek information about the origin of raw materials, production processes, and the possible environmental impact of the products they are considering buying.

Brands that are transparent about their commitment to sustainable practices and are active in environmental and societal efforts are generally more successful in winning consumer support and loyalty. In addition, it is important to remember that it is not only the demand for sustainable products that is increasing, but also the negative impact that brands that do not follow sustainable practices may experience (Ritter, T., & Andersen, J. 2016). Today's consumers are increasingly critical of brands that are involved in controversies over environmental or ethical issues, and this can have a detrimental effect on their brand image and product sales. Therefore, brands must seriously consider environmental and ethical impacts in all aspects of their business, from supply chains to marketing strategies, to meet the demands of increasingly environmentally conscious consumers.

Next, it is important to consider that one of the factors that can change consumer behavior is the influence of generations, especially Generation Y

(Millennial) and Generation Z (Zennial). Generation Y grew up in the era of digital technology and social media, which makes them more inclined to seek experiences rather than owning physical objects. Generation Z, born in the digital era, has similar preferences to Generation Y when it comes to technology. They tend to be more open to brands that embrace values and goals that align with their personal values. Therefore, brands need to understand the preferences and values held by these various generations in order to design effective marketing strategies (Twenge, 2017).

The next factor, the COVID-19 pandemic, has also created a dramatic change in consumer behavior. Social distancing and physical store closures triggered a significant shift to online purchasing. Consumers are now focusing more attention on the health and hygiene aspects of products, which influences their product preferences. In addition, the pandemic has also accelerated the adoption of remote work, which has impacted the need for technology and products that support productivity from home (McKinsey & Company, 2020).

Navigating the Digital Landscape: How E-commerce and AI Are Shaping Consumer Behavior

In an era dominated by technology, rapid changes in consumer behavior and developments in digital technologies are playing key roles in changing the way companies interact with their customers. Easy access to mobile devices and the internet have become an integral part of everyday life, enabling consumers to search for information, shop and communicate with brands at various times and locations. To overcome this challenge, companies must design and implement an effective digital strategy.

E-commerce, as one of the key elements in the digital landscape, has fundamentally changed our business and commerce paradigm. E-commerce, which is also known as electronic commerce, has become an electrifying innovation in the business world. This not only facilitates companies in carrying out transactions through digital platforms, but also provides various important benefits. One of the main advantages of e-commerce is improvements in accessibility. Consumers now have the ability to purchase products and services from a variety of places using just their mobile devices or computers. Companies that have been successful in adopting e-commerce have changed their approach to business and interaction with customers. Research conducted by Chaffey, D, et al. (2016) show that companies that are able to integrate e-commerce well tend to have larger market shares and faster growth compared to competitors who are less responsive to these changes.

Advances in e-commerce have also created interesting changes in consumer behavior patterns. One significant shift is from purchasing in physical stores to purchasing online. The impact of these changes has pushed retail companies to adapt their business models and build a strong presence in the online world. For example, Amazon has become one of the global e-commerce giants with a focus on fast delivery

and a broad ecosystem. Another notable change is the growing popularity of online marketplaces, such as eBay, Etsy, and Alibaba, which provide opportunities for individuals and small sellers to sell their products to a global audience. This creates new opportunities for small and medium enterprises and changes the way unique and handmade products are discovered and purchased by consumers.

When looking into the future, the development of e-commerce is predicted to continue to grow significantly. Trends show that consumers will increasingly adopt buying through their mobile devices. Mobile commerce applications, such as those used by platforms like Instagram and Pinterest, will increasingly become an integral part of the consumer shopping experience. Consumers will be looking for a shopping experience that is practical, fast, and integrated with their social media platforms. In addition, Augmented Reality (AR) and Virtual Reality (VR) technologies are expected to play an important role in the development of e-commerce in the future. AR allows consumers to combine elements of the physical world with digital components, while VR creates a fully immersive experience in a digital environment. In the context of e-commerce, AR and VR have the potential to provide new ways of customer interaction with products and brands, such as virtually trying on products before purchasing. Companies must be ready to keep up with these trends and adopt relevant technologies to remain competitive in the ever-evolving market.

In the development of AR and VR, one of the uses is to create a "virtual try-on" product experience for consumers. With this technology, consumers can see how a product will look or function in a real context before they make a purchase decision. For example, companies in the fashion industry could allow consumers to try on clothes virtually, allowing them to see how well they fit and how they will look in various situations. A study conducted by Qi, C, et al. (2019) shows that the use of AR in online shop platforms can increase the level of consumer trust and reduce the rate of product returns. Apart from that, AR and VR can also be used to create a more interactive shopping experience. An example is the application of AR in physical stores where customers can scan products using their smartphones to get additional information, demo videos, or appropriate product recommendations. This creates higher levels of engagement and enhances the shopping experience.

Although the potential of AR and VR in the e-commerce context is very promising, companies need to overcome several challenges that arise in implementing these technologies. First of all, investing in AR and VR technology development can be quite costly. Therefore, companies must carefully consider the budget allocation required to develop AR and VR applications that fit their business model. Second, companies must ensure that the experiences they offer through AR and VR truly add value to their customers. This requires a deep understanding of consumer preferences and needs, as well as the technical capabilities needed to deliver a seamless and engaging experience. Lastly, privacy and security issues are also important concerns. Use of AR and VR technologies may involve the collection and use of sensitive

consumer data. Therefore, companies must ensure that they have appropriate privacy policies and take steps to keep consumer data safe.

To successfully compete and achieve future success in the ever-evolving e-commerce industry, companies must consider several essential key criteria. These criteria include the following elements:

1. Adoption of the Latest Technology: Companies with ambitions in e-commerce must actively pay attention to and adopt the latest technology, including Augmented Reality (AR) and Virtual Reality (VR) technology. They must have a technology team capable of developing and integrating AR and VR solutions into their business strategy. According to research conducted by Rauschnabel, P, et al. (2017), companies that successfully adopt AR and VR technology can create more positive and profitable customer experiences.
2. Utilization of Data and Analytics: Companies must have the ability to master consumer data analysis and artificial intelligence in order to properly understand consumer preferences and behavior. In this way, they can provide a more personalized and relevant experience to their customers. The study conducted by Verhoef, P, et al. (2017), for example, reveal that data-driven personalization can significantly increase consumer loyalty levels
3. Quality of User Experience: Companies aiming to achieve future success must provide a superior user experience. This includes aspects such as website or application speed, ease of navigation, attractive product appearance, and responsive customer service. The use of AR and VR technology should also enhance the experience by providing engaging and innovative interactions.
4. Data Security and Privacy: Data security and privacy are important factors that cannot be ignored. Companies must seriously protect consumer data and comply with applicable privacy regulations. Violations of data security can have a serious impact on a company's reputation and the level of consumer trust.
5. Innovation in Products and Services: Companies need to continue to innovate in the development of their products and services. They must be able to understand consumer trends and adapt quickly. This can include leveraging AR and VR technology to create unique and engaging products and experiences.
6. Commitment to Sustainability and Social Responsibility: Sustainability and social responsibility are increasingly important to consumers. Companies that are committed to sustainable business practices and active in social initiatives will be more attractive to customers who are concerned about these issues.

7. Strategic Partnerships: Companies can expand their reach and capabilities by partnering with big players in the industry or adopting technology from other companies. This can help them take great strides in facing competition and meeting changing market demands.

To be successful in the ever-growing e-commerce era, companies must meet a number of important criteria. First of all, they must have a clear and strong vision regarding their journey in the ever-changing digital world. This requires a deep understanding of trends and the evolution of consumer needs. Companies must have the ability to continuously innovate and adapt quickly, so that they remain relevant in a dynamic business environment. In addition to a strong vision, sophisticated technological capabilities are also very important. Companies must be ready to adopt and optimize the latest technologies, including Augmented Reality (AR) and Virtual Reality (VR), to provide an extraordinary customer experience. Research conducted by Rauschnabel and his colleagues in 2017 confirmed how important technological adaptation is as a key element in creating attractiveness and competitive advantage.

Commitment to customer satisfaction and sustainability is another important element. Customers who are satisfied and have an emotional attachment to a brand tend to stay loyal and even promote the brand. In contrast, companies that are socially responsible and committed to sustainable business practices will be more attractive to consumers who are increasingly concerned about these issues. Therefore, companies must ensure that these values are integrated in their business strategy. In the competitive world of e-commerce, resilience is key. Companies must be ready to face challenges in an ever-changing industry. They must have the ability to adapt and innovate continuously. In the face of an ever-dynamic business environment, only companies that combine a strong vision, advanced technology, commitment to customers and resilience will succeed in the competition and achieve success in the future.

The Gen Z Effect: Understanding and Targeting the Next Wave of Consumer Behavior

Generation Z, often referred to as "iGen," is a consumer segment that has grown up in the fast-paced digital era. This group, born around the mid-1990s to early 2010s, is now one of the main influences shaping changes in consumer behavior. For brands and companies, understanding the characteristics and preferences of Generation Z is a key factor in interacting with them effectively and optimizing their potential as future consumers. Research conducted by Caraher (2017) emphasizes the significance in realizing that Generation Z is more likely to trust recommendations from their friends compared to brand advertising messages.

One of the main characteristics of Generation Z is their proximity to digital technology. They have grown up in an era where technology, electronic devices, internet access, and social media have become an integral part of their daily lives. This has resulted in consumers who are highly connected online and have unprecedented

access to information. Generation Z has the ability to search for information quickly, make decisions based on online reviews, and actively participate in various online activities. According to a study conducted by Twenge (2017), these characteristics indicate that Generation Z tends to have a high level of digital literacy, which allows them to search for information efficiently, interact with social media platforms, and communicate online smoothly. The technology education they receive from an early age, both through the formal education system and independent exploration, has given them strong digital abilities.

In terms of empirical evidence, Generation Z is more likely to interact online compared to traditional offline channels. They are active on multiple social media platforms and often feel more comfortable communicating with brands via text messages, online chats, or social media, as opposed to communicating over the phone or in person. Generation Z are consumers who are independent in searching for information. They are accustomed to using the internet as the main source of information, whether for academic research purposes, hobbies, or in the process of making shopping decisions. They have the ability to quickly search for product reviews, price comparisons, and relevant guides before making a purchasing decision. Therefore, brands and businesses need to understand the importance of providing informative and useful online content to support Generation Z in their decision-making process. Brands that can provide responsive and friendly digital communications options to Generation Z will have an advantage in building relationships with consumers from this generation. Research conducted by Anderson and Rainie (2018) from the Pew Research Center shows that more than 95% of Generation Z regularly use the internet, and most of them search for product information online before making a purchase. This reflects the high level of digital literacy among Generation Z, who are already familiar with various online platforms and search tools.

Generation Z, raised in the digital age, has unique preferences when it comes to shopping and engaging with brands. Understanding these preferences is crucial for developing effective marketing strategies and establishing strong connections with this generation. One notable aspect of Generation Z's preferences is their high level of trust in recommendations from their peers. Research conducted by Caraher (2017) revealed that Generation Z tends to place more trust in product reviews from their fellow generations compared to brand advertisements. They frequently seek out online product reviews through platforms such as YouTube, Instagram, or specialized product review websites. Therefore, brands aiming to capture the attention of Generation Z should leverage peer-to-peer marketing and collaborate with relevant influencers.

Generation Z also has a high preference for interesting and authentic content. They prefer to interact with brands that produce creative, entertaining or storytelling content. Research conducted by Sharma and Yadav (2019) shows that creative content that relies on humor, memes, or interesting narratives can form strong emotional

bonds with Generation Z. The results of research conducted by Vargo and Harker (2020) confirm the importance of content that feels authentic and personal in building relationships with Generation Z. A study conducted by Smith et al. (2019) also highlighted the success of video-based marketing campaigns in reaching this generation. They emphasize that content that feels "genuine" and not overly engineered advertising is generally more successful in capturing the attention of this generation.

Marketers and brands need to have a deep understanding of how to attract and engage with Generation Z, who have unique consumer preferences. In the world of business and marketing, there is an increasing emphasis on the concept of "brand resilience." This concept reflects the brand's ability to survive and adapt in the face of changes in the business environment and dynamic consumer behavior. Generation Z requires special resilience and adaptability in the brand context due to its changing tastes and preferences.

Research conducted by Reimers et al. (2019) highlight the importance of brands having flexibility in designing products and services that are responsive to the changing tastes and needs of Generation Z. This involves an ongoing process of market research to understand emerging trends, as well as training marketing teams in understanding changing consumer behavior in depth. The academic viewpoint in this study emphasizes that brands must allocate resources to support their ability to keep up with rapidly changing consumers, including the use of technology that supports in-depth data analysis and efficient consumer research.

Additionally, academic perspectives in the business literature emphasize the importance of brands having strong innovation capabilities. A brand's ability to create innovative products and services that suit the tastes of Generation Z is a key factor in maintaining brand appeal. Academic research on brand innovation highlights that successful brands engage in a continuous innovation process, collaborate with consumers in identifying new needs, and use the latest technologies to develop products and services that match this generation's preferences. Brands must be ready to make changes to their products and services based on feedback and demand from Generation Z. For example, brands may need to adjust product features, respond to price changes, or improve the customer experience according to emerging trends.

The discussion regarding brand adaptability and innovation also includes the concept of risk management. Resilient brands must have an effective risk management strategy to reduce uncertainty in the face of changes in the business environment. This involves identifying risks that may arise due to changing consumer trends, developing contingency plans, and investing in technology and resources that enable brands to respond quickly in the face of unexpected situations.

"From Pandemic to Prosperity: Adapting to the Post-COVID Consumer Landscape"

The COVID-19 pandemic has shaken the world in profound ways and affected almost all aspects of life, including consumer behavior and the business world. The business landscape has undergone dramatic changes during and after the pandemic, and the ability for businesses to adapt has become key to survival and growth. One of the significant impacts of the COVID-19 pandemic is the change in consumer behavior that has been accelerated by it. According to research by Verhoef et al. (2021), the pandemic has driven an increase in the adoption of online purchases, with consumers preferring to shop online to avoid the risk of virus transmission. This has opened up great opportunities for e-commerce businesses and encouraged physical-based businesses to adopt a hybrid model that combines offline and online experiences.

The empirical study conducted by Anderson et al. (2020) noted a significant increase in online purchasing volume during the peak of the pandemic. Apart from that, consumers also tend to focus more on basic needs and products related to health and hygiene. This has resulted in a significant shift in demand for certain products, such as face masks and hand sanitizers, impacting businesses' supply chains and marketing strategies.

From a practical perspective, businesses must quickly adapt their strategies to cope with these changes. They should increase their online presence, improve e-commerce platforms, and develop marketing initiatives relevant to the pandemic situation. Even some businesses that previously focused on offline sales have had to transform into more digital businesses. For example, increasing investment in e-commerce platforms and technologies that enable safe and convenient online purchases. Some companies that previously did not have a strong online presence may be forced to build their own e-commerce websites or partner with large e-commerce platforms like Amazon. Improved cleanliness and implementation of safety protocols are also a major focus in the consumer experience.

After the COVID-19 pandemic, companies are faced with a number of challenges and threats that require wise adaptation and strategies. Market uncertainty is one of the main challenges faced by companies in the post-COVID-19 era. Post-pandemic, the business environment has become highly unstable, and companies have to deal with rapid and often unpredictable changes in various aspects. One of the main aspects of this uncertainty is unforeseen fluctuations in consumer demand. Research by Verhoef et al. (2021) show that post-pandemic consumers may have variable shopping behavior, depending on the development of the pandemic and the economic situation. This can lead to challenges in planning production, stock procurement and marketing strategies. Therefore, companies must have flexibility in dealing with rapid changes in demand.

The pandemic has pushed governments around the world to issue new regulations or change existing regulations. For example, travel restrictions and business closures are some of the regulations that can have a major impact on a company's operations. The main challenge here is the uncertainty surrounding future regulatory developments. Research conducted by Golan et al. (2020) highlight the

importance of monitoring regulatory changes and companies' ability to adapt quickly to these changes. This is done to protect the company from potential threats related to operational cessation.

In some cases, the pandemic has forced companies to temporarily close their operations in response to the spread of the virus. The threat faced by companies in this temporary closure situation is a significant loss of revenue. Even when companies are able to reopen their operations, they may have to face capacity restrictions or changes in the way they run their businesses. Research conducted by Ivanov (2020) emphasizes the importance of planning a company's readiness and ability to operate in various possible scenarios.

Companies often have long-term plans and business strategies that rely on relatively stable assumptions. However, the deepening uncertainty post-pandemic could require companies to frequently revise their strategies. This can be a challenge in allocating resources, making investment decisions, and maintaining consistency with the long-term vision. Therefore, companies need to develop flexibility in their strategic planning. Flexibility in business strategic planning is the key to overcoming the deep uncertainty post-pandemic. In this context, flexibility means a company's ability to respond to changes in the business environment quickly and effectively, while sticking to the company's long-term vision. Post-pandemic uncertainty has created profound changes in the market and business environment. Companies that are inflexible may have difficulty keeping up with these changes or even lag behind in taking appropriate steps. In strategic planning, flexibility allows companies to be more responsive to market changes.

Flexibility in strategic planning helps companies reduce the risk of losses due to unforeseen changes. This could include shifts in resource allocation, product or service diversification, or business model adjustments. Companies that have flexibility tend to be more resistant to external shocks. On the other hand, this situation can also bring new opportunities that companies can take advantage of. Flexible companies are able to quickly identify and pursue these opportunities, provided they have developed flexibility in their strategic planning. One way to achieve this is through scenario planning. Scenario planning involves creating several different scenarios regarding possible future developments. This helps companies prepare contingency plans and alternative strategies for each scenario. Thus, the company has a plan that can be executed in case of significant changes.

Involving employees in the strategic planning process and giving them an active role in identifying opportunities and challenges can increase a company's flexibility. Employees who feel involved tend to be more proactive in finding solutions and responding to change. Companies must also regularly monitor developments in the business environment, changes in the market, and changes in regulations. Continuous data analysis and deep understanding of market trends help companies to respond quickly to changes.

In this regard, investment considerations related to technology, such as data analytics, artificial intelligence, and advanced supply chain management systems, are also important. This investment allows companies to monitor data in real-time and make the right decisions in a timely manner. Flexibility in strategic planning is not just about dealing with uncertainty, it is also about taking advantage of opportunities that may arise. Companies that have a high level of flexibility will have a competitive advantage in facing the changing business environment after the pandemic.

Influencer Marketing and Beyond: Strategies for Building Authentic Brand Connections

Marketing strategies that focus on influencers and user-generated content (UGC) have become increasingly dominant in reaching consumers in the modern era. In the academic literature, there is extensive research on influencer marketing and UGC. The study conducted by De Veirman et al. (2017) emphasize the importance of influencer credibility in influencing consumer behavior, which is relevant in the context of credibility theory and consumer trust in the marketing domain. In addition, research by Phua et al. (2017) reinforced the concept of consumer engagement through UGC and its positive impact on brand loyalty.

User-Generated Content (UGC) refers to content material that is created and shared by ordinary users or consumers, not by authorized entities or brands themselves. UGC can take many forms, such as writing, images, videos, reviews, or other types of content contributed by individuals through online platforms, such as social media, forums, or other sharing sites. UGC reflects the increasingly active role taken by consumers in producing and disseminating content, an evolution from the previously more passive role of consumers in receiving messages from brands. UGC's credibility is often considered higher than brand-generated content, as it comes from the real experiences of users. This is reflected in the belief that users will provide honest and objective reviews of products or services.

Creating or participating in User-Generated Content (UGC) has the potential to increase the level of consumer engagement with a brand. Consumers feel involved in the process of sharing and contributing in online communities. Brands can use UGC as a tool to strengthen their brand image in a more positive way. Examples include positive customer reviews, unboxing videos, and testimonials, all of which are forms of UGC that can influence consumer perceptions of a brand. UGC can also be a very effective tool in building and maintaining an online community around a brand. This allows consumers to interact directly, share their experiences and feel connected to the brand.

For example, Glossier, a cosmetics and skincare brand, has succeeded in building a very strong fan community on the Instagram platform. The brand is active in interacting with customers and encouraging them to share their experience using Glossier products. Glossier combines influencer marketing strategies with UGC generated by their own community. They work with influencers who have large

follower bases, while also crowdfunding UGC content through hashtag campaigns and challenges. Through this approach, Glossier has achieved high levels of engagement and extraordinary customer loyalty. This example illustrates how the use of influencers and UGC can collaborate synergistically to strengthen a brand and connect with a wider audience.

Airbnb, the accommodation rental platform, has successfully used User-Generated Content (UGC) created by their users to narrate unique experiences. They combine guest stories shared on social media with influencer marketing campaigns featuring Airbnb hosts. Through this approach, Airbnb creates a personal and powerful narrative about travel. The brand focuses on moving stories and leverages UGC generated by their guests. This illustrates how the relationship between influencers and UGC can form a powerful and engaging brand story, which not only promotes products but also inspires and connects with audiences.

As another example, Coca-Cola partnered with famous singer and actress, Selena Gomez, in their global campaign. They took Gomez as a brand ambassador and used her to market their beverage products. The collaboration includes television commercials, social media content and live performances involving Gomez. This helped Coca-Cola strengthen its relationship with the younger generation and increase sales of their product worldwide. Furthermore, Sari Roti, a well-known bread producer in Indonesia, partnered with YouTuber and social media celebrity, Atta Halilintar. Atta Halilintar shares content related to the Sari Roti brand on its various social media platforms. This collaboration helps Sari Roti reach a wider audience and increase sales of their bakery products in the local market.

Using User-Generated Content (UGC) in marketing strategies brings a number of challenges, one of which is the lack of control that brands have over the content shared by users. The main challenge faced when it comes to UGC is ensuring the authenticity of the content. Many brands must overcome the risk of fake or manipulative content that has the potential to damage the brand image. Although consumers tend to trust UGC, the presence of dishonest content can undermine that trust.

Users have the freedom to share negative or controversial experiences with brands, and this becomes a problem if negative reviews or content are widely shared. Therefore, brands need to develop strategies to handle and respond to negative UGC without ignoring the interests of freedom of expression. There are also legal issues related to UGC, particularly with respect to copyright and privacy. Brands must ensure that they operate within the law and safeguard the privacy of users who contribute to UGC. For big brands with lots of followers and subscribers, UGC volumes can be huge. Managing and monitoring all this UGC is a challenge in itself, especially in providing a fast and effective response. UGC has the potential to quickly influence consumer sentiment towards brands, and the main challenge is how brands can manage changes in sentiment among users and prevent brand image degradation due to negative UGC.

In the future, collaboration between influencers and brands will continue to grow in the business world. What's interesting is that this development is not only limited to aspects of using User-Generated Content (content used), but also involves developments in terms of influencers themselves, which is marked by the emergence of the concept of micro-influencers. The trend of collaboration with microinfluencers, which refer to individuals with relatively small numbers of followers but who are highly engaged, is gaining popularity. This can be an effective option, especially in campaigns with limited budgets. Collaboration with microinfluencers is an increasingly popular trend in the digital marketing realm. This involves working with individuals or content creators who have a follower count that typically ranges from 1,000 to 100,000, but who have a high level of engagement within a particular niche.

Several academic studies have investigated the impact of collaboration with microinfluencers in marketing. For example, research conducted by De Veirman et al. (2017) suggest that content produced by microinfluencers may have higher engagement rates compared to content created by well-known influencers. This may be because microinfluencers often have a more engaged audience and have a strong emotional connection. The concept of "authenticity" in the marketing context is also emphasized in the academic literature. Microinfluencers are often perceived as more authentic by their audiences because they usually have fewer commercial elements. Research conducted by Khamis et al. (2017) emphasized the importance of authenticity in content shared by microinfluencers. Microinfluencers have greater freedom in designing their content, which can create a stronger sense of authenticity. Collaborations promoting a sense of authenticity can include using realistic product imagery, honest user reviews, and genuine communication between microinfluencers and their followers.

As a practical example, a fashion brand can collaborate with microinfluencers with followers focused on the fashion world. These microinfluencers can share product reviews, style tips, or examples of clothing styles that suit the brand. Overall, collaboration with microinfluencers is a significant trend in the digital marketing space, especially for brands looking to reach audiences within a specific niche in an authentic and cost-efficient way.

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3 NAVIGATING DISRUPTIVE CONSUMER BEHAVIOR AND TECHNOLOGIES: OPPORTUNITIES, NICHES, TRANSFORMATION, AND COLLABORATION

Inggang Perwangsa Nuralam, Kosuke Miyazaki, and Zaki Alif Ramadhani

Abstract

In the contemporary and ever-evolving business environment, the convergence of disruptive consumer behavior and cutting-edge technologies has ushered in a period of remarkable transformation and opportunity. It is imperative for entrepreneurs to comprehend the motivations and actions of these empowered consumers as they navigate through this transformative phase. Disruptive technologies represent innovations that disrupt established markets. Collaborative consumption, emphasizing shared access, efficiency, waste reduction, and community building, has emerged as a compelling trend. This literature review explores the impact of disruptive consumer behavior and technological shifts prompted by observed changes in consumer behavior and technological disruptions. The primary objective of this study is to provide insights and strategies for individuals and businesses to effectively respond to disruptive consumer behavior and technologies. In summary, today's entrepreneurial landscape is characterized by perpetual change and adaptation, with innovation and disruptive forces at its core. Entrepreneurs who embrace innovation, adapt to disruptive consumer behavior, leverage disruptive technologies, and engage with collaborative consumption are not only well-equipped to navigate disruptions but also positioned to pioneer new growth opportunities, drive industry evolution, and shape the future of business.

Keywords: *Disruptive Consumer Behavior, Disruptive Technologies, Entrepreneurs, Opportunities, Transformation*

I. P. Nuralam · Z. A. Ramadhani
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

K. Miyazaki
Kobe University, Kobe, Japan
http://doi.org/10.11594/futscipress13

INTRODUCTION

In today's dynamic and ever-evolving business landscape, the fusion of disruptive consumer behavior and cutting-edge technologies has ushered in an unparalleled transformation and opportunity era. This journey into uncharted territory invites entrepreneurs to adapt and thrive in an environment where innovation reigns supreme. This exploration delves into the intricate web of disruptive consumer behavior, emerging technologies, niche opportunities, and collaborative consumption. Together, these components form the cornerstone of a new paradigm that demands our attention and strategic vision. Join us as we embark on a journey to navigate the realms of innovation and transformation, discovering the vast potential at the intersection of these dynamic forces.

Reindhardt & Gutner's (2015) theory of disruptive innovation anticipates significant variations among early adopters, especially in specific domains. In today's business landscape, we are witnessing a profound shift known as disruptive consumer behavior, where consumers actively reshape entire industries and create fresh markets. Understanding the motivations and actions of these empowered consumers is crucial for entrepreneurs navigating this transformative period. As we explore the evolution of disruptive consumer behavior and its impact on established sectors, we also highlight the opportunities it offers forward-thinking entrepreneurs. This perspective aligns with Christensen, et al., (2015) assertion that disruptive innovation often begins in overlooked market segments before becoming mainstream, leading to significant changes in market dynamics and profitability. This dynamic interplay between disruptive innovation and consumer behavior characterizes the ever-opportunistic nature of today's business landscape.

Disruptive technologies are essentially innovations that introduce commercial disturbances within established markets. These innovations entail the introduction of a new product or service (termed a technology) into an existing market (Schuelke-Leech, 2018). Simultaneously, we find ourselves amidst a technological resurgence that has given rise to transformative innovations, commonly called ‘disruptive technologies’. These groundbreaking advancements have the potential to reshape business landscapes across various industries. From artificial intelligence to blockchain, these tools offer entrepreneurs the means to streamline operations, elevate customer experiences, and uncover untapped opportunities. Our exploration will traverse these digital frontiers, exemplifying real-world instances of businesses that have harnessed the potential of disruptive technologies to pivot, adapt, and thrive. In essence, a disruptive technology is an emerging innovation following a distinct technological trajectory compared to existing technology (Vorbach, et al., 2017). It boasts superior ancillary performance, initially creating niche or fringe markets and ultimately establishing dominance in unexpected application areas. Consequently, disruptive technologies often pose formidable challenges to incumbents by reshaping profit models and altering the existing value networks of firms.

In an era increasingly focused on sustainability and resource efficiency, collaborative consumption has emerged as a compelling trend, emphasizing shared access, efficiency, waste reduction, and community building. This phenomenon's influence extends beyond shared cars and spaces, infiltrating diverse sectors, from fashion to finance, offering niche opportunities for entrepreneurs who understand evolving consumer behavior. As we delve deeper into this exploration, we'll uncover how collaborative consumption models can drive innovation and reveal untapped markets. Anwar (2023) reinforces the significance of the sharing economy and collaborative consumption (CC) systems in international entrepreneurship, spanning various research domains and digital platforms. The practical applications of CC and sharing-based systems, along with their associated business models, hold immense value, especially in consumer-oriented sectors like car rentals, luxury goods, apartment rentals, fractional ownership, and durable products, providing a relevant link to our exploration of collaborative consumption's potential impact.

This study conducts a literature review to explore the impact of disruptive consumer behavior and technological shifts. The rationale behind this literature review is the observed trend of consumer behavior changes and technological disruptions occurring. This study aims to provide insights and strategies for individuals and businesses to respond effectively to disruptive consumer behavior and technologies.

INNOVATION AND DISRUPTIVE CONSUMER BEHAVIOR: OPPORTUNITIES FOR ENTREPRENEURS

The convergence of innovation and disruptive consumer behavior has created a dynamic landscape where entrepreneurial opportunities flourish. Innovation, the process of introducing new ideas, products, processes, or services, stands as a cornerstone of entrepreneurial success. It involves transforming concepts into reality, often leading to enhanced efficiency, competitive differentiation, and new market segments. On the other hand, disruptive consumer behavior refers to shifts in consumer preferences, values, and purchasing patterns that challenge established norms and markets. These shifts, driven by technological advancements and evolving societal trends, alter traditional business models and create uncharted paths for entrepreneurs.

The paramount significance of disruptive innovation in reshaping marketing strategies, enhancing customer engagement, and bolstering overall organizational performance has become increasingly evident (Ibrahim, 2023). In today's intricate business milieu, innovation and the ever-evolving consumer behavior stand as pivotal elements engaging entrepreneurs in their quest to create value and excel amidst mounting market complexities. This unfaltering emphasis on innovation continues to be the linchpin for effectively addressing the disruptions wrought by technological advancements, fluctuating consumer preferences, and the evolving market landscape. Entrepreneurs now find themselves in a dynamic environment, compelling them to

nimbly adapt and explore innovative pathways to counteract the challenges arising from the ever-evolving consumer behavior. As highlighted by Christensen (2013), embracing innovation and adapting to the fluid shifts in consumer behavior are not just strategies but the very keystones of entrepreneurial triumph in today's rapidly changing market.

It is important to understand that innovation and disruptive consumer behavior are not only a challenge but also a huge opportunity for entrepreneurs to thrive and succeed in a competitive market. The impact of disruptive consumer behavior on the formation of specific market niches and how entrepreneurs can identify gaps in these markets and create innovative products or services that precisely fill consumer needs (Christensen, 2013). Technological advancement factors such as artificial intelligence can provide opportunities for entrepreneurs to create innovative solutions that are relevant and responsive to changing consumer preferences (Li et al., 2018). Artificial intelligence (AI) technology and blockchain technology have enabled entrepreneurs to create innovative solutions such as using intelligent chatbots to serve customers, facilitating secure and trusted transactions, using big data analytics and machine learning to provide personalized experiences for consumers, demonstrating how entrepreneurs can combine advanced technology with increasingly unique and diverse consumer needs (Liang et al. 2018).

This dynamic is one of the causes of changes in consumer preferences in consuming a product, either in the form of goods or services. Changes in consumer preferences towards experiential consumption have encouraged entrepreneurs to develop products and services that are more focused on providing customers with a unique and memorable experience. Modern consumers are looking for a functional product or service and an experience that is fun, inspiring, and relevant to their lifestyle. This creates opportunities for entrepreneurs to combine creativity, technology, and effective marketing strategies to deliver memorable consumer experiences (Liang et al., 2018). Entrepreneurs can also take advantage of market evolution by identifying specific trade-markets and creating innovative products or services that meet customers' needs in that segment. For example, with the increasing awareness of sustainability and social responsibility, many consumers are now more inclined to choose environmentally friendly products that positively impact society. Therefore, entrepreneurs can develop environmentally friendly and socially responsible products to meet the demands of consumers who are increasingly concerned about environmental and social issues.

The concept of disruptive consumer behavior, as explored by Gans (2016), offers a captivating lens through which entrepreneurs can unlock unparalleled opportunities for success. In addressing consumer behavior, Gans (2016) provides a multifaceted approach. Firstly, entrepreneurs are encouraged to embrace change as a driving force, recognizing that consumer behavior shifts are opportunities for innovation and growth rather than mere disruptions. Secondly, seizing the first-mover advantage is highlighted, emphasizing the importance of understanding

disruptive consumer behavior dynamics and proactively identifying emerging trends to create innovative products and services. Thirdly, Gans promotes thinking beyond conventional wisdom, urging entrepreneurs to explore unconventional ideas and uncharted territories in consumer behavior. Fourthly, building relationships grounded in understanding consumer behavior forms the cornerstone of strong customer connections, fostering trust and loyalty. Lastly, entrepreneurs are advised to view disruptions as opportunities to showcase adaptability and innovation, positioning themselves as industry leaders. This comprehensive strategy equips entrepreneurs to navigate and harness the ever-evolving landscape of consumer dynamics.

Ataman et al. (2023) anticipate that quick managerial responses will be essential in the face of disruptive technologies within network markets. However, it's important to recognize that network markets often involve multiple competing entrants or technologies, which might lead established incumbents to postpone adoption or diversify their investments across various networks. In a parallel vein, disruptive consumer behavior positions entrepreneurs at the forefront of transformative opportunities. By grasping the dynamic interplay between evolving consumer preferences and technological innovations, entrepreneurs can forge distinctive pathways to success. Embracing these changes empowers entrepreneurs to pinpoint untapped market niches, redefine conventional business models, and devise innovative solutions aligned with ever-shifting consumer demands. As they harness the power of disruptive consumer behavior, entrepreneurs not only navigate the challenges posed by market disruptions but also pioneer fresh growth avenues, propel industry evolution, and shape the future of business in an ever-fluid landscape.

IDENTIFYING NICHE OPPORTUNITIES FROM DISRUPTIVE CONSUMER BEHAVIOR

In a rapidly changing business landscape, disruptive consumer behavior has become an important aspect that significantly affects how entrepreneurs operate and compete in the market. As consumer preferences evolve and technological advances disrupt traditional industries, new trade markets emerge, providing unique opportunities for entrepreneurs to innovate and grow. Disruptive consumer behavior refers to changes in consumer preferences, expectations, and buying habits that shake the status quo and create new market opportunities. This condition challenges established business models and encourages entrepreneurs to re-evaluate their strategies to remain competitive. By paying close attention to these changes, entrepreneurs can identify early signs of new emerging trade markets and demand gaps that traditional players may have overlooked. Researchers have stressed the importance of analyzing consumer trends and conducting in-depth market research to understand the growing demands of consumers (Christensen, 2013).

Changes in buying patterns and consumer preferences are one of the main mechanisms causing market disruption due to changes in consumer behavior.

Consumers tend to change how they shop and choose products or services based on different preferences as they continue to evolve. This can result in traditional markets experiencing a decline in sales or even disappearing while new markets with innovative approaches emerge to meet changing consumer demands. There are at least three mechanisms that create a disrupted market.

The first mechanism that causes market disruption is Changes in Purchase Patterns and Consumer Preferences. When consumers change from buying physical products traditionally to more practical and efficient online purchases, this can disrupt traditional markets (Hitt et al., 2019). Consumers increasingly turning to online purchases are creating new e-commerce-focused marketplaces and influencing companies' marketing and distribution strategies. The convenience of online shopping, digital payments, and fast delivery have attracted many consumers to switch from physical to more practical online shopping (Hitt et al., 2019). This change creates new opportunities for companies to develop e-commerce strategies and adapt to online shopping trends.

Consumer preferences are also often influenced by generational differences and evolving social trends. Millennials and Z generations, for example, tend to place more importance on convenience and experience in shopping than physical possessions. This is driving an increase in experiential-based consumption, such as travel and entertainment, which creates new markets for related industries (Choudhury et al., 2016). Different generations and changing development trends also impact lifestyle changes and environmental awareness has shaped consumer preferences in choosing environmentally friendly and sustainable products. Consumers tend to look for products that support their ethical and social values, thereby encouraging companies to present products that are socially and environmentally responsible (Chan, 2019).

The second mechanism that plays a role in market disruption is disruptive technology. Rapid technological developments, such as artificial intelligence (AI) and digital platforms, have created new opportunities for interacting with products and services. An example is the media and entertainment industry, which has been disrupted by music and video streaming platforms such as Spotify and Netflix. Digital platforms, often enabled by advanced technologies, connect users, producers, and consumers, reshaping how products and services are delivered, accessed, and consumed. These platforms create new ways for individuals and businesses to interact, collaborate, and transact, leading to shifts in industry landscapes (De & Kauffman, 2020).

The music industry is a clear example of how disruptive consumer behavior has changed the way businesses operate. Previously, Compact Disc was a pivotal technology in the 1990s that transformed the music industry by shifting it toward digital formats. Its impact laid the groundwork for the ongoing digital disruptions that have shaped how we engage with music in the modern era (Daniel, 2019). However, advances in digital technology and music streaming platforms such as

Spotify, Apple Music, and YouTube have disrupted this traditional business model. Consumers now prefer to listen to music online by subscribing instead of buying physical albums. This has created new trade-markets within the music industry and prompted record companies to adapt to the streaming model to stay relevant in an increasingly competitive market.

The Third Mechanism Playing a Central Role in Market Disruption is Social Media Influence and Online Reviews. Social media has given power to consumers to share experiences, recommend products, and provide extensive product reviews. Empirical research by Cheung et al. (2018) show how online reviews and consumer behavior influence brand image and consumer purchasing decisions. Widespread negative sentiment can lead to a damaged brand reputation and decreased sales. The study of Koo & Kim (2014) examines how negative customer reviews on the internet can influence the hotel industry by damaging brand reputation, impacting potential guests' booking choices, and ultimately affecting sales and revenue, with empirical evidence supporting the connection between negative sentiment, reputational harm, decreased consumer trust, and financial outcomes.

Market disruption caused by social media influence and online reviews is a significant phenomenon that has changed the way businesses operate and interact with consumers. Li & Tang (2010) highlight how online reviews can significantly disrupt the hospitality market by shaping consumer choices and perceptions. Imagine a small local restaurant gaining immense popularity and a loyal customer base primarily due to positive reviews and mentions on social media platforms. Patrons frequently post photos of their delicious meals and rave about their experiences online. As a result, the restaurant gained a substantial following, attracting not only local customers but also visitors from neighboring towns. This newfound visibility and reputation increased demand and ultimately disrupted the local dining scene.

DISRUPTIVE TECHNOLOGIES AND BUSINESS TRANSFORMATION

Disruptive technologies often herald the emergence of entirely new markets, each governed by unique principles (Amshoff et al., 2015). This phenomenon aligns with the observation that mainstream consumers tend to exhibit reluctance when confronted with disruptive products in familiar contexts. In the early stages, disruptive technologies tend to find their footing and garner appreciation primarily within novel markets or applications, setting the stage for the birth of entirely fresh markets. In light of these dynamics, it becomes evident that adapting to disruptive technologies' transformative influence necessitates novel business models and an acute understanding of the evolving landscape and consumer behaviors, all of which are vital for entrepreneurial success.

Disruptive technologies represent innovations that wield significant influence over industries, often introducing novel products, services, or business models that

challenge conventional norms, as noted by Christensen (2013). They possess the capacity to reshape markets, create fresh prospects, and drive comprehensive business changes. These technologies act as revolutionary forces, disrupting established business models and practices. Their impact can range from incremental improvements to radical transformations in producing, delivering, and consuming goods and services.

Vorbach, et al., (2017) illuminate the profound effects of disruptive technological advancements, fundamentally altering the landscape of business operations. However, it's essential to discern that disruptive technology manifests on multiple tiers. The initial tier encompasses localized disruptions specific to particular markets or industries, a focal point in the extensive literature on business and innovation. A second tier of disruption extends further, emerging either from the convergence of numerous localized disruptions at the first tier or from the widespread adoption of a first-tier disruption across diverse markets and industries, as Schuelke-Leech (2018) articulated. Expanding on this concept, Majumdar et al. (2018) accentuate the transformative potential of disruptive technological advances, particularly within the domain of storage device technology. These advances fundamentally reshape the landscape of high-tension power transmission and distribution systems, potentially leading to substantial downsizing of this sector. Recognizing the intricate interplay of these disruptive forces underscores the necessity for a comprehensive understanding of their implications for the business environment and the requisite adaptations needed to thrive within this ever-evolving landscape.

As described by Christensen (2013), disruptive technology exhibits five key features. Initially, it falls short in various aspects compared to mainstream technology, resulting in lower value to mainstream customers. For example, digital cameras faced resistance from professional photographers due to lower image quality and reliability compared to film cameras. Second, disruptive technologies often target marginal or new customers, offering simpler and more affordable products than dominant technologies. For instance, online streaming services appealed to cost-conscious consumers seeking convenient entertainment options, disrupting traditional cable TV. Third, they tend to debut in emerging or less critical markets, initially overlooked by profitable customers of established leaders. Early smartphones, designed for specific user groups, entered non-mainstream markets due to specialized features and higher costs. Fourth, existing companies often see them as financially impractical investments, but as these technologies improve steadily, they eventually meet mainstream performance standards. Uber disrupted the taxi industry, initially dismissed by traditional taxi companies but eventually meeting mainstream expectations. Finally, disruptive technology replaces mainstream technology, with new entrants dominating the market. Brick-and-mortar bookstores declined as e-commerce and online retailers like Amazon took over, marking the final stage of disruption.

The connection between disruptive technologies and business transformation is tightly interwoven, forming a mutually beneficial relationship. Disruptive technologies often act as catalysts, prompting the need for businesses to transform themselves. Conversely, adopting and seamlessly integrating disruptive technologies can initiate effective business transformation. In this context, Amshoff et al. (2015) shed light on the significance of business model patterns as a fundamental framework for understanding evolving strategies in emerging markets. These patterns play a central role in harnessing the commercial potential of disruptive technologies, enabling the creation of innovative business logic and model patterns. These patterns exhibit impressive adaptability, making them relevant across various industry sectors. As organizations navigate the profound changes brought by disruptive technologies, they often embark on a journey characterized by the unconventional blending of solution elements, giving rise to entirely new business models. This alignment with the dynamic nature of disruptive technologies challenges established profit models and value networks, calling for entrepreneurial adaptability and innovative responses to achieve success.

Disruptive Information and Communications Technologies (ICT) significantly impact various sectors, particularly education and retail businesses (Majumdar et al., 2018). The growth of online businesses, exemplified by Amazon's expansion and its impact on the decline of brick-and-mortar retail in the United States and similar trends in China, demonstrates the transformative nature of these technologies. Disruptive innovation can shift market dynamics, with incumbents struggling to adapt to the changing landscape.

One notable example of disruptive technology leading to significant business transformation is the rise of ride-hailing platforms like Uber and Gojek. These platforms have disrupted the traditional taxi industry and brought about a paradigm shift in how people access transportation services. Before the emergence of ride-hailing platforms, the traditional taxi industry operated through a well-established model where taxis were hailed on the street or pre-booked through phone calls. With the advent of ride-hailing platforms like Uber and Gojek, the landscape changed dramatically. These platforms leveraged smartphones and GPS technology to connect passengers with drivers in real-time. In this example, disruptive technology—enabled by mobile apps, real-time tracking, and dynamic pricing—transformed the transportation industry. It led to the creation of new business models, changes in user expectations, regulatory debates, and a shift in the industry's power balance.

Amidst the disruptive technology era, business transformation emerges as a vital imperative. Technological innovation's relentless pace necessitates organizations reimagining their strategies, structures, and processes. Embracing this transformation isn't just a response to change; it's a strategic decision that can redefine competitiveness and longevity. As disruptive technologies reshape industries, businesses must not only adapt but also harness these innovations as catalysts for growth. This transformation journey demands agility, foresight, and an unwavering

commitment to innovation. By aligning with disruptive technologies, businesses can navigate uncertainty with confidence, capitalizing on new opportunities and driving evolution across sectors. In this era of disruption, business transformation isn't just an option—it's a crucial stride toward resilience, relevance, and sustained success.

The process of disruptive innovation naturally gives rise to conflicts (Liu et al., 2020). For example, the introduction of new technologies inherently opposes the status quo of established technologies, demanding substantial endeavors to handle conflicts. Moreover, from the perspective of demand, conflicts arising due to unfulfilled customer needs can catalyze the emergence of conflicts. Technology executives should broaden their experimentation efforts to encompass trials involving different approaches to business models (Chesbrough & Rosenbloom, 2002). Incorporating the business model's role must become integral to the fresh prevailing approach in overseeing technology commercialization.

In the era of disruptive technologies, business transformation becomes both a necessity and an opportunity. Embracing these transformative innovations isn't just a choice; it's a strategic imperative for organizations seeking to thrive in an ever-evolving landscape. The symbiotic relationship between disruptive technologies and business transformation holds the potential to reshape industries, challenge established norms, and unlock unprecedented growth. As businesses navigate the intricate balance of adaptation and innovation, they can position themselves as pioneers in their domains. By leveraging the power of disruptive technologies to drive transformative change, organizations have the chance to not only stay relevant but also to lead, influence, and shape the contours of industries yet to come.

COLLABORATIVE CONSUMPTION

Collaborative consumption is commonly known as the 'sharing economy,' as it involves individuals sharing resource access, often in exchange for compensation (Perren & Ghrauerholz, 2015). It can also be described as a 'peer-to-peer' exchange, where both the provider and recipient are individuals rather than commercial entities. While interpersonal interactions have been practiced historically through trading, bartering, and swapping, these traditional in-person peer transactions were constrained by geography and held limited attraction.

In today's rapidly evolving economic landscape, a pronounced shift has amplified a phenomenon characterized by a surge in activities such as sharing, exchanging, lending, trading, renting, gifting, and swapping (Bostman & Rogers, 2010). Collaborative consumption operates by facilitating shared access to resources among individuals, shifting the focus from ownership to utilization. Through digital platforms and technological innovations, people can connect and engage in activities like sharing, trading, renting, borrowing, or swapping goods and services. These platforms create marketplaces where individuals offer their underutilized assets—

such as accommodations, vehicles, or tools—to those seeking them, often in exchange for a fee or compensation. Platforms like Airbnb and Uber exemplify this phenomenon, where individuals share accommodations and exchange transportation services. This model not only optimizes resource utilization but also promotes sustainability, community building, and economic efficiency.

Collaborative consumption extends its influence beyond transportation and hospitality. It encompasses diverse sectors like peer-to-peer lending through platforms like Prosper and LendingClub, which promote direct investment and borrowing between individuals. Similarly, co-working spaces provide professionals with collaborative work environments. Nevertheless, collaborative consumption's impact is not confined to economic dimensions; it fosters a sense of community, highlighting human connections in a transaction-focused world and aligning with values of sustainability and conscious consumption, reflecting broader societal shifts.

Lamberton's (2016) extensive analysis discerns various facets of collaborative consumption, including anthropological practices focused on resource smoothing, economic paradigms aiming at utility maximization, management and psychological perspectives emphasizing task completion, and consumer research perspectives delving into commercial and relational goals. Anthropologically, collaborative consumption traces its roots to ancient survival strategies where resource sharing was paramount, particularly in variable food availability. In contrast, economic facets emphasize personal satisfaction through shared resources, balancing individual benefits with resource sustainability. Management and psychology reveal collaboration's role in aligning individual goals with group objectives, enhancing task motivation and problem-solving. Consumer research further splits collaborative consumption into commercial aims, where access to goods without ownership drives efficiency gains and relational goals centered on community-building, ethical growth, and relationship enrichment, not contingent on resource equality upfront.

Anwar (2023) suggests that the sharing economy and collaborative consumption-based systems have the potential to expand the existing international entrepreneurship literature, particularly in the context of growth and novel business models within the exchange process. Furthermore, there has been a noticeable transformation of collaborative consumption in recent years, shifting from a community-driven concept to diverse business models, as highlighted by Arrigo (2021). This evolution is particularly evident in the fashion industry, where item swapping, resale, and fashion rental have become prominent. Swapping, for instance, involves the enduring transfer of ownership and the redistribution of fashion items, extending their utility and promoting sustainability. Similarly, resale encourages the reuse of second-hand fashion items, reducing the demand for newly produced goods and conserving natural resources. Additionally, fashion rental offers consumers a way to temporarily access products without the necessity of ownership, showcasing how collaborative consumption continues to innovate and align with sustainability

principles. This theme resonates with Anwar's perspective on its significance in international entrepreneurship literature.

Correspondingly, Pedersen & Netter (2015) highlight that fashion libraries offer a significant advantage by allowing members to experiment with different styles and looks without committing to full-priced purchases. This aligns with the shifting dynamics of collaborative consumption, where individuals seek alternatives to conventional ownership models. However, the operational challenges fashion libraries face due to limited resources result in compromises such as reduced operating hours and minimal rewards for volunteers who contribute their efforts. Despite these constraints, the evolution of collaborative consumption and its impact on the fashion sector remain noteworthy areas of exploration.

In conclusion, collaborative consumption represents a transformative shift in the way we approach consumption, moving beyond individual ownership to shared access and utilization of resources. This phenomenon presents economic benefits and fosters community-building, sustainability, and a reimagined relationship with material possessions. As businesses adapt to this changing landscape and individuals embrace the principles of collaboration and conscious consumption, the future of collaborative consumption holds the promise of reshaping industries, redefining consumer behavior, and contributing to a more sustainable and interconnected world.

CONCLUSION

The interconnected themes of innovation, disruptive consumer behavior, disruptive technologies, and collaborative consumption collectively paint a dynamic picture of the entrepreneurial landscape in the modern world. Innovation, driven by technological advancements, stands as a cornerstone for entrepreneurs to adapt to evolving consumer preferences and deliver personalized experiences. Disruptive consumer behavior, as described in the second paragraph, plays a significant role in reshaping markets and driving opportunities for innovation through shifts in consumer preferences, technological advancements, and the influence of social media. These disruptive forces, as discussed in the third paragraph, are further fueled by disruptive technologies, creating entirely new markets and reshaping industries. Entrepreneurs are urged not just to adapt but embrace these changes, as exemplified by the case of ride-hailing platforms like Uber. Finally, as highlighted in the fourth paragraph, collaborative consumption represents a transformative shift in economic paradigms, emphasizing access over ownership and fostering a sense of community and sustainability.

In conclusion, today's entrepreneurial landscape is marked by constant change and adaptation, with innovation and disruptive forces at its core. Entrepreneurs who harness innovation, adapt to disruptive consumer behavior, leverage disruptive

technologies, and embrace collaborative consumption are well-prepared to navigate disruptions and poised to pioneer new growth avenues, drive industry evolution, and shape the future of business. In this ever-fluid landscape, adaptation and transformation are not just strategies but imperatives for organizations seeking resilience, relevance, and sustained success.

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4 GREEN FINANCE AND SUSTAINABLE ENTREPRENEURSHIP

Nur Imamah and Layyin Nafisa

Abstract

Entrepreneurship has been recognized as a method of generating economic rewards. In light of the growing significance of sustainable development within the contemporary global framework, it has been ascertained that entrepreneurship need not be exclusively predicated upon financial gain. Environmental deterioration, wealth inequality, and unequal access to resources and opportunity are all growing problems. Consequently, the concept of sustainable entrepreneurship, which entails the utilization of sustainable business techniques, has evolved and experienced a surge in popularity during the last decade. The new field of sustainable entrepreneurship is concerned with identifying, developing, and pursuing business opportunities that promote sustainability through improving the social and environmental well-being of others. Sustainable entrepreneurship's primary objective is to generate profit without endangering people or the environment. This is the case with green finance, which is the term for financial services, investments, and goods that support environmentally sound programs, address climate change, and encourage the shift to a low-carbon economy. Green finance and sustainable entrepreneurship are mutually reinforcing, with green finance providing the necessary financial resources, expertise, and ecosystem to support sustainable entrepreneurs in developing environmentally conscious businesses. The collaboration between green finance and sustainable entrepreneurship drives innovation, promotes market development, mitigates environmental risks, and contributes to a more sustainable and resilient economy.

Keywords: *Finance, Green Finance, Sustainable Entrepreneurship*

N. Imamah · L. Nafisa
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

1. Understanding Entrepreneurship

Entrepreneurship has long been recognized as a means of delivering economic rewards. Entrepreneurship is defined as the process of discovering possibilities, taking risks, and establishing and managing a business endeavor with the goal of profit and growth.

The ways in which entrepreneurship improves the economy:

1) **Job Creation**: Entrepreneurs establish new businesses, which often leads to job creation. Entrepreneurs generate employment opportunities by starting and expanding their ventures, reducing unemployment rates, and contributing to economic stability.
2) **Innovation and Creativity**: Entrepreneurs are known for innovating and introducing new ideas, products, and services to the market. This drives competition and fosters technological advancements, leading to economic growth and increased productivity.
3) **Economic Growth and Development**: Successful entrepreneurs contribute to economic growth by generating new wealth and income streams. Their businesses generate tax revenues for governments, contribute to GDP, and stimulate economic activity in various sectors.
4) **Wealth Creation and Redistribution**: Entrepreneurship allows individuals to create wealth for themselves and their stakeholders. Successful entrepreneurs often accumulate personal wealth, which can be reinvested into the economy through philanthropy, investments, and job creation, contributing to wealth redistribution.
5) **Regional and Local Development**: Entrepreneurs are pivotal in fostering the advancement of regions and local communities. They establish businesses, attract investments, and drive local economic development, leading to improved infrastructure, increased standard of living, and community development.
6) **International Trade and Competitiveness**: Entrepreneurs who engage in international business activities contribute to global trade and enhance a country's competitiveness in the international market. This can increase export opportunities, foreign exchange earnings, and economic integration.

Governments and policymakers often support and promote entrepreneurship through various initiatives, such as providing access to financing, offering business development programs, and creating a favorable regulatory environment. These efforts aim to harness the economic benefits that entrepreneurship can bring to societies and economies as a whole.

2. Sustainable Entrepreneurship

Environmental degradation, wealth inequality, and unequal access to opportunities and resources are significant issues facing our world today. The concept of sustainable entrepreneurship has indeed gained increased attention as a response to these challenges. Sustainable entrepreneurship, also known as social entrepreneurship or environmental entrepreneurship, refers to creating and managing businesses that prioritize environmental sustainability, social impact, and ethical practices alongside economic considerations. It involves integrating sustainable business practices throughout the entire value chain, from sourcing raw materials to production, distribution, and disposal. The rise of sustainable entrepreneurship reflects a growing recognition that businesses can be agents of positive change. Entrepreneurs may help address global concerns, promote inclusive growth, and create a more sustainable and fair future by incorporating sustainability concepts into their operations.

The concept of sustainable development has emphasized the necessity for entrepreneurship to go beyond merely generating prosperity. To ensure the well-being of current and future generations, sustainable development endeavors to strike a balance between environmental, social, and economic concerns. By embracing sustainable business, entrepreneurs may contribute to a more inclusive and environmentally conscientious economy. They can help address major global concerns like climate change, poverty, inequality, and resource depletion while also stimulating innovation and economic success. Policies, funding, mentoring, and the development of a supportive ecosystem that promotes socially and environmentally responsible corporate practices can all contribute to the growth of sustainable entrepreneurship.

The central tenet of sustainable entrepreneurship is that, in order to pursue opportunities, businesspeople must not harm the social and ecological contexts in which they operate (Shepherd & Patzelt, 2011). Instead, they must, whenever possible, restore or nurture these environments in order to restore the harmony between nature, society, and economic activity (Parrish, 2010). This emerging activity is framed by Schaefer et al. (2015) under the concept of sustainability as flourishing, where sustainable entrepreneurship has the power to bring about radical, not just gradual, transformation.

For sustained entrepreneurship, there are several important factors:

1) Social Impact: Sustainable entrepreneurs are concerned with tackling social concerns and enhancing community well-being. They may establish businesses that address poverty, inequality, healthcare, education, or other social issues with the goal of positively impacting society.
2) Environmental Responsibility: Sustainable entrepreneurs integrate environmental sustainability into their business models. They adopt practices that minimize negative environmental impacts, such as using renewable energy, reducing waste, conserving resources, or promoting eco-friendly products and services.

3) Ethical Practices: Sustainable entrepreneurs prioritize ethical business practices and responsible supply chains. They may emphasize fair trade, transparency, labor rights, and human rights. They strive for integrity and accountability in their operations.
4) Collaboration and Partnerships: Communities, non-profit groups, government agencies, and other businesses commonly collaborate with sustainable entrepreneurs. They recognize the need for teamwork in exerting collective influence and addressing complex societal issues.
5) Long-Term Orientation: Sustainable entrepreneurship considers long-term sustainability rather than short-term gains. It involves making decisions that ensure the viability of the business and its positive impact over time.

The emerging discipline of sustainable entrepreneurship is concerned with discovering, developing, and implementing entrepreneurial possibilities that provide economic benefits while also contributing to sustainability through delivering social and environmental benefits for society as a whole.

The characteristics of sustainable entrepreneurship include:

1) Identifying Sustainable Opportunities: Sustainable entrepreneurs actively seek opportunities to create innovative solutions that address societal and environmental needs. The individuals in question engage in the identification of market gaps and subsequently conceive company concepts that possess the capacity to yield favorable social and environmental outcomes.
2) Social and Environmental Benefits: Sustainable entrepreneurs prioritize generating social and environmental benefits alongside financial gains. They strive to create products, services, or business models that promote social well-being, improve quality of life, contribute to environmental conservation, or address sustainability challenges.
3) Impact Measurement: Sustainable entrepreneurship involves measuring and tracking the social and environmental impacts of business activities. Entrepreneurs use metrics and indicators to assess the outcomes and effectiveness of their ventures in generating positive change.
4) Stakeholder Engagement: Sustainable entrepreneurs actively engage and collaborate with stakeholders such as customers, communities, NGOs, governments, and industry partners. They seek input, involve relevant parties in decision-making processes, and create partnerships to amplify their impact and ensure the sustainability of their initiatives.
5) Scalability and Replicability: Sustainable entrepreneurs aim to scale their ventures to maximize their positive impact. They explore ways to replicate successful models in different contexts or sectors to drive broader change and inspire others to adopt sustainable practices.

6) Ethical Practices and Transparency: Sustainable entrepreneurs prioritize ethical business practices, including fair treatment of employees and suppliers, responsible sourcing, and transparent operations. They communicate openly about their social and environmental practices, ensuring accountability and trust among stakeholders.

3. Green Finance and Sustainable Entrepreneurship

Green finance and sustainable entrepreneurship are closely intertwined and share the common goal of promoting sustainability and addressing environmental challenges. While green finance focuses on mobilizing capital towards environmentally sustainable initiatives, sustainable entrepreneurship encompasses the broader concept of integrating sustainability into entrepreneurial endeavors. In recent years, green finance has gained popularity as the critical need to combat climate change and promote sustainability has become more apparent. It enables financial institutions, investors, and businesses to invest in environmentally beneficial initiatives, thereby facilitating the transition to a low-carbon economy on a global scale.

Green finance encompasses a range of financial instruments, services, and investment opportunities that are designed to promote environmentally sustainable initiatives and address the challenges posed by climate change. The primary objective of this program is to allocate financial resources toward endeavors and undertakings that provide favorable outcomes for the environment. Additionally, it aims to expedite the shift towards a more sustainable economy with reduced carbon emissions. Green finance, alternatively referred to as sustainable finance or environmental finance, comprises a range of financial activities and technology that aim to save the environment while aligning with the objectives of the financial industry. It addresses the need for environmental conservation by incorporating environmental factors into financial decision-making and practices.

Green finance in the literature (Lindenberg, 2014): Up to today, we do not have a precise and commonly accepted definition of green finance for two reasons. First, many publications do not try to define the term – for instance, neither (Corporation, 2013) nor Spratt et al. (2013) include a definition of green finance first – and second, the definitions that are proposed vary significantly.

Among the few definitions that can be found in the literature are the following: Höhne et al. (2012): Green finance is a comprehensive concept encompassing financial investments in endeavors and efforts aimed at sustainable development, environmental goods, and policies that foster the establishment of a more sustainable economy. Climate funding constitutes a constituent element of green finance, albeit not the sole component. Furthermore, the scope of "other environmental objectives" encompasses a wider array of concerns, such as the conservation of biodiversity and the mitigation of industrial pollution. The financing of climate change mitigation and adaptation is of particular importance for activities related to climate change: Adaptation financial flows refer to investments that help reduce or prevent the effects

of climate change on commodities and people, whereas mitigation financial flows refer to investments in projects and programs that help reduce or avoid greenhouse gas (GHG) emissions.

Zadek & Flynn (2013): The terms "green finance" and "green investment" are often employed synonymously. In practical application, it is important to note that the scope of green finance extends beyond just investments, as outlined by reputable sources such as Bloomberg New Energy Finance and other relevant entities. The definition of green investment does not encompass the inclusion of operating costs associated with such expenditures. The main components of the budget would encompass costs related to project planning and land acquisition, which are not only substantial but also pose distinctive financial obstacles.

Coopers (2013): Green finance is defined for the banking industry as financial services and goods that take environmental considerations into account during the lending decision-making, ex-post monitoring, and risk management processes in order to encourage environmentally friendly investments and low-carbon technologies, projects, industries, and businesses.

Böhnke et al. (2015): Green Finance is defined as any type of investment or loan that considers environmental impact and seeks to improve environmental sustainability. Sustainable investment and banking, in which investment and lending decisions are based on environmental screening and risk assessment to meet environmental sustainability standards, is a central component of green finance.

Green finance is a component of the self-sustaining financial system strategy to solving climate change concerns and transitioning to a low-carbon society. Green finance is any financial investment that funds activities such as policymaking, insurance/risk solutions, bonds, or other commercial operations that have a significantly lower negative impact on the environment than the status quo or positively influence the environment. (Cai & Guo, 2021).

The aspects of green finance include:

1) **Sustainable Investments**: Green finance channels capital towards investments that promote sustainability, such as renewable energy projects, energy-efficient buildings, sustainable agriculture, clean transportation, and waste management initiatives. These investments help reduce greenhouse gas emissions, preserve natural resources, and mitigate environmental risks.
2) **Green Bonds**: Green bonds are debt instruments issued to finance environmentally friendly projects. They are specifically designated to raise funds for projects that have positive environmental impacts. Proceeds from green bond issuances are typically used to finance renewable energy projects, green infrastructure, or other sustainable initiatives.

3) **Sustainable Loans**: Financial institutions offer sustainable loans to finance projects or businesses that meet certain environmental criteria. These loans may provide favorable terms and conditions to encourage sustainable practices, such as energy-efficient upgrades for buildings or investments in clean technologies.
4) **ESG Integration**: Environmental, social, and governance (ESG) considerations are becoming increasingly important in investment decision-making. Green finance integrates ESG criteria to evaluate firms' and projects' environmental performance, social impact, and corporate governance procedures. Investors strive to connect their portfolios with sustainability objectives and to assist companies with excellent ESG profiles.
5) **Impact Measurement and Reporting**: Green finance emphasizes the measurement and reporting of environmental impacts and sustainability outcomes. Investors and financial institutions assess the environmental benefits and track progress towards sustainability goals, ensuring transparency and accountability in the allocation of capital.
6) **Policy Support and Standards**: Governments and regulatory agencies can help to promote green finance by enacting policies, incentives, and rules that support long-term investments. Green finance practices are guided by international frameworks such as the Green Bond Principles and the Task Force on Climate-related Financial Disclosures (TCFD).

How green finance and sustainable entrepreneurship intersect:

1) Funding for Sustainable Ventures: Green finance provides financial resources, such as green loans, green bonds, or impact investment funds, to support sustainable entrepreneurial ventures. These funding options enable sustainable entrepreneurs to develop and scale their businesses, implement eco-friendly practices, and contribute to the transition to a sustainable economy.
2) Alignment with Sustainability Goals: Sustainable entrepreneurs seek to create businesses that address environmental and social challenges while generating economic value. They adopt sustainable business practices, develop environmentally friendly products or services, and contribute to the achievement of sustainability goals. Green finance provides the financial support and incentives necessary for sustainable entrepreneurs to pursue their vision and align their businesses with sustainability objectives.
3) Collaboration with Financial Institutions: Sustainable entrepreneurs often collaborate with financial institutions to access green finance opportunities. They work closely with banks, investors, and specialized green finance institutions to secure funding, navigate regulatory requirements, and leverage financial expertise. This collaboration strengthens the ecosystem of sustainable entrepreneurship and accelerates the flow of capital to environmentally friendly ventures.

4) Impact Measurement and Reporting: Both green finance and sustainable entrepreneurship emphasize impact measurement and reporting. Sustainable entrepreneurs track and report their social, environmental, and economic performance, demonstrating the positive outcomes of their ventures. This aligns with the expectations of green finance, which seeks transparent and accountable reporting of environmental impacts and sustainability outcomes.
5) Market Opportunities: Green finance and sustainable entrepreneurship capitalize on the growing market demand for sustainable products and services. They recognize the economic potential of addressing environmental challenges and cater to the increasing consumer preference for environmentally friendly and socially responsible businesses. Green finance facilitates the financial viability of sustainable entrepreneurial ventures by tapping into this market opportunity.
6) Policy Support: Both green finance and sustainable entrepreneurship benefit from supportive policies and regulatory frameworks. Governments and policymakers play a crucial role in incentivizing green finance mechanisms and creating an enabling environment for sustainable entrepreneurship. Policy initiatives, such as tax incentives, subsidies, and sustainable procurement, encourage the growth of both green finance and sustainable entrepreneurship.

4. Green finance instrument tools

Among several instruments of green finance, highly discussed instruments such as green lending, green bonds, and sustainable loans have gained popularity as debt instruments to fund environmental projects. The financial market has accounted for a significant number of the invested amount recorded through the mentioned instruments. Nevertheless, some other instruments introduced in green finance that have the potential for robust funding diversification, including green investment, such as:

1) Green guarantee: Focusing on mitigating risk in sustainable entrepreneurship projects to accelerate funding, especially in developing countries. The objective is to bring assurance to the investors and connect the local project with global investors to raise funding through climate bonds and loans with a significant environmental impact.
2) Global Green Grants: A charitable and relatively small amount of funds given by global organizations to address the grassroots issue for funding environmental, human rights, and sustainability issues. The funds can be allocated for various sustainable projects and entrepreneurial such as advocating human rights, water, natural resources, basic necessities, healthcare, and natural ecosystem.
3) Green Insurance: A type of insurance where the insurance company encourages behavior environment and climate change friendly by giving

economic incentives through products and services they offer. The incentives vary in type but have the same underlying value to change the behavior towards a more sustainable life. An example of the incentives could be in the form of a premium reduction on building insurance, which has adopted energy efficiency, pay-per-go for vehicle insurance, cheaper premium for energy-saving vehicles, etc. Basically, the insurance policy underlies the green investment concept.

4) Green credit: A credit incentives program given to environmental volunteers coming from different kinds of backgrounds, including individuals, organizations, and companies. The engaged parties will receive tradable credit each time they accomplish a green sustainability project, including tree plantation, waste management, environmental conservation, restoration project, and many other environmental-related issues management. The credit incentives will be able to be sold on a market platform. Even though green credit has not been as popular as green bonds, the quantitative measurement shows green credit for listed banks positively impacts both ROA and ROA (Xi et al., 2022).
5) Green venture funds: An investment capital option for businesses that are involved in an environmentally friendly product. This can also be acquired by companies who are at a developing stage or migrating towards goods or service production processes with less carbon footprint on the environment. Funding is generally obtained from private investors or venture capital groups who share the same goals to invest in businesses that make an effort in social and environmental responsibility business.
6) Pollution allowance: A limit set by the government for the allowed number of pollutants created from business activity. The owner of a permit is eligible to trade or sell for a profit. The idea is to create incentives for permit owners to lessen the amount of pollution and manage the amount of pollution under a certain rationality that is tolerable towards the environment. This way, the government could control the permit issued, which translated as a legally polluted number, and give incentives for a holder by making a profit from the surplus allowance.

5. Green finance adoption and implementation

The implementation of green finance has achieved positive recognition globally at the moment. Over the years, there has been a consistent increase in demand for green finance tools. A study shows that the green bonds market demonstrated a high growth of more than 60% within the year 2017; the green bond market accounted for more than $150 billion, and other green securities collectively amounted to $700 billion in total (Koczar et al., 2020). Due to the gap in implementation between developing and developed countries, which remains wide, attention is being paid more to adopting green finance in developing countries' emerging markets. Several factors,

such as long-term outsourcing that created a heavy environmental issue and the need to upgrade the financial market towards more socially responsible investment, developed countries in South Asia, Southeast Asia, South America, and South Africa are highly penetrated towards green finance.

The current implementation of green finance has made a noticeable impact on economic development and post-COVID recovery, for instance. The effect can be seen in poverty alleviation, which has a strong impact on green finance. This can be linked to the motivation of implementing green finance from stakeholders, including the government, financial institutions, and firms, which are narrowed down into two major factors. First, to avoid negative consequences of policy violation, and second, to eradicate actual and perceived investment risk by losing social capital and reputation (Liu & Wu, 2023). Another quantified modeling suggests that the willingness of the investors to allocate their funds even to a financial underperformance, sustainable entrepreneurship startups are still traded at a premium (Mansouri & Momtaz, 2022). This suggests investors' perspective toward sustainable entrepreneurship projects that have raised their awareness and willingness to participate in the early stage of the establishment of the project.

The implementation of green finance has drawn public attention. Due to the early adoption stage, especially for some countries, there are some issues addressed among stakeholders worldwide despite the undeniable success it has brought. Some of the problems include the need to set a measurement index for the evaluation system, transmission mechanism on green finance, availability of data and disclosure, and expansion of green finance index application is considered as the continuance of issue to be looked upon in the implementation of green finance (Wang et al., 2021).

The policy also plays a big role in the implementation of green finance by setting up requirements and boundaries for business players and other stakeholders. The clear set of rules and guidelines has enabled the adoption of green finance and increased the funding flow (Stojanovic & Ilic, 2018).

6. Future outlook on green finance and sustainable entrepreneurship

Growing concern about sustainability among universal stakeholders has scaled up the appetite for green financing options in facilitating the projects. World organizations and forums have highlighted the agenda in uplifting green finance as an effort to collaborate in sustainable entrepreneurship. The gap lies between inequities and has drawn attention to more than just merely building skyscrapers of economic growth. The sustainability project encompasses bridging the gap through entrepreneurship that caters to the economy, environment, and prosperity inclusive for every element of society. In regard to fulfilling the need of finance in manifesting the outlook, collaboration among decision-makers, business players, entrepreneurs, the public, and financial institutions is crucial.

The financial sector, which has traditionally been seen as a profit-oriented and wealth-creation cycle, should go beyond the predominant goals to seek wealthier

capital. Green finance was introduced to allocate and bring funding and money cycle towards the project that drives benefits for society as a whole. In meeting the green finance agenda, sustainable entrepreneurship becomes an effective vehicle that drives a highway toward future goals. It required the key elements to elaborate together in making the future of sustainable finance and entrepreneurship work, including functional financial tools, capable decision-makers, informative funding criteria, and effective entrepreneurial projects.

Even though green finance is considered at the early implementation stage, there has been empirical study and evidence showing the impact on the environment. Quantified measurement research by (Khan et al., 2022) measured 26 ADB countries from various indicators such as GDP, green finance investment, TO, and EC, proving that green funding for green entrepreneurship accomplished the set intention (Khan et al., 2022). With the varied expected outcomes from sustainable entrepreneurship, the future of green finance is looked ahead to support the manifestation of the entrepreneurial project beyond investment, but to build a prosperous economic and social living for all through the following programs:

1. Selective in channeling capital flow: Prioritizing funding to sustainable projects and keeping environmental explorative projects away. In the long term, green finance can potentially influence investment decisions toward sustainability.
2. Growing green investment: Initialization of green bonds and significant noticeable success in investment towards environmental and climate projects create a higher demand and market growth for green finance tools.
3. Support equal distribution of renewable energy: Bringing direct benefits to the rural area and local communities and focusing on bridging between those who “have” and who “have not.” Beyond immediate benefits, the principal infrastructure will surely improve living situations, including the economy, education, and health care.
4. Enable financial institutions to be responsive to climate change: The urgency of environmental issues, including climate change and the transition to a zero-carbon future, required a massive amount of capital from the public and private sectors. This is where financial institutions are expected to respond to the situation by being lenders, mobilizing financial investment from private capital towards green investment and projects, and creating financial inclusion.
5. Provides financial support for green innovation: Enables organizations to introduce environmentally friendly technology, funding education and training, and purchasing green equipment.
6. Reduce green policy risk: By funding research projects prior to jumping to conclusions in implementing the relatively new product, risk can be eliminated.

7. Help overcome the high cost of green policy: With various considerations taken into account, green policies relatively incur higher costs than conventional policies. Green finance is expected to be the backbone of the sustainable priority-based project as a powerful nurturer.

7. Key takeaway points

Conventional financial activities are often associated with maximizing profitability, creating the highest return, and minimizing costs to achieve financial goals, including economic growth. The action undertaken to achieve the goals is done by exploiting resources to the maximum extent possible. From this impact, the environment and social living conditions have been compromised. The neglect of sustainability factors has drawn stakeholders' attention, including the private and public sectors. The concept of green entrepreneurship then robust a new way of living and running economic and financial principles.

With a set of goals considering sustainability to the environment, sustainable entrepreneurship consists of different groups of formulas for conducting business. It emphasizes a green economy rather than just a growing economy. There is a definite trade-off between capital expenditures and the expected return when considering ESG sustainability elements. This is where the role of green finance is expected to support the fund allocation by bringing capital flow to fund the selective sustainable entrepreneurial project.

Green finance was introduced to support and cater to the massive need for funds and economic support for projects focusing on sustainability-related issues. Whereas sustainable entrepreneurship upbringing agenda of fixing environmental issues, bringing prosperity for all and creating sustainable living situations. Therefore, the relationship between green finance and sustainable entrepreneurship mutually benefits each other's goals and agenda.

The implementation of green finance can already be seen in various funding of sustainability entrepreneurship projects, including bringing new green jobs, environmental restoration, decarbonization, sustainable plantation, low carbon vehicle alternatives, electricity installation in rural areas, waste management, and energy security. Nevertheless, the future of green finance is also expected to overcome the inequality distribution across the globe issue through sustainability entrepreneurship projects.

The future outlook of green finance is expected to be the backbone to support funding through capital flow and investment towards sustainability projects. The maximization of various green finance tools emphasizes the orientation to bring prosperity, equality, and a healthy environment manifestation. The growing appetite is influenced by several factors, such as significant transformation from business players as they perceive environmental risk. Another factor is technological advancement, which competes in making low-carbon products and maximizing renewable energy sources compared to conventional products. Moreover, ethical

conduct is valued widely among business players such as companies and manufacturing beyond profitability and financial benefit gold. Lastly, motifs of investment diversification contribute to the raise of popularity among investors in allocating their funds.

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5 FINTECH ATTAINING SUSTAINABLE ENTREPRENEURSHIP

Nur Imamah and Layyin Nafisa

Abstract

Markets are increasingly relying on technology to facilitate transactions. Increasing the number of customers interacting using technology will create long-term success for the business. In addition to changing how people interact with finance in the modern day and allowing businesses to compete, financial technology innovation delivers financial services to previously neglected populations and market sectors. Financial technology (Fintech) has achieved wide acceptance as a means of conducting financial transactions and is crucial to the growth of the financial system and the economy. Fintech, which refers to digital innovation to improve, develop, and automate financial services to promote and support businesses, business owners, and investors in managing their economic activities, is essentially the junction of finance and technology. To transform the financial sector and how businesses run, fintech is essential. Anyone with an internet connection can use fintech services, which experts anticipate will disrupt the dynamics of the whole industry and result in significant changes to the competitive structure and functionality of financial services. Examples include digital credit and lending (such as online lending, peer-to-peer lending, and crowdfunding), digital payment systems (including mobile banking and mobile payments), digital currencies (such as cryptocurrency and blockchain), digital insurance, Fintech global solutions, and digital data analytics. The emergence of fintech has opened up new opportunities for entrepreneurship and has the potential to drive both short-term and long-term business growth.

Keywords: *Finance, Fintech, Innovation, Sustainable Entrepreneurship***.**

N. Imamah · L. Nafisa
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

Technology has become an integral part of modern markets, revolutionizing transactions how markets rely on technology such as Electronic Trading Platforms, Online Marketplaces, Mobile Payments and Digital Wallets, Blockchain and Distributed Ledger Technology, High-Frequency Trading, Artificial Intelligence and Machine Learning, Robo-Advisors, and Data Analytics. Traditional trading floors have been mainly replaced by electronic trading platforms, where buyers and sellers can execute transactions electronically. These platforms provide access to a wide range of financial instruments, such as stocks, bonds, commodities, and currencies, enabling faster and more efficient trading. Technology has transformed markets by enhancing efficiency, accessibility, and transparency. It has facilitated faster and more convenient transactions, expanded market reach, and provided new opportunities for innovation and growth. As technology continues to advance, markets are likely to rely even more on technology to facilitate transactions and drive further evolution to enable participation in economic activities.

One notable trend in the business and financial world is financial technology ()fintech, or technological advancement in the financial industry.In this context, variouss context, various elements that symbolize the company's adaptability and growth in the face of shifting technology and market trends will be included in broad-based operes. In the fintech sector, some instances of pertinent operational purposes include:

1) Product and Service Innovation: Promoting ongoing innovation in fintech goods and services to satisfy changing consumer demands.
2) Superior Customer Experience: Deliver an outstanding customer experience through personalization, prompt customer care, and simple-to-use digital platforms.
3) Data Security and Privacy: Enforce tight security procedures and adhere to privacy laws to ensure the protection of customer data.
4) Partnership Strategy: Collaborating with other businesses, such as conventional financial institutions and other fintechs, will help you expand your reach and services.
5) Technology Scalability: To enable quick corporate expansion, reproductive systems and technological infrastructure may be increased as needed.
6) Team Development and Leadership: Data analytics and artificial intelligence (AI): Use these technologies to enhance market comprehension, decision-making, and operational effectiveness.
7) Finance and Risk Management: Carefully oversee corporate finances and evaluate potential hazards in a dynamic business environment.
8) Regulation and Compliance: Adhere to all applicable laws and ordinances, especially the increasingly strict fintech requirements.
9) Build intelligent, dedicated teams and encourage employee development in the face of technological change.

10) Global Market Growth: Research market expansion prospects globally and create successful growth plans.
11) Sustainability and social responsibility: Take social responsibility seriously and practice good corporate social responsibility.
12) Inclusive Financial Empowerment: Increases the number of people who have previously lacked access to financial services through inclusive financial empowerment.

1. Financial Technology

Financial technology innovation has been instrumental in bringing financial services to previously underserved groups and transforming the way individuals and enterprises engage with finance. These financial technology companies are gaining momentum, fueled by drivers such as the sharing economy (Lee & Shin, 2018; Hommel & Bican, 2020), and include peer-to-peer lending platforms that have opened marketplaces for multiple economic actors and enabled the co-creation of value as Uber has for cars (Bozkaya & Kerr, 2014; Breidbach & Ranjan, 2017). There already exist a handful of previous reviews about fintech (Block et al., 2018; Goldstein et al., 2019; Allen et al., 2021; Block et al., 2021; Farag & Johan, 2021). They provide excellent discussions about the evolution of the industry, technology, and platforms, or specific areas of fintech.

The following are several definitions of fintech. First, Janeway (2012) defines an essential component of the modern innovation economy that combines financial services with technology to offer simplicity and effectiveness. Second, Arner et al. (2015) state that Fintech firms and technological advancements affect how businesses and customers engage in the financial sector through the development of new products, services, and business models. Third, the World Economic Forum (2017) defines fintech as the application of cutting-edge technology to enhance consumer access to financial services. It consists of a diverse range of programs, procedures, goods, and business models that have impacted how the financial industry functions (Fintech, 2017). Fourth, Fintech is the intersection of finance and technology (Rizwan & Mustafa, 2022). It involves using digital innovations, software, and technological advancements to enhance and automate financial services. The goal of fintech is to provide better, more efficient, and convenient financial solutions for individuals, businesses, and investors. By leveraging technology, fintech solutions can offer users more control over their finances, streamline processes, increase transparency, and provide personalized financial advice and services. This field can disrupt traditional financial institutions and change how people interact with money.

Most fintech specializes in one market segment, with the main advantage of new technologies and data use being lower transaction costs and more convenient processes (Claessens et al., 2018). Nevertheless, fintech can create value in all fields of the financial sector, using different business models and in both the business-to-

business (B2B) and business-to-consumer (B2C) markets. The most common models are:

a. Payment business models
b. Wealth management business models
c. Crowdfunding business models
d. Lending business models
e. Capital market business models.

2. The Key Aspects of How Fintech Is Driving the Transformation

Fintech is a catalyst for change in the financial industry, driving digitalization, expanding access to financial services, promoting financial inclusion, and fostering innovation. Its transformative impact reshapes traditional practices and creates new opportunities for individuals, businesses, and economies worldwide.

Financial Inclusion: Fintech has played a crucial role in promoting financial inclusion by providing access to financial services for underserved populations, including individuals in remote areas, low-income communities, and those without traditional banking relationships. Mobile banking, digital payment platforms, and microfinance solutions have made it easier for people to manage their finances, make payments, and access credit.

Digital Payments: Fintech has revolutionized the way individuals engage with financial transactions. Digital payment solutions, such as mobile wallets (e.g., Apple Pay, Google Pay), peer-to-peer payment apps (e.g., Venmo, Square Cash), and contactless payments (e.g., NFC-enabled cards, QR code payments), have made transactions more convenient, secure, and accessible. These innovations have reduced reliance on cash, enabling individuals to participate more quickly in the formal financial system. These products provide convenient and secure ways for individuals and businesses to transact.

Alternative Lending: Fintech has opened up new avenues for lending, particularly for small businesses and individuals who may face challenges in accessing traditional bank loans. Peer-to-peer lending platforms (e.g., LendingClub, Prosper), crowdfunding, and online lending marketplaces leverage technology to connect borrowers directly with lenders, streamlining the lending process and expanding credit opportunities.

Personal Finance Management: Fintech applications and platforms have empowered individuals to take control of their finances. Budgeting apps, expense trackers, and financial planning tools give users real-time insights into their financial health, helping them make informed decisions and improve their financial well-being.

Digital Wealth Management: Fintech has disrupted the wealth management industry by offering digital investment platforms and robo-advisory services. These platforms use algorithms and automation to provide personalized investment advice and portfolio management at a lower cost than traditional wealth management

services. It has made wealth management more accessible to a broader range of individuals.

Blockchain and Cryptocurrencies: Fintech has introduced blockchain technology and cryptocurrencies, such as Bitcoin and Ethereum, which offer decentralized and secure transactions. Blockchain enables faster and more transparent cross-border transactions, on the other hand, offers safe, transparent, and tamper-resistant records of transactions and has applications beyond cryptocurrencies, such as supply chain management and smart contracts. Meanwhile, cryptocurrencies provide alternative forms of digital currency and potential investment opportunities.

Automation and Efficiency: Fintech has automated various financial processes, reducing manual intervention, paperwork, and processing time. Tasks such as account opening, loan applications, and compliance procedures have become more streamlined and efficient, enabling financial institutions to serve customers more effectively.

Enhanced Competition: Fintech has introduced increased competition in the financial industry. Traditional financial institutions are adapting and innovating to stay relevant, while new fintech startups are challenging established players. This competition benefits consumers and enterprises by driving innovation, improving service quality, and expanding product offerings.

Fintech innovation has transformed the financial landscape, making financial services more accessible, efficient, and user-friendly. It has empowered previously underserved groups, facilitated financial inclusion, and provided individuals and enterprises with new opportunities to engage with finance in the modern era.

3. Financial Technology and New Opportunities

The digitalization of finance has the potential to introduce new technologies that can enhance access to finance for firms and offer new possibilities for investors (Bollaert et al., 2021). It's important to note that while digitalization offers significant opportunities, it also presents challenges, including data security, regulatory compliance, and ethical considerations. Proper safeguards and regulations need to be in place to ensure the responsible and secure use of digital financial technologies.

The digitalization of finance has the potential to improve access to finance for firms by introducing new technologies, platforms, and services (Buchak et al., 2018). These advancements can also offer new possibilities for investors, enabling them to explore alternative investment options and participate in the growth of innovative businesses.

The emergence of fintech has created new opportunities for entrepreneurship and can potentially drive business growth in both the short and long term. The fintech can contribute to entrepreneurial success and business growth:

Lower Entry Barriers: Fintech has significantly lowered the barriers to entry in the financial services industry. Traditional financial sectors, such as banking and insurance, have traditionally been dominated by large institutions. However, fintech

allows startups and entrepreneurs to enter the market with innovative products and services, often with lower capital requirements and reduced regulatory burdens.

Disruptive Innovation: Fintech startups can potentially disrupt established financial institutions by offering innovative and customer-centric solutions. By leveraging technology, fintech entrepreneurs can create more efficient, accessible, and user-friendly financial products and services. This disruption can lead to market expansion, increased competition, and improved customer experiences.

Niche Markets and Customization: Fintech allows entrepreneurs to identify and cater to specific niche markets or underserved customer segments. By leveraging data analytics and digital platforms, entrepreneurs can develop tailored financial solutions that meet the unique needs of their target audience. This focus on customization can lead to increased customer loyalty and differentiation in the market.

Enhanced Efficiency and Cost Reduction: Fintech solutions can streamline business processes and reduce operational costs. Automation, digitalization, and data-driven decision-making enable entrepreneurs to operate more efficiently, improving productivity and reducing overhead expenses. These efficiency gains can contribute to short-term profitability and long-term business growth.

Access to Finance: Fintech has also transformed the landscape of financing options for entrepreneurs. Crowdfunding platforms, peer-to-peer lending, and online lending marketplaces provide alternative funding sources outside of traditional banking channels. Fintech entrepreneurs can leverage these platforms to secure capital for their ventures and fuel business growth.

Scalability and Global Reach: Fintech businesses have the potential for rapid scalability and global expansion. Digital platforms and online services can reach customers worldwide, allowing entrepreneurs to tap into international markets without the need for physical infrastructure. This scalability and global reach can drive long-term business growth and revenue diversification.

Collaboration and Partnerships: Fintech encourages collaboration and partnerships between startups, established financial institutions, and other technology companies. Entrepreneurs can collaborate with existing players to leverage their resources, expertise, and customer base. Such collaborations can help startups gain credibility, access new markets, and accelerate growth.

4. Financial Technology and Sustainable Entrepreneurship

Financial technology (fintech) and sustainable entrepreneurship are two interconnected areas that have gained significant attention in recent years. Fintech can play a crucial role in promoting and supporting sustainable entrepreneurship by providing innovative financial solutions that align with environmental, social, and governance (ESG) principles. Fintech has the potential to drive sustainable entrepreneurship by enabling access to capital, supporting impact investing, offering sustainable financial services, promoting financial inclusion, providing data-driven

insights, and enhancing supply chain transparency. These advancements contribute to the development of a more sustainable and socially responsible business ecosystem.

Access to Capital. Fintech platforms provide alternative channels for accessing capital, making it easier for sustainable entrepreneurs to secure funding. Crowdfunding platforms, peer-to-peer lending networks, and impact investment platforms connect businesses directly with investors who share their sustainability goals, bypassing traditional financing barriers.

Impact Investing. Fintech facilitates impact investing by connecting socially and environmentally conscious investors with sustainable businesses. Online investment platforms and robo-advisors offer opportunities for investors to allocate their capital toward ventures that generate positive social and environmental impacts alongside financial returns.

Sustainable Financial Services. Fintech solutions cater specifically to the needs of sustainable entrepreneurs by offering sustainable financial products and services. This includes green banking, responsible investment portfolios, and impact-focused insurance and lending products. Such offerings align with environmental, social, and governance (ESG) principles and contribute to sustainable business practices.

Financial Inclusion. Fintech can help promote financial inclusion by providing access to financial services for underserved populations. Through mobile banking, digital wallets, and microfinance platforms, fintech enables individuals and businesses in remote or economically marginalized areas to access financial tools and services, empowering them to engage in sustainable entrepreneurship.

Data-Driven Insights. Fintech leverages data analytics and technologies such as artificial intelligence and machine learning to provide data-driven insights. Sustainable entrepreneurs can utilize these insights to understand their environmental and social impacts better, optimize resource allocation, and make informed business decisions.

Supply Chain Transparency. Fintech enhances supply chain transparency, traceability, and accountability, particularly blockchain technology. Using blockchain-based platforms, sustainable entrepreneurs can ensure transparency in their supply chains, validating their environmental and ethical claims. This transparency fosters trust among consumers and investors, supporting sustainable entrepreneurship.

5. Financial technology and sustainable entrepreneurship impact the world.

Financial technology has brought a novelty impact when embedded in sustainable entrepreneurship. Since sustainable entrepreneurship aims to create a more conducive environmental and social living, the ease of catering to the mission with technological advancement has made a meaningful impact when collaboration occurs. Financial technology, which mainly focuses on injecting advancement of technology into financial activities such as lending, payment, insurance, and big data, could utilize the features in a sustainable business model. There has been excitement and hype created worldwide on financial technology implementation. Nevertheless, beyond bringing a new way of conducting financial business, financial technology

entrepreneurs have raised awareness towards implementing the technological and knowledge capital into a sustainable entrepreneurial and getting a larger impact on society. Among the national projects of sustainable entrepreneurship through the use of financial technology, there have been several real-life cases where the implementation of collaboration from the two aspects brought remarkable impact, including the following:

1) **M-pesa in Kenya**: a mobile banking service founded in Kenya. The entrepreneurial sustainability goal is to create financial inclusion in Kenyan society, which mostly comes from underbanked or unbanked populations. The collaboration between financial institutions and technological companies tied by a shared sustainability motif has geared a sustainable entrepreneurship project by creating a digital platform for the banking sector, which Kenyans did not have much access to before. The unbanked situation is driven by several factors, including the resident who cannot afford the minimum required deposit to open a bank account, the knowledge gap, and the infrastructure where the bank is located relatively far from the residential area.

   The service delivered by M-Pesa is a banking service including payment and lending for unbanked people and enables them to receive goods and services from their mobile phones instead of coming to the bank. The system adopts virtual banks in conducting transaction services using SIM cards. The SIM card inserted then enabled the user to make payment and transfer money through the short message service (SMS). The service also brings economic value to small enterprises where the fintech is partnered with a local kiosk or outlet across the country. This way, the user with no bank account can bring the physical fiat money to the kiosk and be assisted in transferring the amount in digital form. It is not only limited to transferring money, but M-Pesa can also be used to pay bills, deposits, and more. Prior to the introduction of M-Pesa, people would deliver money through buses, friends, or post office. The bus driver will pick up the money or packages and promise to deliver them to a particular destination. With mobile money being implemented, small business owners, especially those living in rural areas, could access financial services safely through mobile phones and a more effective way to conduct transactions without carrying large amounts of cash.

   M-Pesa fintech project is considered a caterer for sustainable entrepreneurship since it serves a national level of economic benefits by eradicating poverty. Beyond practicality and advancement in technological use personally, M-Pesa has created a significant social and economic impact. Financial inclusion has affected economic activity by increasing access to funds and influencing saving behavior (Mbiti & Weil, 2015). M-Pesa has set a successful example in fintech collaboration to attain sustainable entrepreneurship by understanding the local context of society and becoming early adapters. The value proposition of fintech implementation is also

becoming an essential factor in bringing the success of the infrastructure (Ngugi et al., 2010). The indirect impact of the adoption of M-Pesa has also brought women empowerment (Van Hove & Dubus, 2019). It enables women to participate in business and entrepreneurial activities. Following the success of adoption in Kenya, M-Pesa has been adopted in seven other countries in Africa.

2) **Gojek in Indonesia:** A ride-hailing fintech startup company expands the business to a payment financial technology service named Gopay. The company brought a traditional local idea of motorcycle ride service, which has been done in an informal way where usually the driver will sit somewhere waiting for a customer passing by and demand the service, or the driver will drive around to catch the customer. This has been a means of living for many informal sectors in Indonesia. The income cannot be maximized as the location and demand cannot be predicted. On the other hand, from the customer's perspective, the traditional way to get a driver is also difficult as they do not know the location of the driver, and there is no formal database of driver contact. Overcoming this local issue with technology algorithms, Gojek has empowered 2.6 million drivers in Indonesia and created new jobs all over the country.

   The technology created a platform for drivers and consumers to meet in one application equipped with a payment option, Gopay. The fintech company has made the cashless payment and brought appetite to the market, elevating sales, promoting local business, and creating millions of job opportunities that can be accessed throughout the country. The platform then extended to offer food delivery service, which undeniably brought intensive impact to the small local businesses. Currently, there are more than 900 thousand, 96% coming from micro-small-medium enterprises vendors (Gojek, 2020). Quantitative measurement showed the impact of growing sales after the local businesses and small restaurants registered themselves in the application. Nevertheless, the economic contribution to the country reaches more than 700 million USD every year and reduces employment numbers. Sustainability entrepreneurship has been adopted by Gojek through financial technology capital to eradicate poverty and bring economic distribution and equality as well as financial inclusivity in Indonesia.

   Another fintech service from Gojek called GoModal provide small working capital loan for small business to run the daily cash flow and generate operation capital. The fintech company has taken a socio-economic development goal as its value. Sustainable entrepreneurship is created by bringing economic equality by creating jobs for every background that can be accessible from any location throughout the country, increasing the well-being of conventional motorcycle driver's income by setting pricing standards and safety bars, and nurturing entrepreneurs through financing and promoting

small businesses from the app, and environmental protection through monitoring emissions from business operations.

3) **GreenCrowd in Ireland:** A fintech crowdfunding business model started in Ireland. The startups already impacted sustainable entrepreneurship by creating a peer-to-peer fundraising model. GreenCrowd caters to a mission to be the platform for investors and project managers to participate in different kinds of sustainable entrepreneurial projects and help build a green economy.

An investor can choose among many options of business models that need funding and has proposed and pitched their idea. Small businesses can seek investors In the platform and raise capital. Crowdfunding, as one of the fintech manifestations, provide alternative funding option for project and business through a contribution from a large number of investors. The mechanism varied from shares or interest return depending on the agreement with investors at the beginning of the contract. The technology built has enabled investors interested in sustainable investment to meet with sustainable project owners on the platform.

The crowdfunding fintech business model has raised its popularity in this decade. However, GreenCrowd has a specific target by becoming a platform that is selective in campaigning green projects. Therefore, a specific market niche of investor who has motifs of investing while also helping the environment and giving back to society. One of many successful funding projects is the PV solar project in Ireland in 2022, done by the Renewable Electricity Support Scheme. With a target of installing solar to power 1.2 million Irish households, the project aims to reduce greenhouse gas emissions. This shows a direct impact on one kind of financial technology instrument when powering sustainable entrepreneurship projects.

6. Future Outlook of Fintech on Sustainable Entrepreneurship

In the future, fintech is expected to replace the conventional role of the formal institution and ease the transaction more effectively since it combines financial service and technology and changes the conventional business model to moderate (Darma et al., 2020). Fintech will cater to a broader market niche for business by providing tools for payment, funding, and investment options. The growth of fintech worldwide should bring a closer gap in wealth inequality or even close the gap. Technology should conquer physical borders, thus enabling global collaboration instead of tightening up the competition by upbringing technological war.

The continuous growth is expected to rise due to investor interest in the development of fintech startups. With this appetite, it is a gold opportunity to inject sustainability mission in the expression of various fintech instruments. Financial inclusivity will elevate small and medium enterprises in rural areas and improve socio-economic impact and life well-being. Peer-to-peer lending, crowdfunding, and digital lending bridge the gap of capital access by widening the option of loans available for sustainable entrepreneurship projects.

There is a relationship between financial literacy and fintech adoption. Fintech adoption is expected to raise its level in the future since the financial literacy program is being educated globally. The adoption of fintech in entrepreneurship will be characterized by the utilization and record of significant data usage. The more comprehensive data recorded will bring benefits in the future by giving creditworthiness evaluations for entrepreneurs (Nugraha et al., 2022). Therefore, financing various projects, especially sustainable entrepreneurship, can be more customized and effective in reaching target aims.

The future of fintech will also be looked up as a leader of green tech. The collaboration between fintech and sustainable entrepreneurship projects could create sustainable fintech with the combination of technology, finance, and climate awareness. In sustainable entrepreneurial projects, including climate and environmental concerns, digital banking could use automation to track carbon footprint based on transaction data and promote environmental consciousness. Wealth management and investment platforms can also offer portfolios for environmental-focused investment. A new instrument can also be expected to be found in the future as the technology is customized in various forms, fulfilling the aggregate.

Initiative and government involvement in policy and regulatory sandbox is needed for fintech to develop an ecosystem and incentives to nurture a sustainable digital financial sector that focuses beyond profit (Batunanggar, 2019). With the establishment of regulation and fintech continuous penetration, it is predicted that fintech will grow even more significantly in an emerging market since the current focus is on the small entrepreneur who gained the most benefit from a funding perspective.

7. Key Takeaway Points

Sustainable entrepreneurship refers to creating and developing a business model beyond profit generation, rather with consideration to improving quality of life through social and environmental impact. The significance of sustainable entrepreneurship consists of three fundamental pillars taken into account: environmental, economic, and social. The environmental sustainability aspect aims to provide green economic activities where the incentives are driven toward improving environmental decarbonization. Economic sustainability focuses on creating financial inclusion and equal access to wealth distribution through different instruments. Social sustainability focuses on improving the well-being of livelihood for everyone.

Financial technology encompasses the escalating advancement of technology to support various instruments of financial activity and level up the way of financial conduct in a more effective way. Financial technology has become one of the major drives in creating sustainable entrepreneurship succession. The role of financial technology in manifesting sustainable entrepreneurship can be seen through several actions, such as facilitating capital access to small businesses and leveraging the

operation to bring higher inclusivity, supporting investing with inclusion and accessibility at a broader element, providing sustainable financial services, encouraging financial inclusion, delivering data-driven insights, and improving supply chain transparency. These innovations help to build a more sustainable and socially responsible business ecosystem.

The impact of financial technology can already be seen all around the world. Payment and banking services brought financial inclusivity to underbanked society. Data analytics, artificial intelligence, and blockchain helped financial technology evaluate environmental impact to channel sustainable environmental, social, and governance. The power of data analytics and distributed ledger technologies as important elements of financial technology also enable stakeholders to analyze different risks of climate change and understand sustainability using big data. Robo advisor helped entrepreneurs calculate their carbon footprint and supply chain traceability. Financial technology also accelerates the distribution of wealth to small businesses as well as any entrepreneurial activity with green program selective measurement.

The future of fintech is expected to grow in a more significant way and bring a more inclusive impact. Business players and stakeholders must be aware of the potential of digitalization and development gaps. Since financial technology is agile and aggressive in growth with extensive use of technology, the concern of unequal access and distribution needs to be addressed. The technology should bring together collaboration from different potentials and reach the underserved population instead of widening the gap in literacy and access to the economy. The advancement of technology should be utilized in reaching more sustainable entrepreneurship.

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6 VALUE CREATION IN SUSTAINABILITY ENTERPRENEURSHIP FROM TRANSFER PRICING PERSPECTIVE

Nurlita Sukma Alfandia

Abstract

Value creation refers to the process of generating additional value or benefits through various activities, initiatives, or investments. It involves taking resources and transforming them into something of greater worth, whether it's in the form of financial returns, improved products or services, enhanced customer experiences, positive societal impact, or other desirable outcomes. Value creation can occur at different levels, including individual, organizational, and societal levels. In sustainability entrepreneurship, value creation extends beyond financial profitability to include a range of environmental and social benefits. Not only financial gains but also environmental stewardship, social well-being, innovation, stakeholder collaboration, and brand reputation. By addressing pressing global challenges and pursuing sustainable practices, entrepreneurs can generate positive impacts that extend beyond monetary returns and contribute to a more sustainable and equitable future. Value creation in transfer pricing involves assessing the functions, assets, and risks undertaken by entities within an MNE and allocating profits accordingly and requires careful analysis of comparables, intangibles, market conditions, and the documentation of value creation contributions to ensure compliance with transfer pricing regulations. Transfer pricing rules may restrict an organization's capacity for innovation and creativity, which may jeopardise its viability. The purpose of transfer pricing regulations and standards is to make sure that profits are shared in a way that takes into account the economic substance of transactions as well as the value produced by sustainability efforts.

Keyword: *Value Creation, Sustainability Enterpreneurship, Transfer Pricing, Innovation, Environment*

N. S. Alfandia
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
http://doi.org/10.11594/futscipress16

INTRODUCTION

International barriers between nations have vanished as a result of globalization. This transition is characterized by a global organizational management paradigm and an integrated supply chain that concentrates numerous functions at the regional or global level. Reduced trade barriers, the freedom of capital and labor migration, the shifting of manufacturing from high to low-cost locations, and improvements in technology and information are just a few factors that have substantially impacted cross-jurisdictional transaction activity. Both the market for products and the market for human resources are included in international trade. Businesses that formerly solely operated on a national level have extended to other countries.

The primary objective of starting a multinational firm is often to increase income and minimize unanticipated costs or expenses. *Transfer pricing* is a tool that multinational firms use to accomplish this. Transfer pricing strategies respond to changes in how value is assigned that are essential for increasing private profits, and by dodging public taxes, they increase relative social deprivation (Sikka & Willmott, 2010). Those with subsidiaries (or branches) abroad are referred to as multinational enterprises (MNEs) or multinational corporations (MNCs). Corporate consolidation significantly slows decision-making, which also makes management difficult on a global scale. Decentralizing managerial responsibilities is necessary due to the consolidation, particularly by reassigning some of them to lower levels of the organizational structure. In these conditions, a corporation can only be successful by depending on a flexible but highly controlled internal process based on a system of intracompany settlements at what is known as transfer pricing (Solovyova, 2019). In its broadest sense, transfer pricing relates to figuring out a cost for the mutual settlement of accounts between organizational units of the same company.

There is agreement in the research that MNEs have an incentive to manipulate transfer pricing even though it is an acceptable accounting practice (Asongu, 2016; Asongu et al., 2019). Doing so will reduce their tax obligations and increase group profits. MNEs can need to cut costs in order to maximize their profits. Companies in a group have an interest in the group's profitability, not that of its subsidiaries. Therefore, they are free to set any prices for their internal transactions.

MNEs must maintain up-to-date documents supporting transfer pricing practices and demonstrate how profits are allocated following the arm's-length principle to pay compliance tax. The arm's length idea, the guiding principle for transfer pricing (Choi et al., 2021), argues that the prices or terms of intercompany transactions should be identical to what would be agreed upon between unrelated parties in analogous circumstances. The goal is to guarantee that taxing authorities receive their share of taxable revenue and that profits are allocated fairly. Transfer pricing primarily focuses on transactions between related entities, such as a parent company and its subsidiaries or entities under common ownership. These related entities may be based in different countries, each with its own tax regulations. One of

the transactions between these enterprises that complies with local laws and accounting standards is the financial use of intellectual property that is legally part of a group of businesses or hotels that the offices and hotels of the parent firm oversee (Flaaen, 2017).

The erosion of the profit base and moving earnings from nations with high to low tax rates, more commonly referred to as Base Erosion and Profit moving (BEPS), are crucial issues in transfer pricing. The Anti-BEPS Project's main areas of attention are profit shifting and tax base erosion. Additionally, the digital economy enables international corporations to operate without a physical presence in a particular state. Multinational corporations may engage in linked transactions (with related parties) for various justifiable reasons. However, the state could suffer from this transfer pricing practice. Multinational firms, for instance, could create meaningless connected transactions to reduce the applicable effective tax rate (Special Purpose Vehicle). Tax authorities worldwide are working to tighten transfer pricing regulations to stop BEPS practices. The Anti-BEPS Project is one of the OECD's initiatives to combat BEPS practices. Actions 8 through 10 in the final report are titled "Aligning Transfer Pricing Outcomes with Value Creation." By taking these steps, the OECD hopes to ensure that output transfer pricing is consistent with value creation.

A previous study has examined the incorporation of sustainability into corporate strategies by small to medium-sized firms (SMEs) in Italy and the impact these plans have on intangible assets. Recently, corporate behavior has become more pertinent to sustainable development. Companies interested in creating value and adopting voluntary socio-environmental criteria favor value chains built on transparency, stakeholder engagement, and safety (Ciasullo & Troisi, 2013). In international corporations, this behavior is also present. By transferring expenses and revenues to subsidiaries in countries with lower tax rates, MNEs profit from value creation. The idea of value creation and how it relates to sustainable entrepreneurship will be covered in this chapter. The idea of value creation in sustainable entrepreneurship will also be covered from the standpoint of transfer pricing.

Discussion

1. Value creation

The business models of multinational organizations are subject to change due to globalization and technological improvements. Value is created by managing and developing business models (Freudenreich et al., 2020). grasp inter-firm competition and performance gaps requires a thorough grasp of how organizations produce value. Technology innovation has resulted from technological advancements for increasing product and operational efficiency (Ravasi et al., 2012). A business's strategic plan is called value creation from an entrepreneurial standpoint.

Value typically discusses a good or service's worth, importance, or utility. Because value is one of the four essential elements of a business model, along with

product, place, price, and promotion, it plays a crucial role in developing new enterprises. Due to the dependence of each on underlying value (promotion, pricing, and product), value plays a role in marketing and promotion. Value creation is the process of changing labor and resources into something that meets the requirements of others. The organization of how management creates value for shareholders, as well as successful operation and realization of the organization of the value of the primary process, is referred to as value creation (Zeng, 2012). Value creation is facilitated by a company's expertise, scale, and innovative emphasis (Shakina & Molodchik, 2013). Value chain refers to the procedure or activities by which a business adds value to a good or service, including production, marketing, and after-sales service (United Nations, 2021).

A company's goal is to promote creation principles. Values can be quantified by profits, cash flows, stock prices, or strategic goals that allow a company to function. Value creation for customers aids in the sale of goods and services, value creation for employees leads to increased productivity, and value creation for shareholders results in a rise in stock price and a future assurance of investment capital (Hans, 2023). The company's actions are meant to produce and deliver value effectively to generate profits once costs are deducted (Solovyova, 2019). Value is typically used to describe the critical, worthwhile, or valuable qualities of an object chosen by people who want to use it. Businesses often focus on creating a good or service, increasing demand, and making a profit.

Value creation is essential for keeping a profitable and long-lasting business. Once it has been appropriated, the value produced by actions like launching a new product, a new technology, or a new way of conducting business may be challenging or impossible to assess (Gregorio, 2013). Social responsibility, environmental preservation, and economic development are examples of values (Urbaniec, 2018). Utilizing new equipment in a convective company's cutting department is an illustration of value creation. Using machines to manage agricultural goods in the agricultural industry reduces labor requirements and speeds up the harvesting process.

A company must have a solid strategy for conducting business. Thanks to the business strategy, they can create products that consumers desire to buy. Additionally, it increases the productivity of the company's employees and the business's value for those who buy stock in it. Everyone can increase their earnings if the business produces goods that benefit its clients. When determining why value is created, whom it is created for, how it is measured throughout time, and what factors are weighted in the measurement should all be considered (Sadovska et al., 2020).

A corporation is said to have produced value when it generates a return on investment more significant than the capital invested. Creating goods and services that customers continually find helpful is what is meant by adding value for the customer. In other words, customer value is the perception of a product or service's

actual value in the eyes of the consumer. It reflects how consumers believe they received value or benefited from their purchase. The customer is paying for non-price value in addition to economic value. The benefits or quality of the product, service, reputation, and company brand are all factors that contribute to the economic worth of the good or service.

In today's environment, value creation can be based on the product, the innovation process, and the comprehension of consumer wants, and they can achieve it quickly by comprehending the tasks to be accomplished. According to previous research, innovation is a helpful instrument for generating value and maintaining competitive advantages (Halpern, 2010; Srinivas & Krishna, 2009). By giving markets new meaning, innovation influences how sectors will develop. Innovation can increase an organization's efficiency, profitability, competitiveness, sustainable development, and managerial and operational capacities (Klimas, 2014; Kurt et al., 2013; Mousavi & Bossink, 2017). In order to maintain a competitive edge and protect strategic positions, innovation is an essential activity that involves updating the organization's offerings and how it produces and delivers goods and services.

The OECD classifies value creation in business into three concepts. The first concept is the value chain. This concept was introduced in 1985 by Michael Porter. The value chain refers to the entire process of converting raw materials into ready-to-sell products. This first concept is suitable for explaining value creation in the production process. The second concept is the value network. This concept refers to intermediaries who create linkages between suppliers and customers. For example, companies that channel employers with job seekers, such as the Jobstreet website. The third concept is a value shop. This concept refers to a business that stores hardware and software for use on customer demand. Value shops are designed to meet specific customer requests or solve specific problems—for example, website-based technology intended to market certain digital products in a country (OECD, 2018).

Multinational companies often use these concepts to avoid taxes—for example, value chains. Multinational companies set up subsidiaries in other countries to perform only one function, for example, only the production function. Based on the OECD's explanation, the concept of value creation is a value chain that refers to the entire production process until the product is ready for sale and reaches consumers. Likewise, with the value network, when a multinational company acts as an intermediary to carry out a distribution function (if referring to a manufacturing company), there is value created from the transaction. Value shops often occur in the field. Google's case in Indonesia can be an example of creating shop values. Physically, Google has no physical substance in Indonesia. The physical substance or technology used is located in Singapore.

2. Sustainability Entrepreneurship and Value Creation

Today's problems with the environment, the economic divide, and unequal access to opportunities and resources are worsening. These concerns have increased the demand for sustainable entrepreneurship, characterized by eco-friendly business practices. The transition to a more sustainable future, where entrepreneurship is crucial, involves balancing the social, economic, and ecological goals (Alberico et al., 2022). Businesses must balance their business, social, and environmental effects to be productive and competitive—Sustainable Business Practices Act (Schaltegger & Wagner, 2011). Finding, developing, and using economic opportunities that benefit local communities in terms of social and environmental advantages are necessary to improve sustainability (Muñoz & Cohen, 2018).

Sustainability is a multifaceted idea that encompasses social justice, economic progress, and environmental preservation. This shift encourages business owners to release fresh goods and services developed from sustainability to preserve the environment and communities (Jayaratne et al., 2019). A personal reorientation of the entrepreneur and new practices to implement change are characteristics of sustainable entrepreneurs who integrate and blend institutional logic through many business model transitions (Gregori et al., 2019). Additionally, sustainable entrepreneurship aims to protect the environment, human life support systems, and local communities while pursuing possibilities to profit from future products, processes, and services (Shepherd & Patzelt, 2011).

Value creation in sustainability entrepreneurship includes a variety of environmental and social advantages in addition to financial viability (Ciasullo & Troisi, 2013; Sołoducho-Pelc, 2020). Entrepreneurs in sustainability create novel goods, methods, and services derived from sustainability for profit (Jayaratne et al., 2019). Entrepreneurship with a social, environmental, or sustainable focus changes society by adding value that goes beyond financial benefit (Schaefer et al., 2015). With a focus on the welfare of future generations, sustainable entrepreneurship aspires to produce economic, social, and environmental values.

In addition to financial profitability, value creation involves social and environmental advantages, innovation, stakeholder cooperation, and brand reputation. Customers, investors, employees, suppliers, and other stakeholders contribute to a company's value (Hans, 2023). When discussing sustainable entrepreneurship, the term "value creation" refers to developing economic, social, and environmental values with an emphasis on the welfare of future generations. One of the fundamental characteristics of sustainable entrepreneurship is the generation of new values and innovation. Businesses that incorporate environmental and social factors are regarded as creative because they aim to positively impact society and the environment and be profitable by satisfying specific requirements. Therefore, the production of economic and non-economic

value for people, the economy, and society is intimately tied to sustainable entrepreneurship (Urbaniec, 2018).

By addressing pressing global challenges and using sustainable business practices, entrepreneurs can have an impact beyond monetary benefit. They can also contribute to developing a more just and sustainable future. Sustainable entrepreneurship is becoming more and more critical since it can lead to a society that is socially, economically, and environmentally sustainable (Aghelie et al., 2016). Entrepreneurs that practice sustainability seek to benefit not just themselves but also people in their communities and the environment. They incorporate economic, social, and environmental values into business strategies and operations. By balancing the effects of corporate, social, and environmental actions while creating value for all stakeholders, sustainable entrepreneurship aims to achieve efficiency and competitiveness (Alberico et al., 2022).

3. Transfer Pricing Perspective

Because of globalization, a corporation may have subsidiaries or engage in business with linked parties in various nations. Companies conducting business worldwide must use transfer pricing to set prices for products or services offered to different organizational units of the same corporation to increase profits. Transfer pricing is the practice of businesses that consciously avoid paying transfer costs of up to 50% for international transactions, which frequently occur in multinational corporations (Rugman, Alan M. and Eden, 2017). Losses occur from this situation for the nation where the multinational corporation is based.

Value creation is one of the ideas that are most frequently discussed in the context of post-BEPS international taxation. In order to align transfer pricing outcomes with value creation, the OECD launched the BEPS project in 2013. This initiative stipulates that earnings must be taxed in the nation where economic activity is conducted and value is generated. These goals will be achieved thanks to the BEPS initiative. When multinational corporations use affiliates or subsidiaries in nations with various tax laws, it can be challenging to determine how value creation is being applied, particularly in the case of intangible assets. The OECD recognized that, at the time, technical advancements and changes in business models had prevented the application of international tax rules for BEPS practices. For instance, they transferred intangible assets to countries with low tax rates or no taxation with a valuation lower than the assets' actual value (OECD, 2013).

It is critical to consider how to distribute profits when businesses collaborate. Transfer pricing regulations ensure everyone receives a fair share depending on their contributions. Value creation in transfer pricing refers to the actions and contributions made by various entities within a multinational enterprise (MNE) that result in the growth of profits. Creating goods or services can benefit from various activities, including research and development, production, marketing,

sales, and distribution. According to the OECD Guidelines, the notion of development, enhancement, maintenance, protection, and exploitation (DEMPE) contributions made by the members of the multinational group is the foundation for value generation for intangible assets (Hahn et al., 2021).

Value generation has been mentioned explicitly in many BEPS measures. When the OECD released the BEPS Action Plan in 2013, the phrase "value creation" to transfer pricing first appeared. The Anti-BEPS project essentially entails attempts to prevent the transfer of earnings from countries with high tax rates to those with low or even no taxes. The goal of the OECD suggests a tax structure where profits are distributed among the participating jurisdictions (Richter, 2021). The OECD needs to go to better lengths to define value creation. Through the BEPS Action, the OECD wants to guarantee that transfer pricing outputs are commensurate with value creation (OECD, 2015). The concept of value creation in transfer pricing is inextricably linked to two factors. First, the development of the behavior and commercial strategies of multinational organizations. Second, the transfer pricing laws and practices of various nations.

A multinational business (MNE)'s economic contributions and activities connected to sustainable practices are considered when creating value from a transfer pricing perspective (Lee et al., 2023). Transfer pricing rules and standards are in place to ensure that profits are allocated to reflect the economic substance of transactions and the value produced by sustainability efforts. Transfer pricing requires assessing the responsibilities, assets, and risks organizations assume within an MNE and appropriately allocating profits. A comprehensive examination of comparables, intangibles, market conditions, and the verification of value-creation contributions is necessary to ensure compliance with transfer pricing requirements.

Value chain analysis can be used to evaluate how well multinational corporations are performing. Businesses might evaluate the value chain to determine the tasks they can execute. Meanwhile, subsidiaries can be given power over tasks they do not have. The phrase "value driver" is used in value chain analysis. Companies must recognize the entities that engage in activities that have the potential to provide value drivers and entity contributions. For instance, a parent business in nation A might be the product's patent holder but need help to handle production. Due to their proximity to the raw materials and ownership of facilities, subsidiaries in Nation B carry out manufacturing tasks at the parent company's request. The completed goods will be returned to the parent firm in nation A. As a result, the value driver for the parent firm is a brand or patent, whereas the value driver for the subsidiary company is low-cost production.

Since the value chain highlights the essential elements of an organization that produce value and profit, it is crucial for evaluating intragroup pricing. The value analysis entails a look at the roles, resources, and risks of the MNE as a whole and an assessment of the contribution each link in the value creation chain makes to the

overall value produced by the group. Value chain analysis is complicated, particularly for an MNE with intricate risk and function matrices dispersed among numerous legal entities.

The relationship between transfer pricing and sustainable entrepreneurship is based on how transfer pricing policies affect how long a business can run. Transfer pricing regulations may impact a business's capacity for innovation and creativity, which may affect its sustainability (Heryani et al., 2022). High-creativity, innovative businesses are more likely to be long-lasting and to benefit the nation in which they operate. Furthermore, a company's ability to invest in sustainability may be impacted by the tax consequences of its transfer pricing policy. Therefore, it is critical to comprehend international corporations' transfer pricing practices to encourage sustainable entrepreneurship.

Multinational companies must complete transfer pricing documentation, including master files and local files, to comply with tax regulations. By examining fairness and business practice, transfer pricing documents can be used to identify tax avoidance strategies used by multinational corporations (Clarabella & Pranoto, 2021). MNEs should maintain up-to-date records that support their transfer pricing practices and demonstrate how earnings are distributed according to the arm's length principle. MNEs need to keep up-to-date records of their financial contributions, risks, investments, and other vital data relating to their sustainability efforts. Along with providing a clear foundation for sharing earnings, this documentation should adhere to transfer pricing regulations. Proper documentation is necessary to show the advantages that a sustainability business offers. Due to its potential to create a socially, economically, and environmentally sustainable society, sustainable entrepreneurship is becoming increasingly popular in response to the challenges of reducing the harmful impacts on the environment and society created by current unsustainable business practices. Businesses can maintain themselves financially while also addressing social and environmental challenges. Innovation is thought to be necessary in the search for novel methods of environmental sustainability (Aghelie et al., 2016).

CONCLUSION

Value is a word that is usually used to describe the vital, useful, or desirable qualities of a thing that its intended users have decided to employ. It is crucial to the development of new firms. Businesses usually focus on creating a good or service, increasing demand, and making a profit. The concept of "value creation" refers to sustainable business practices that prioritize the welfare of future generations while still generating economic, social, and environmental benefits. Two essential components of sustainable enterprise are innovation and the creation of new values. Businesses that consider social and environmental factors are viewed as innovative because they seek to have a positive influence on society and the environment, as well as make money by adhering to standards. When multinational corporations utilize

affiliates or subsidiaries in nations with various tax laws, especially when it comes to intangible assets, it can be difficult to determine how value generation is being utilized. Profit distribution must be taken into account when businesses collaborate.

From the standpoint of transfer pricing, value creation in sustainability entrepreneurship entails taking into account the financial contributions and operations associated with sustainable practices within a multinational organization (MNE). In order to ensure compliance with transfer pricing regulations, value creation in transfer pricing entails evaluating the tasks, resources, and risks taken on by entities within an MNE and allocating profits accordingly. This process calls for a careful analysis of comparables, intangibles, market conditions, and the documentation of value-creation contributions. The idea of value creation serves as the foundation for allocating profits across participating jurisdictions in an effort to combat tax evasion. The relationship between transfer pricing and sustainable entrepreneurship is based on the fact that the application of transfer pricing laws affects how long a company can last. Transfer pricing rules may restrict an organization's capacity for innovation and creativity, which may jeopardise its viability. The purpose of transfer pricing regulations and standards is to make sure that profits are shared in a way that takes into account the economic substance of transactions as well as the value produced by sustainability efforts.

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7 THE TAX DILEMMA OF ROBOTS, ARTIFICIAL INTELLIGENCE, AND AUTOMATION: A CATALYST OR BARRIER FOR SUSTAINABLE ENTREPRENEURSHIP?

Priandhita Sukowidyanti Asmoro

Abstract

This comprehensive analysis delves into the intricate relationship between digitalization, sustainability, and taxation in the context of sustainable entrepreneurship. The research recognizes the transformative potential of digital technologies in addressing environmental and social challenges through entrepreneurial action. It distinguishes digitalization from digitization and digital transformation, highlighting their distinct focuses on technology adoption, performance improvement, and business model changes. It acknowledges the entwined nature of digital and sustainability strategies and the need for a holistic approach. It recognizes the coexistence of economic, social, and environmental values in sustainable development, contrasting this with digitalization's emphasis on efficiency and competitive advantage. The study emphasizes the urgency of aligning digitalization and sustainability, especially in the realm of sustainable entrepreneurship. It highlights digitalization's potential environmental and social costs, such as electronic waste, energy consumption, job displacement, and social detachment. These negative externalities necessitate careful consideration and mitigation. The proposal to use taxation to address these challenges is introduced, focusing on Value Added Tax (VAT) as a practical and adaptable option. VAT's neutrality principle is highlighted to promote economic choices aligned with sustainability objectives. The discussion also touches upon the importance of earmarked taxes to incentivize sustainability efforts, with a call for transparency and traceability in tax revenue allocation.

Keywords: *Sustainable Entrepreneurship, VAT, Robotics, Artificial intelligence, Automation, Negative Externalities*

P. S. Asmoro
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

Research on sustainable entrepreneurship is increasingly recognizing the transformative potential role of digital technologies for mitigating major environmental and social challenges through entrepreneurial action. Digitalization is adopting or increasing the use of digital or computer technology by an organization, industry, country, etc (Brennen & Kreiss, 2016). The aforementioned description is employed by Brennen & Kreiss (2016) in order to differentiate it from digitization. This term pertains to the material process of transforming analog data streams into digital bits. Westerman et al. (2011) define digitalization as the fundamental introduction of technology to improve performance or expand a company's reach.

Meanwhile, Morakanyane et al. (2017), Clohessy et al. (2017), Hess et al. (2016), and Piccinini et al. (2015) stated that Digital transformation is concerned with the changes in digital technologies can bring about a company's business model, which results in changed products or organizational structures or the automation of processes. Digital transformation also describes triggering tactical or strategic business moves by data-driven insights and the launch of digital business models that allow new ways to capture value (Horlach et al., 2017; Haffke et al., 2016). Thus, there are three characteristics attached to digitalization from a business perspective. The first is related to process, namely the use of digital technologies to change a business model. The second refers to the objectives: improving customer experience, providing new revenue, producing value opportunities, and increasing operational efficiency. The third relates to media through combinations of information, computing, communication, and connectivity technologies (Vial, 2021).

In recent years, several researchers have begun to propose the involvement of digital technologies such as platforms, the Internet of Things (IoT), artificial intelligence (AI), Virtual Reality (VR), Blockchain, or Big Data Analytics to address environmental and social issues (Lyu et al., 2023; Papagiannidis & Marikyan, 2022; Spulbar et al., 2022; Dwivedi et al., 2022). With the same view, Aksin-Sivrikaya & Bhattacharya (2017) stated that digital and sustainability strategies will become integral parts of corporate strategy in the digital era. The two concepts are entangled, interdependent, and intertwined (Karki & Thapa, 2021). Consequently, employing a dualistic framework to examine these concepts will yield an inadequate portrayal, result in contradictory objectives, and lead to conflicting goals. If we compare it, sustainable development looks into the coexistence of economic, social, and environmental spheres (Raworth, 2017). In other words, sustainable development puts aside profits and focuses more on economic values embedded in social and environmental values. This is in line with the now classic modern definition of sustainable development contained in the report entitled Our Common Future in 1987 namely, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Scoones, 2007). Meanwhile, digitalization looks into the connectivity and automation of the organizational process (Vial, 2021), focusing on efficiency and competitive advantage, leading to increased profits.

The urgency to see digitalization and sustainability in one unit is getting stronger with the increasing popularity of sustainable entrepreneurship. Sustainable entrepreneurship, characterized by ventures that seek to generate economic value and positive environmental and social impacts, is intrinsically tied to responsible resource utilization and long-term viability. On the other hand, digitalization encompasses integrating digital technologies into various facets of business operations and decision-making processes. This integration goes beyond mere technological adoption; it signifies a profound shift in how businesses operate, connect, and innovate. At the crux of the convergence lies the potential for enhanced resource efficiency and transparency. Digital transformation equips sustainable entrepreneurs with many tools and platforms to monitor, analyze, and optimize their resource consumption. For instance, the Internet of Things (IoT) enables real-time energy consumption and waste generation monitoring, allowing businesses to identify inefficiencies promptly. This IoT integration with sustainability objectives minimizes environmental footprints and underscores the economic significance of reduced resource usage.

Even though digitalization and sustainability are both effective strategies for maximizing the potential of sustainable entrepreneurs, the combination of the concepts of sustainability and sustainability has sparked debate among researchers (Holzmann & Gregori, 2023; Pan et al., 2022; Bordot, 2022; Yoo & Yi, 2022; Nishant et al., 2020; Ford 2013). They state that there is a complex interaction between digitalization and sustainability. Instead of producing resource efficiency and fostering innovation in sustainable business practices, pursuing digital transformation for sustainability can also give rise to certain challenges and threats to the environment and social well-being that warrant careful consideration.

The dependency on technology and digital infrastructure may inadvertently lead to an exponential growth of electronic devices and their subsequent disposal, leading to the generation of electronic waste (e-waste). This is contrary to the sustainability goals that are being pursued. The proliferation of platforms, IoT devices, and electronic gadgets is driving an increase in e-waste generation, which often contains hazardous substances such as lead, mercury, and brominated flame retardants. Improper disposal and inadequate recycling of e-waste result in the contamination of soil and water resources and pose health risks to those handling these materials, particularly in developing regions where lax regulations prevail. Moreover, the energy demands of digital technologies cannot be underestimated. Data centers that power platforms and AI algorithms require significant electricity, often derived from non-renewable sources, contributing to carbon emissions and climate change. The energy-intensive nature of blockchain, particularly in proof-of-work mechanisms, has been critiqued for its environmental impact, as it requires immense computational power. This escalates energy consumption and exacerbates competition for limited energy resources, potentially escalating societal inequities in resource distribution.

In the context of social conditions, digitalization's impacts are multifaceted. While AI and automation enhance efficiency, they also challenge the labor market. Routine tasks susceptible to automation may lead to job displacement, particularly in sectors where

technology can easily replicate human tasks. This disruption can disproportionately affect low-skilled workers, potentially widening the income inequality gap. Consequently, upskilling and reskilling initiatives are imperative to mitigate the adverse social consequences of job displacement. Virtual Reality, although offering immersive experiences, can inadvertently isolate individuals from physical interactions, leading to potential social detachment. The prevalence of virtual interactions over real-world engagements may hinder the development of essential interpersonal skills, exacerbating feelings of loneliness and isolation. Striking a balance between the benefits of VR and maintaining genuine human connections is crucial for fostering a healthy social environment.

Furthermore, privacy and data security issues arise as platforms and IoT devices collect vast amounts of personal data. The potential misuse of this data has raised concerns about breaches of privacy, leading to discrimination and manipulation of user behavior. The ethical use of AI algorithms, particularly in decision-making processes, becomes paramount to avoid perpetuating biases and exacerbating societal inequalities. Blockchain technology, while lauded for its potential to enhance transparency and accountability, faces challenges related to digital inclusion. The decentralized nature of blockchain networks may inadvertently exclude marginalized communities with limited access to technology and the internet. This could deepen existing disparities, inhibiting the technology's equitable benefits.

Therefore, the wide-ranging impacts of digitalization on the environment and social conditions necessitate a comprehensive understanding of its potential negative consequences. The electronic waste crisis, energy consumption, labor market shifts, social detachment, privacy concerns, and digital inclusion issues are interconnected challenges that require deliberate mitigation strategies. Policymakers, technology developers, and society at large must collaborate to ensure that digitalization is harnessed responsibly, minimizing its adverse effects while maximizing its transformative potential. Through thoughtful regulation, ethical considerations, and a commitment to equitable access, the negative impacts of digitalization can be mitigated, allowing society to reap the benefits without compromising the environment and social well-being.

This study proposes taxation as a potential remedy to address the intricate interplay between digitalization and sustainability in the context of sustainable entrepreneurship practices. The researchers observe that, in the context of developing countries, governmental intervention remains notably extensive. It is noteworthy that while government involvement is substantial, challenges stemming from suboptimal policy quality and administrative complexities persist. It is imperative to delve into the ramifications of this scenario. High levels of government intervention can exert a dual influence: on the one hand, it can create an environment conducive to fostering sustainable entrepreneurship by providing essential resources and support mechanisms; on the other hand, when coupled with low-quality policies and administrative intricacies, it may lead to inefficiencies, hinder innovation, and impede the agility required for sustainable entrepreneurial growth.

Mapping The Beneficial and Detrimental Effects of Digital Transformation on Sustainable Entrepreneurship

There are three major issues about the proposed taxes on sustainable businesses that use Robots, Artificial Intelligence, and Automation (RAIA). First, is taxation the best strategy? Second, if the application is required, how is tax policy and administration designed in line with the sustainable entrepreneurship business model? Third, how does tax affect the long-term viability of a sustainable entrepreneur's business? Beneficial and detrimental effect mapping facilitates the design of tailored tax policies that align with the varying outcomes of RAIA adoption. An in-depth analysis of profit-generating aspects can inform the determination of tax levels that ensure fair contributions from businesses benefiting from digital transformation. Simultaneously, recognizing harmful consequences enables the incorporation of appropriate tax breaks or incentives to alleviate the burden on sustainable entrepreneurs grappling with challenges.

Additionally, informed mapping empowers effective tax administration. Governments can allocate resources efficiently for tax collection, enforcement, and compliance monitoring by quantifying the gains and losses across sectors. This precision minimizes tax evasion and ensures accurate revenue collection from RAIA-driven businesses. Therefore, this approach gives a hint to policymakers to design tax policies that encourage beneficial outcomes, mitigate negative consequences, and promote overall economic and social welfare.

The adoption of RAIA mutually enhances beneficial outcomes, but there are delicate differences due to the unique characteristics of each entity. On the positive side, adopting robots offers improved efficiency by tackling repetitive and time-consuming tasks, allowing businesses to redirect their human resources towards more strategic endeavors such as innovation and customer engagement (Siderska, 2021; Radke et al., 2020). Moreover, robots contribute to increased productivity through continuous operation, expediting production rates, and benefiting sustainable entrepreneurs seeking to meet demand for eco-friendly products (Pookkuttath et al., 2023; Pagliarini & Lund, 2020; Xie et al., 2018). This surge in productivity further aligns with cost savings, as the gradual reduction of labor costs and operational expenses bolsters profitability. Resource management also sees improvement, as robots meticulously control and monitor resource utilization, minimizing waste and conserving vital resources. In addition, robots ensure workplace safety by undertaking hazardous tasks, promoting employee well-being, and aligning with sustainable practices. Their precision and consistency in executing tasks, especially in manufacturing, result in higher product quality and customer satisfaction, thus maintaining a reputation for sustainability and excellence.

Meanwhile, AI's ability for predictive analysis stands out, as it can decipher intricate data patterns to make accurate predictions, thereby aiding in efficient resource management and waste reduction (Gupta et al., 2023). The energy efficiency of AI algorithms is noteworthy, optimizing energy usage in both buildings and industrial processes, resulting in substantial energy savings (Ahmad et al., 2023). In environmental monitoring, AI-powered sensors and devices play a pivotal role, continuously overseeing ecosystems and promptly detecting

changes, enabling swift responses to environmental threats. Moreover, AI-driven customization emerges as a boon, tailoring products and services to individual needs, curbing resource consumption, and enhancing consumer satisfaction. The acceleration of innovation through AI cannot be ignored; its capacity to navigate vast datasets identifies emerging trends, customer preferences, and market gaps, empowering sustainable entrepreneurs to pioneer innovative, eco-friendly products and maintain a competitive edge. Together, the streamlining of processes through automation can optimize workflows, reduce waste, and enhance overall operational efficiency. Automated systems contribute to quality improvement by consistently delivering high-quality products and services, minimizing defects and waste production. The scalability of operations is another advantage, as automation allows for the efficient expansion of activities without a proportional increase in resource consumption. Moreover, integrating automation significantly reduces human errors in critical processes, leading to fewer accidents and less wastage (Cai et al., 2022; Ryu et al., 2020; Karajovic et al., 2019). Furthermore, the introduction of automation has enabled remote monitoring and control, thus reducing the need for physical presence and mitigating travel-related emissions.

The integration of RAIA has undoubtedly brought about technological advancements that enhance efficiency and optimize various processes across industries. However, alongside these benefits, significant negative consequences need to be considered. One of the foremost concerns is the potential displacement of jobs, particularly affecting low-skilled workers, which could lead to social and economic challenges. This displacement could be more pronounced in industries heavily reliant on manual labor, causing job losses and impacting employment opportunities for the workforce. While there is potential for job transformation rather than outright replacement, the need for employees to adapt to evolving responsibilities and collaborate effectively with AI systems requires substantial investments in training and professional development (Aloisi & De Stefano, 2022; Khuat., 2022; Chigbu, & Nekhwevha, 2021). Another significant concern arises from over-reliance on robotics and automation, potentially contributing to a skills gap among human workers. As critical skills and adaptability might wane due to technological dependence, the nuanced understanding and innovative thinking humans bring to decision-making processes could diminish. This could result in a loss of human expertise and creativity, essential for addressing complex and novel challenges.

Furthermore, ethical considerations emerge, encompassing societal and job market impacts. The equitable distribution of opportunities and resources becomes crucial as some individuals might be disproportionately affected by job displacement due to automation. Beyond job displacement, the adoption of these technologies raises various other challenges. The initial high costs associated with developing and implementing robotic systems create barriers to entry for smaller enterprises and startups (Stentoft et al., 2021; Bărbulescu et al., 2021). This financial barrier could hinder accessibility and limit the adoption of automation, especially for those with limited resources. Additionally, the specialization required to design, operate, and maintain automated systems may exacerbate existing skill gaps within

the workforce. This potential skill gap could impede the smooth integration and utilization of automation technologies, further impacting their effectiveness.

Data privacy also emerges as a significant concern in the context of AI and automation. The extensive data collection and utilization by AI systems raise issues of privacy and security, potentially compromising sensitive user information (Srivastava et al., 2022; Chen et al., 2021; Sachdev, 2020).

Moreover, the potential for bias and unfairness within AI algorithms poses another challenge, as these systems might unintentionally perpetuate societal biases and lead to unjust or discriminatory outcomes in decision-making processes. Energy consumption and environmental impact also come into play. While robots and AI systems enhance efficiency, their energy consumption during operation and manufacturing raises concerns about potential counteractions to emissions reduction efforts. The computational demands of AI systems might lead to heightened energy consumption, potentially negating the energy savings achieved elsewhere. These energy-related concerns present a double-edged sword, as the benefits of optimization must be weighed against the environmental costs.

Tax as Catalyst or Barrier?

The negative impacts of adopting RAIA that have been identified in the previous session have social and environmental costs. Social cost refers to the overall economic burden borne by society due to the implementation of RAIA. This encompasses both private costs incurred by businesses and individuals directly involved in these technologies and the external costs imposed on other stakeholders and the general public. In sustainable entrepreneurship, social costs might include factors like job displacement, changes in working conditions, and potential shifts in income distribution. For example, a sustainable startup in the manufacturing sector adopts automation to improve production efficiency. While this could lead to reduced production costs and increased profitability for the company, it might also result in job losses for workers previously involved in manual tasks. The social cost here encompasses the financial hardships displaced workers face and potential social disruptions in the community.

On the other hand, environmental costs are a subset of social costs, which specifically refer to costs incurred as a result of the negative impact of activities on the environment. This encompasses various consequences, such as increased energy consumption, electronic waste generation, and potential ecological harm. Sustainable entrepreneurs must consider these costs to ensure their initiatives align with environmental preservation and conservation goals. To clarify, consider a sustainable tech startup that deploys AI-powered delivery drones for transporting goods. While this innovation might reduce carbon emissions associated with traditional delivery methods, it could also contribute to electronic waste if the drones are not adequately managed at the end of their lifecycle. The environmental cost includes the need for responsible disposal and recycling methods for the drones' components.

Since social and environmental costs are borne by workers or the community rather than by the company that decides to adopt RAIA, these costs are negative externalities

(Tideman & Plassmann, 2010). The causal relationship between the decision to adopt RAIA made by the company and the negative externalities it generates creates prima facie reasons for the state to intervene by preventing or imposing sanctions on automated actions that give rise to these externalities. Such intervention may take the form of a Pigouvian tax imposed on agents responsible for externalities to mitigate these externalities (Baiardi & Menegatti, 2011; Jiang, 2001). Thus, all technologies that drive waves of technological innovation and disruption have the potential to become taxable objects, which are imposed on sustainable entrepreneurs using RAIA in their business processes.

Nevertheless, there continues to be extended debate among policymakers and researchers regarding the most suitable tax approach for the RAIA. The initial point of contention revolves around classifying the robot as either a tax subject or a tax object.

An object tax would be levied on the possession of a robot, which is a potential measure that might be implemented, wherein the flat-rate tax may either be imposed or contingent upon the specific characteristics of the robot. This approach mirrors the practice observed in certain countries with respect to levying taxes on assets. This course of action, however, confronts a central predicament stemming from its categorization of robots as property, a classification traditionally linked to tangible assets devoid of autonomy or intelligence. This diverges from the fundamental rationale for taxing robots, given their capacity as smart machines that are capable of human replacement. Hence, the proposition advocates for their taxation in a manner akin to humans, as subjects rather than mere objects. In line with this proposition, the responsibility for remitting taxes for using AI or robots would rest upon their respective owners. The imposition of taxes would be applied on fictional salaries or remunerations ascribed to AI or robots, which would be commensurate with the hypothetical earnings that a human worker undertaking similar tasks would have received. This salary calculation necessitates a comprehensive examination of comparable earnings, ensuring a fair representation. The cumulative outcome is a mitigation of the financial shortfall stemming from the loss of revenue, encompassing taxes and social security contributions, due to the pervasive integration of automation. For this paradigm to materialize, it is crucial for legal frameworks to explicitly recognize a connection between the owner and the AI or robot itself, similar to the employer-employee relationship. This may require modifications to existing labor laws, thereby developing a comprehensive framework. When a sustainable entrepreneur replaces a human worker with automation, it will incur an obligation to remit an amount equivalent to a certain number of years worth of payroll taxes for each replaced employee. More importantly, in cases of human-to-machine replacement, a tax commensurate with the income tax payable by the displaced employee would be imposed, highlighting an approach that seeks to ensure a level playing field amid technological advancements.

The second conflict is related to the choice of tax base. The conflict between Outcome-related tax bases and Action-related tax bases in the context of RAIA revolves around their suitability and effectiveness as tax bases for addressing the negative externalities caused by automation. Outcome-related tax bases are based on observable employment outcomes and aim to directly quantify the impact of automation on job displacement. However, challenges

arise in determining whether observed layoffs can be attributed solely to automation, as other factors like business conditions and productivity improvements can also contribute. Similarly, with accusations of electronic waste or carbon footprint due to the widespread adoption of RAIA, it will be challenging to determine the tax base and maximum amount of tax that can be imposed because environmental damage may be caused by other company activities, such as carbon footprints resulting from product distribution. Various tests and criteria might be used to establish a causal relationship, but these approaches risk either overestimating or underestimating the role of automation. On the other hand, Action-related tax bases propose using the intensity or extent of automation as a proxy for its employment-displacing impact. This approach requires defining and quantifying the intensity of automation in terms of measurable units. One potential measure is the value added by automation, reflecting the degree to which tasks are automated compared to being performed by human labor. However, challenges arise in accurately attributing changes in value-added solely to automation, as other factors could also influence these changes, and the value added by automation might not always be interchangeable with human labor value.

Another issue on the agenda pertains to divergent perspectives about the RAIA tax collecting system. When evaluating whether to opt for a self-assessment system or a withholding tax system for this sustainable entrepreneur, several critical factors warrant consideration. A self-assessment tax system entails assigning the responsibility of tax calculation and payment to the taxpayers themselves. In the context of RAIA, this approach might necessitate sustainable entrepreneur to accurately assess their activities and corresponding tax liabilities. This system offers the advantage of adaptability, potentially accommodating these technologies' diverse and evolving nature. Sustainable entrepreneur utilizing this approach would be expected to furnish accurate financial data, which can contribute to a more transparent and informed tax regime. However, the efficacy of this system rests heavily on the willingness and capacity of these sustainable entrepreneur to diligently fulfill their tax obligations, which could be challenging to monitor and enforce. Conversely, a withholding tax system involves the deduction of taxes at the source of income, thereby transferring the responsibility of tax calculation and remittance to an intermediary or withholder. This system offers simplicity in terms of tax collection, as the intermediary becomes responsible for ensuring accurate tax deductions. Additionally, withholding systems could expedite revenue collection, aiding in the timely replenishment of government coffers. However, determining the appropriate withholding rates could pose challenges, particularly due to the dynamic and complex nature of technological advancements in this domain. The decision between the two systems hinges on several considerations:

1. Accuracy and Compliance: A self-assessment system relies on entities' accurate reporting, potentially leading to issues of underreporting or evasion. On the other hand, a withholding system ensures that taxes are collected at the point of income generation.

2. Administrative Complexity: Self-assessment may require sophisticated mechanisms to monitor and audit entities while withholding systems demand robust mechanisms to track transactions subject to taxation.
3. Technological Evolution: Given the rapid pace of technological advancements, a self-assessment system might be better equipped to adapt to the evolving landscape than a potentially rigid withholding system.
4. Equity and Redistribution: The chosen system should align with broader fiscal and societal goals, promoting fairness in tax distribution and socioeconomic equity.
5. Innovation and Growth: A tax system should not stifle technological innovation and economic growth. A self-assessment system might offer more flexibility in this regard.

Design tax policy recommendations for RAIA adoption by sustainable entrepreneurs

Based on the analysis in the preceding section, the author argues that treating RAIAs as "employees" and taxing their "income" can produce bias and complexity in tax administration. In other words, income tax is not the optimal option for RAIA taxation adopted by sustainable entrepreneurs. This is because the responsibility for taxation lies not with the robots themselves but with human individuals or entities that create and oversee them. Robots lack the capacity for property ownership and income generation, and any funds they accrue are inherently attributed to their human creators. If a robot gathers funds, it undertakes this action in representation of its human proprietor and is bound by legal requirements to execute this action under the identity of said human agent. The definition of a taxpayer, as provided by tax authorities in different nations, does not include the inclusion of RAIA. In opposition to AI and automation, the concept of granting robots a distinct legal entity, akin to a corporate corporation responsible for tax payments, has been suggested. However, it is important to note that this proposal does not alter the fundamental analysis of the party responsible for tax payment. To clarify, designating a robot as a person via a legal construct does not change the fundamental need that the funds used to pay taxes must originate from and be under the control of human actors. Hence, the proposed policy innovation of implementing a robot tax may be seen as a taxation measure targeting companies or individuals involved in developing, owning, utilizing, or acquiring advantages derived from robotic technologies. Moreover, significant challenges arise when attempting to establish liability for an artificial legal “person” for its actions, giving rise to substantial moral and ethical concerns. The selection of those who would bear the tax has significant policy implications.

With various considerations, the authors propose a Value Added Tax (VAT) with multiple rates for sustainable entrepreneurs adopting RAIA. The author does not recommend implementing new taxes, such as robot taxes, which previous researchers or policymakers have discussed in several countries. The complexity of the new tax policy can potentially increase the administrative costs of taxpayers. Taxpayers may incur higher administrative costs if the policy introduces complicated rules, calculations, or compliance requirements. This could include expenses related to hiring tax professionals, such as accountants or tax consultants, to navigate the complexities and ensure accurate

submissions. Furthermore, the administrative burden may escalate if the tax policy involves frequent changes or updates, bearing in mind that there is still debate from the tax authorities regarding RAIA taxes. It must also be taken into consideration that introducing new tax policies often necessitates significant legislative overhaul. This can be a protracted and politically challenging process. VAT, on the other hand, can be incorporated into existing tax legislation with fewer hurdles, ensuring faster implementation. The new tax policy is also likely to face resistance and rejection. If taxpayers perceive a disconnect between the policy and their current economic needs and business challenges, they are more inclined to reject it. For developing countries, public sentiment towards the government and its credibility can significantly impact taxpayers' willingness to accept a new tax policy. A lack of trust in the government's intentions or a perception of political bias in the policy's design can lead to outright rejection.

There are two main objectives of RAIA taxation, namely, firstly, to provide equal opportunities for small and large sustainable entrepreneurs to adopt RAIA to support sustainable development (regulatory purposes), without ignoring the fact that there is a potential for RAIA adoption in a brutal manner under the guise of efficiency. Second, the government has sufficient funds to finance mitigation programs for negative externalities arising from adopting RAIA (budgetary purposes). VAT, as a consumption-based tax, has the potential to strike a balance between regulatory objectives and revenue generation while minimizing economic distortions. VAT is based on consumption rather than income. In contrast to a progressive income tax, which charges more taxes on the wealthy or high-profit businesses, VAT is charged equally on every purchase. If VAT is proposed to replace the idea of an income tax for RAIA, it eliminates the disincentive-to-succeed complaint levied against progressive tax systems that reduce opportunities to save or invest. In addition, because it is imposed on the added value of goods and services, VAT allows policymakers to tailor the tax rate according to the level of automation and AI or robot integration. VAT can also be designed to offer preferential rates or exemptions for essential goods and services related to RAIA adoption by sustainable entrepreneurs. This pattern ensures that sustainable entrepreneurs who have limited capital are not financially disproportionately burdened due to RAIA implementation. Equally important, VAT with multiple rates discourages the frivolous spending of sustainable entrepreneurs, which prevents uncontrolled adoption of RAIA. Regarding budgetary functions, VAT proves to be a resilient and steady source of revenue. As robots and AI become more integrated into production processes, traditional sources of taxation, such as income taxes derived from human labor, may experience disruptions. VAT, however, remains robust, as it captures value at multiple stages of production and distribution. This ensures a stable revenue stream for the government and spreads the tax burden across the entire consumption chain, mitigating the risk of revenue shortfalls.

The VAT neutrality principle is a pivotal element of VAT systems that profoundly impacts taxation and its effectiveness in curbing tax evasion, especially when applied to emerging technologies like RAIA within sustainable entrepreneurship. VAT neutrality fundamentally underscores the objective that taxation should not serve as a determinant for

business decisions, but rather, these decisions should be primarily motivated by economic considerations. VAT's design is oriented to prevent this distortion by allowing businesses to deduct input tax throughout the supply chain, except for the final consumer. This mechanism ensures that the ultimate tax liability falls on the end consumer, irrespective of the product's nature, the distribution chain's complexity, or the delivery methods employed. Therefore, the neutrality principle ensures that businesses operating under similar circumstances and engaging in similar transactions face comparable levels of taxation, thereby mitigating distortions in economic choices. Moreover, VAT exhibits a neutral stance in international trade, making it a compelling option for developing countries fostering the adoption of RAIA within the realm of sustainable entrepreneurship. Being destination-based, VAT guarantees that imported goods and services are treated like domestically produced ones, establishing an equitable playing field for RAIA developers or manufacturers engaged in international trade. Furthermore, VAT's inherent characteristics contribute to better tax compliance and reduced tax evasion compared to income tax. The transparency and traceability embedded in VAT systems make it significantly more challenging for sustainable entrepreneurs who adopt RAIA to engage in tax evasion. VAT transactions are meticulously documented, from the initial purchase of inputs to the final sale to consumers, making it easier for tax authorities to monitor and enforce compliance. In contrast, income tax relies heavily on self-reporting and is more susceptible to evasion through underreporting income or fraudulent deductions.

Are earmarked taxes required?

Based on the impact mapping results, it is known that sustainable entrepreneurs, while striving to integrate digitalization and eco-friendly practices into their business models, often face challenges such as increased electronic waste, energy consumption, and digital divides among communities. The imposition of targeted taxes on aspects of digital transformation that contribute to negative externalities can serve as a financial incentive for sustainability efforts. Empirical evidence underscores the efficacy of earmarked taxes in encouraging positive outcomes. Earmarked tax revenues directed toward sustainability initiatives are expected to encourage measurable improvements in environmental metrics, social equality, and technological accessibility. Nevertheless, it is essential to include transparency and traceability as fundamental elements of the earmarking process in order to enhance public accountability and foster trust. Clear communication regarding the allocation of tax revenues for sustainable projects ensures that citizens and stakeholders are aware of the government's commitment to addressing negative externalities arising from digital transformation. This transparency fosters a collaborative environment between policymakers, sustainable entrepreneurs, and the public, encouraging collective efforts toward achieving a harmonious balance between technological progress and environmental well-being.

Equally important is the demand to strategically allocate tax revenues towards targeted sectors that promote responsible RAIA integration. In the context of adopting RAIA, the allocation of earmarked taxes toward specific priorities in the domains of the

economy, society, and the environment can play a pivotal role in fostering growth and sustainability for entrepreneurs engaged in sustainability-driven initiatives. The strategic allocation of resources through earmarked taxes can effectively address various challenges associated with the integration of advanced technologies while concurrently minimizing negative impacts. This analytical explanation focuses on six key earmarked tax priorities and elucidates their rationale within the broader framework of technology adoption and sustainable entrepreneurship.

Economic Sector:

a. Research and Development Incentives: Earmarked taxes directed towards research and development incentives serve as a cornerstone for sustainable entrepreneurs in developing countries aiming to harness the benefits of RAIA. Such incentives stimulate innovation by providing financial support and favorable conditions for research activities. This allocation ensures that local entrepreneurs have the resources to develop novel solutions, adapt existing technologies to local contexts, and contribute to advancing sustainable automation practices within their economies.
b. Skills Training and Education: A pivotal priority is investing in skills training and education, as it addresses the critical challenge of bridging the skills gap in adopting advanced technologies. Earmarked taxes directed toward education initiatives enable entrepreneurs to cultivate a workforce with the necessary technical competencies to operate, manage, and maintain automated systems. This focus on skills development ensures that the local labor force remains relevant and adaptable in an increasingly automated landscape.

Social Sector:

a. Labor Market Transition Support: Earmarking taxes to support labor market transitions is paramount for sustainable entrepreneurs as it emphasizes the humane aspect of automation adoption. This allocation facilitates the retraining and reskilling of workers whose jobs might be displaced by automation. By offering support in transitioning to new roles or industries, entrepreneurs can minimize potential social disruptions, alleviate job displacement concerns, and foster inclusivity within the technological transformation.
b. Social Safety Nets: Social safety nets represent a proactive measure to mitigate potential adverse effects on vulnerable populations resulting from automation. Earmarked taxes channeled toward safety net programs help entrepreneurs establish mechanisms to protect individuals and communities adversely impacted by job displacement. By prioritizing social welfare, sustainable entrepreneurs demonstrate their commitment to equitable development and the well-being of their societies.

Environmental Sector:

a. Green Technology Adoption: Earmarked taxes dedicated to promoting the adoption of green technologies within the realm of automation exhibit a dual commitment to environmental sustainability and technological advancement. Such funds enable entrepreneurs to integrate eco-friendly practices and energy-efficient solutions into

their automated processes, thereby reducing carbon footprints and contributing to global efforts in mitigating climate change.

b. Environmental Impact Monitoring: The allocation of earmarked taxes to monitor the environmental impact of automated systems underscores a responsible approach to technology integration. Sustainable entrepreneurs recognize the importance of tracking the ecological consequences of their operations and use these funds to develop robust monitoring mechanisms. This approach ensures that automation's benefits are not outweighed by negative environmental outcomes, fostering a harmonious coexistence between technology and nature.

c. Waste Reduction and Recycling Programs: Tax incentives directed toward waste reduction and recycling programs are indispensable for minimizing the environmental footprint of technological advancements. Promoting responsible disposal and recycling of outdated technology components is crucial for a sustainable circular economy.

In order to promote sustainable entrepreneurship in developing nations, it is imperative to implement a comprehensive approach that effectively enhances the effectiveness of tax policies. The effectiveness of these programs relies on the convergence of multiple factors, including regulation frameworks, institutional support, and collaboration among key stakeholders. Establishing a well-defined and unambiguous legal framework holds significant importance within the scope of regulation. It is imperative for developing nations to adopt tax laws that align with their sustainable development goals and offer sufficient incentives to encourage entrepreneurs to participate in environmentally conscious ventures. To foster trust and consistency for investors and entrepreneurs, these rules must exhibit transparency, stability, and predictability. Moreover, institutional support is instrumental in translating policy intentions into tangible outcomes. Developing countries should invest in bolstering the administrative capacities of tax authorities in order to implement and monitor tax policies with designated purposes effectively. This requires training personnel, establishing comprehensive monitoring and evaluation mechanisms, and employing technology-driven solutions to ensure compliance and prevent incentive abuse. Collaborative efforts between tax authorities, regulatory agencies, and relevant ministries are indispensable to create a synergistic ecosystem that nurtures sustainable entrepreneurship. Stakeholder collaboration forms the bedrock of successful earmarked tax policies. A comprehensive engagement strategy involving entrepreneurs, industry associations, academia, and civil society organizations facilitates co-creating policies addressing on-the-ground challenges. By involving stakeholders from diverse backgrounds, policy design becomes more nuanced, incorporating real-world insights and increasing the likelihood of policy uptake. Furthermore, dissemination of information is crucial. Entrepreneurs must have easy access to detailed information about the tax incentives available to them. This transparency reduces information asymmetry, enabling entrepreneurs to make informed decisions and capitalize on the opportunities provided by the earmarked tax policies.

CONCLUSION

RAIA in sustainable entrepreneurship provides both potential and obstacles. This research examines the key results and proposes subtle tax policy solutions to traverse this complex landscape. RAIA adoption has two consequences, according to our study. RAIA technologies improve operational efficiency, productivity, resource management, worker safety, and innovation. These benefits appeal to sustainable enterprises that want to improve their operations, fulfill eco-friendly product demand, and maintain their excellence and sustainability. However, RAIA integration raises several problems that temper this optimism. Low-skilled people are especially at risk of job loss. The necessity for extensive worker retraining and adaptability to changing duties might compound social and economic issues caused by this displacement. Data privacy, AI bias, and equal resource allocation are also important ethical issues. RAIA's energy use during operation and manufacture raises concerns regarding emissions reduction. AI systems may counteract energy savings due to their processing needs, notwithstanding their efficiency in many areas. They need a precise balance between optimization and environmental sustainability. These results demonstrate the necessity for tax strategies to handle the complicated effects of RAIA adoption. The dispute between taxing robots as objects versus their owners as subjects highlights the necessity for clear policy guidance. The tax base—outcome- or action-related—also affects taxation's ability to reduce negative externalities. The tax collecting system—self-assessment or withholding—presents obstacles. Accuracy, administrative complexity, technology flexibility, equality, and innovation and development support determine the best strategy. To address these issues, we suggest a VAT instead of income tax for RAIA taxation. VAT's unique consumption-based approach supports sustainable enterprises while ensuring fiscal stability by fine-tuning automation. We also support designated taxes on digital transformation's negative externalities. These taxes may encourage sustainability and promote public accountability by allocating money transparently. The strategic allocation of tax funds to economic, social, and environmental concerns is crucial. RAIA taxation stimulates innovation, bridges skills gaps, helps displaced employees, offers safety nets, promotes eco-friendly activities, monitors environmental effects, and encourages responsible disposal and recycling.

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8 CORPORATE SOCIAL RESPONSIBILITY ACTIONS BY FAST FASHION INDUSTRY: PRO-ENVIRONMENTAL OR STRATEGIC TAX BEHAVIOR?

Priandhita Sukowidyanti Asmoro

Abstract

The fast fashion industry, known for its rapid production and affordability, has gained prominence in recent years but also faces growing scrutiny due to its adverse social impacts and significant contribution to waste, pollution, and emissions, exacerbating the triple planetary crisis. The discussion reveals the multifaceted factors influencing CSR engagement, from stakeholder activism to consumer awareness and shareholder pressure. While CSR promises to address societal and environmental issues, challenges related to cost-efficiency and regulatory frameworks hinder its widespread adoption. Lastly, this article explores the complex relationship between CSR actions and strategic tax behavior within the fast fashion industry, focusing on developing countries. It examines four key theoretical perspectives: Shareholder Theory, Stakeholder Theories, Legitimacy-Based Theories, and Political Cost Theory. The research reveals the multifaceted motivations and challenges fast fashion companies face in engaging with CSR and the impact of taxation strategies on their CSR initiatives. Furthermore, it highlights the significance of stakeholder activism, consumer awareness, regulatory environments, and competitive landscapes in shaping CSR practices within this industry. The study underscores the need for a nuanced understanding of CSR and taxation in the fast fashion industry's context, emphasizing the pivotal role of ethical considerations, societal norms, and political dynamics.

Keywords: *Fast Fashion, Developing Countries, CSR, Shareholder Theory, Stakeholder Theories, Legitimacy-Based Theories, and Political Cost Theory*

P. S. Asmoro
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

New season, new designs, buy inexpensive, buy more, move on, and cast away reflect how the waste, pollution, and emissions triggered by fast fashion fuel the triple planetary crisis. The interplay between consumptive habits, lifestyle, and the fast fashion industry's response makes fashion one of the world's most environmentally and socially harming industries. Regrettably, the prospective long-term adverse consequences stemming from the fast fashion industry's operational procedures were not anticipated in advance. Before 2012, scholars, marketers, fashion analysts, and policymakers saw the fast-fashion industry as requiring further development to cater to individuals' fundamental wants for cheap apparel. To achieve this objective, several critical variables have been proposed in the literature. These variables include customer behavior (Bruce & Daly, 2006; Cachon & Swinney, 2011; Chatvijit, 2012), brand preference (Prasertsri & Lertwannawit, 2012), real-time data absorption (Sull & Turconi, 2008), data querying (Borthick & Curtis, 2008), information technology (Kang & Sung, 2010; McAfee et al, 2004), fast marketing and marketing tools (Sheridan et al., 2006; Anna & Cosenza, 2007; Wraeg & Barnes, 2008), financial performance (Hayes & Jones, 2006), and inventory management (Caro & Gallien, 2010; Choi et al, 2011). Fast fashion is often seen as a beneficial solution for the garment sector in several industrialized countries that are now facing challenges (Doeringer & Crean, 2006; Barnes et al., 2007; Bhardwaj & Fairhurst, 2010).

However, since the last decade, the dark side of fast fashion has become more of a public concern, drowning out the positive perspective of fast fashion as a new, economically profitable business model (Gaskell, 2019; Zellweger & Thomas, 2019). Notwithstanding the economic potential, the dominant business model in the fast fashion industry, which is motivated by money rather than quality-driven, places the industry at number six among the world's most polluting industries in 2023, producing 2.1 billion tonnes (bn) of global greenhouse gas (GHG) emissions annually (theecoexperts, 2023). This number is lower than the energy industry (15.83 bn), transportation (8.43 bn), manufacturing and construction (6.30 bn), agriculture (5.79 bn), and food retail (3.10 bn). Different stipulations, Climatetrade (2023) ranks fast fashion as the third most polluting industry, supplying approximately 10% of the world's annual carbon footprint, more significant than all international air travel and maritime shipping. Climatetrade (2023) additionally points out that greenhouse gas emissions are not the sole environmental issue in the fast fashion industry.The fast fashion industry's business practices are subject to criticism from several organizations. Cline (2013) was among the pioneering American journalists who first exposed the deplorable labor conditions prevalent in the garment industry of Bangladesh. Cline (2013) underscores the correlation between reduced prices, increased fashion consumption, and the subsequent proliferation of the haul phenomenon. This trend, however, has significant environmental implications, as it contributes to a substantial burden on the ecosystem and is inherently unsustainable.

Additionally, the surge in fashion consumption has led to labor exploitation, with unsafe working conditions becoming prevalent and human rights violations occurring. Several other journalists have also offered pointed critiques on the presence and impact of the fast-

fashion industry in their literary works. The authors assert that the fast fashion industry generates a substantial number of clothes annually while highlighting the significant rise in environmental degradation and worker exploitation in recent years. These phenomena are attributed to the endorsement of capitalist and Marxist ideologies (Siegle, 2011; Anguelov, 2015; Thomas, 2019). Several scholars have raised concerns about the actual cost of fast fashion, specifically in relation to the detrimental effects associated with its business model. These scholars include Barrett (2017), Aishwariya (2019), Niinimäki et al. (2020), and Arora et al. (2022). The notion of unethical practices in the fast fashion industry has been extensively examined in the scholarly literature (Joy, 2012; Rutter, 2017; Stringer et al., 2020; Endrayana & Retnasari, 2021; Stringer et al., 2022).

Despite widespread public condemnation, the fast fashion industry persists in expanding. No data shows the number of fast fashion companies operating globally or locally, but if you look at the market size data, it can be assumed that the players in the fast fashion industry are continuing to grow. It is undeniable that fast fashion is like candy that attracts many entrepreneurs to enjoy the "sweet taste." The fast fashion business model has introduced a new global textile and apparel industry dynamic. The superior performance of fast fashion businesses compared to non-fast fashion enterprises underscores the popularity and appeal of this particular strategy (Su & Chang, 2017). Since 2016, the market size for fast fashion has risen at a compound annual growth rate (CAGR) of 1.69 percent, reaching a value of nearly $91,226.92 million in 2021. This value is forecast to jump to $173,899.99 million in 2026 at a rate of 13.8%. The fast fashion market is expected to grow at a CAGR of 6.70% between 2026 and 2031, reaching $240,530.09 million. (TBRC, 2023).

Researchers agree that larger markets feature tougher competition, which leads the least productive firms to exit (Melitz & Ottaviano, 2008 Kesternich et al, 2020; d'Aspremont & Dos Santos, 2021). Companies that can endure in expansive markets often exhibit greater levels of efficiency, own broader scales of operation, and generate better levels of profitability compared to their counterparts operating in smaller markets (Ding & Niu, 2019). Many global fast fashion companies shift their manufacturing activities to developing countries to win the competition. According to Linden (2016), developing countries have minimal entrance barriers into the fashion industry, making them fertile manufacturing and production grounds for fast fashion. Bruce & Daly (2006) stated the same thing that industries in developing countries have limited financial and know-how capabilities; as a result, there has been an increase in foreign ownership of textile mills and garment manufacturing facilities, particularly those with more than one thousand employees. As a result, these developing countries are granted preference in partnerships with garment manufacturers from developed countries. Such partnerships have, however, been more biased towards developing Asian countries such as Bangladesh and China, where labor is cheaper than that of developed European countries (Chipo et al., 2018). Williams (2022) reaches a similar conclusion. For companies in the fast fashion industry to produce, distribute, and sell products at remarkably low prices, they must utilize inexpensive materials, cheap real estate, and cheap labor from developing countries. Combining these three pillars of fast fashion forms the industry's foundation, namely sweatshops.

In addition, emerging markets have a tremendous future growth rate potential based on market equalization arguments. This is why fast fashion companies shift their production to developing countries and increase their capital assets by opening new stores (Anguelov, 2015). Most marginal sales volumes in developing countries markets are greater than those in developed countries for firms that sell products internationally (Melitz &Trefler, 2012; Dunning, 2013;). According to Strizhakova et al. (2008), global brands are well-received in emergent and developing countries because they establish an imagined global identity for those who feel excluded or marginalized by residing in an impoverished country. In the emerging markets of the developing world, the adoption of global brands is influenced by feelings of inadequacy, isolation, and cultural immateriality. The fact that both production and consumption are exceedingly high indicates that the situation in developing countries is quite alarming and that achieving sustainability is an ongoing challenge.

The fast fashion industry in developing countries becoming 'green' will always be a double-edged instrument. In addition, the race for socioeconomic advancement blinded low- and middle-income countries to the consequences of the massive production and consumption of apparel. In countries like Bangladesh (Bala et al., 2020) and Ethiopia (Khurana, 2018), this industry has contributed to foreign income, foreign exchange, women's empowerment, total export value, and GDP. In the past, researchers such as Gardetti & Muthu (2020), Bottani et al. (2019), Buzzo & Abreu (2019), Macchion et al. (2018), Wellers (2017); Fletcher & Tham (2014); Turker & Altuntas (2014); Pookulangara & Shephard (2013) have highlighted the issues associated with unsustainable production and offered solutions for the apparel value chain. Due to a dearth of governance, awareness, and corruption, these best practices have never been implemented in low- and middle-income countries. The paradox is that developed countries do not mass produce, so environmental degradation is minimal, they are less populous, and both consumers and producers are aware of the negative effects of mass production and consumption.

The question mark over the success of implementing the concept of sustainable fashion in developing countries becomes bigger when there is a conflict between corporate social responsibility (CSR) policy and tax policy. Two major contrasting perspectives emerge in this discourse, each shedding light on the divergent facets of CSR's role in the corporate world. On one hand, proponents argue that CSR embodies a genuine commitment by companies to fulfill their responsibilities towards society and the environment. This perspective emphasizes CSR's moral and ethical dimensions, emphasizing its intrinsic value beyond profit-seeking motives. Conversely, an opposing viewpoint posits that CSR primarily functions as a strategic tool employed by businesses to enhance their public image, ultimately leading to increased profits. It is argued that when effectively communicated to the public, such initiatives can generate positive publicity and foster consumer loyalty, ultimately translating into higher revenues. Thus, the question arises as to whether providing tax incentives for the sustainable fashion industry, such as tax deductions, tax cuts, or Value Added Tax (VAT) Reduction, is the right policy or provides opportunities for tax avoidance. There is also another view that companies make efforts to minimize the tax burden through strategic tax planning by utilizing tax facilities provided

by the government so that they have more resources to invest in CSR activities. How this conflict can worsen environmental and social conditions due to the existence of the fast fashion industry in developing countries will be discussed further in this paper.

Motivational differences between the fast fashion industry in developing and developed countries

The motivation behind the operations of the fast fashion industry differs significantly between developing and developed countries, driven by a complex interplay of economic, social, and regulatory factors. In developing countries, one of the primary motivations for fast fashion companies is the relatively lower labor costs. The availability of a large labor force willing to work for lower wages is an attractive proposition for these companies. This cost advantage enables them to produce apparel at a fraction of the cost of developed countries, thereby enabling the creation of inexpensive and fashionable fashion items, a fundamental aspect of the fast fashion business model. As a result, the motivation in developing countries is frequently centered on cost-effectiveness and the capacity to produce inexpensive apparel on a large scale. In contrast, the motivation in developed countries shifts due to greater labor costs as a result of labor laws, minimum wage standards, and enhanced workers' rights. To remain competitive, fast fashion companies in developed countries may be compelled to embrace automation and innovation, thereby reducing their reliance on labor-intensive processes. In addition, some of these businesses may cater to a distinct consumer base by focusing on luxury fashion segments where specialized labor and quality craftsmanship are highly valued. Motivation is also significantly influenced by consumer demand. In many developing countries, a growing middle class with rising disposable incomes fuels the demand for affordable and fashionable apparel. As they recognize this market's growth, fast fashion brands are motivated to increase their presence in these regions to draw into this demographic. Conversely, in developed countries, consumer preferences are often more diverse, with a growing emphasis on sustainable and ethically produced clothing. This consumer demand motivates fast fashion companies to incorporate more responsible practices to cater to these preferences and uphold their brand image. Ethical considerations are another critical factor influencing motivation. In developing countries, where labor regulations may be less stringent, the motivation to address ethical concerns may vary among fast fashion companies. Some may prioritize cost-cutting to maintain profitability, while others may begin to acknowledge the importance of ethical practices due to increasing global scrutiny and consumer pressure. In developed countries, where ethical and sustainability issues are more prominently debated, fast fashion brands may be more motivated to improve their ethical track record and sustainability efforts to align with consumer expectations and avoid reputational damage. The regulatory environment further shapes motivation. Developing countries may have less stringent regulations regarding labor and environmental standards, motivating fast fashion companies to operate with fewer restrictions. In contrast, developed countries often enforce stricter regulations in these areas. Fast fashion companies operating in such regions are motivated to comply with these regulations to avoid legal issues, protect

their reputation, and mitigate the risk of consumer backlash. Finally, the competitive landscape plays a role in motivation. The fast fashion market may be less saturated in developing countries, motivating companies to expand aggressively and capture market share. Conversely, in developed countries, the market may be more mature and competitive, prompting fast fashion companies to seek differentiation through sustainable practices, unique design collaborations, or innovative marketing strategies.

Why the fast fashion industry in developing countries should engage in CSR

Implementing Growth-Oriented Strategies centered on expanding a company's size, market share, and profitability by the fast fashion industry in developing countries convinced all stakeholders to encourage the fast fashion industry to become more engaged in CSR activities. However, the salient point that demands heightened attention, especially in the context of developing countries, is the perception of CSR as a mechanism to address the pervasive 'governance gaps' that persist due to the shortcomings of weak, corrupt, or under-resourced governments. These governments often struggle to fulfill their obligations in providing essential social services, including but not limited to housing, infrastructure development (such as roads and electricity), healthcare, and education. Within this paradigm, CSR signifies a voluntary commitment by corporations to contribute positively to society beyond their core profit-driven objectives. In such contexts, CSR initiatives can encompass a wide array of activities in the form of involvement in the development and funding of programs for the community that the government does not provide. By engaging in these initiatives, companies can compensate for the deficiencies in public service delivery and act as quasi-governments in addressing the pressing social needs of the population. Weak governance structures often create an environment where companies perceive CSR as a moral obligation and a strategic necessity. By stepping into the governance void, corporations can gain public trust, mitigate risks associated with political instability, and secure their long-term business interests.

Another important driving factor is stakeholder activism in fast fashion, primarily spearheaded by non-governmental organizations (NGOs), advocacy groups, and concerned individuals who have actively exposed the negative social and environmental consequences associated with the industry's operations in developing countries. These revelations have garnered significant public attention and raised ethical concerns, prompting companies to take action. Additionally, consumers have become increasingly conscientious about the origin of their clothing and the conditions under which they are produced. Social media and digital platforms have amplified consumers' voices and played a pivotal role in disseminating information about unethical practices within the fashion industry. Scandals related to sweatshops, hazardous chemicals, and wasteful overproduction have gained widespread attention, triggering consumer outrage and activism. Social media and digital platforms enable consumers to mobilize and pressure fashion brands to adopt more sustainable and socially responsible practices. As a result, fast fashion companies recognize that their reputations and profitability are at stake, thereby incentivizing their involvement in CSR initiatives. Suppliers also play an instrumental role in advancing CSR in the industry.

As stakeholders are deeply integrated into the supply chain, they can influence the practices of fashion companies. Suppliers who prioritize sustainability, ethical labor, and responsible sourcing are favored by brands seeking to align with CSR objectives. This has resulted in a shift in supplier relationships, emphasizing partnerships that uphold ethical and sustainable values. Shareholders, frequently concerned with the long-term financial health of the companies in which they invest, advocate for CSR initiatives more frequently. They recognize that sustainable practices can mitigate risks associated with environmental and social controversies, thereby protecting the reputation and financial stability of the brand. Consequently, shareholders are putting pressure on fast fashion companies to consider the long-term effects of their operations, promoting a transition toward more sustainable and accountable practices.

Consumer awareness and the demand for ethical fashion have emerged as significant factors influencing the fast fashion industry's CSR initiatives in developing countries. This phenomenon reflects a significant shift in consumer preferences toward environmentally and socially responsible clothing options. Ethical fashion incorporates multiple elements, such as equitable labor practices, environmentally favorable manufacturing processes, and transparent supply chains. As consumers become more aware of their clothing choices' social and environmental impacts, they demand that the fashion industry adopt more transparent and ethical business practices. This expanding awareness has altered the landscape of rapid fashion. Historically, developing nations, which are frequently characterized by low production costs and lax labor regulations, have been desirable locations for the production of rapid fashion. However, consumers' demand for ethical fashion has prompted many developing nations to reevaluate their CSR practices. Now, brands operating in these regions are under pressure to ensure equitable compensation, secure working conditions, and environmentally responsible production processes. CSR initiatives are now a moral and strategic requirement for fast fashion companies. Fast fashion companies in developing countries have implemented CSR programs in response to consumer demands and the need to safeguard their brand image. Typically, these initiatives involve supply chain transparency, implementing sustainable procurement practices, reducing water and energy consumption, observing ethical labor standards, and circular economy models. Some businesses are also investigating innovative recycling and investing in upcycling programs to reduce their products' environmental impact. However, these initiatives represent significant progress toward more responsible practices, obstacles exist, such as ongoing monitoring and improvement.

Constant commitment to cost-effectiveness by the fast fashion industry is the primary barrier to implementing CSR in developing countries. The primary objective of fast fashion companies is to manufacture inexpensive apparel quickly, typically placing speed above ethical labor standards and environmental considerations. This emphasis on cost reduction makes it challenging for companies to allocate sufficient resources for CSR initiatives, which often require substantial financial investments in fair labor practices, sustainable sourcing, and supply chain transparency. Another significant factor impeding the incorporation of CSR in developing countries' fast fashion industries is the lack of regulatory frameworks

and enforcement mechanisms. Many developing countries have limited or poorly enforced labor laws and environmental regulations, allowing fast fashion companies to operate with relative impunity. This regulatory vacuum diminishes the incentive for these companies to adopt responsible practices voluntarily, as they face fewer consequences for non-compliance.

Transformations in CSR Models and the Ideal Role of Tax

Most CSR by the fashion industry in developing countries, the majority SMEs, is focused on internal activities (especially employee welfare), whereas external (philanthropic) and environmental movements are less common. The prioritization of those related to employee welfare can be attributed to several factors. Firstly, many SMEs in this sector operate within highly competitive and cost-sensitive markets, where profit margins are often razor-thin. As a result, they may view investments in employee welfare, such as ensuring fair wages and safe working conditions, as a means to enhance productivity, reduce turnover, and mitigate reputational risks associated with labor violations. This internal focus is further amplified by the heightened scrutiny placed on labor practices within the fashion industry, driven by advocacy groups, consumers, and regulatory bodies. Conversely, the allocation of resources towards external philanthropic activities, which could encompass initiatives such as community development projects or charitable contributions, tends to be less prevalent among fashion industry SMEs in developing countries. This disparity may be partly attributed to the aforementioned financial constraints that many of these businesses face. Moreover, there is often a perception that addressing internal employee welfare issues takes precedence over external philanthropy, as it aligns more closely with immediate business interests and risk mitigation.

The company's strategic choice to concentrate only on one activity may have adverse consequences in the event that there arises a need to convey corporate social responsibility initiatives to the community effectively. Research by Viererbl & Koch (2022) shows that if a firm participates in a large number of CSR activities, a high level of CSR communication has a positive impact on views of its social responsibility. In contrast, if a corporation participates in a few activities but speaks extensively about them, this beneficial influence may turn negative. Therefore, it is imperative for fostering more engagement of the fast-fashion industry in developing countries with CSR, in terms of selection, quality, and impact of CSR programs. Especially with the refinement of the CSR model from the Contemporary Model to the Sustainable Model of CSR. Carroll's CSR Pyramid (1991) offers a comprehensive framework for understanding corporate social responsibility. At the base of Carroll's pyramid lies economic responsibility. This foundational level signifies a company's obligation to be profitable and economically sustainable. In other words, a business must generate profits to survive and thrive. Without economic viability, a company cannot fulfill its other responsibilities, such as providing employment and supporting community initiatives. Moving up the pyramid, the next layer is a legal responsibility. Here, organizations are expected to adhere to all laws and regulations governing their operations. Compliance with local, national, and international laws is considered a fundamental

requirement for any business. Failure to meet legal obligations can result in penalties, fines, and damage to a company's reputation. Moving further up, Ethical Responsibility comes into play, encouraging organizations to go beyond legal requirements and make morally sound decisions that benefit both the company and society. Finally, the pinnacle is Philanthropic Responsibility, signifying voluntary actions that contribute positively to society, such as charitable docountries and community engagement. The CSR Pyramid, developed by Visser (2008), is a refined the CSR framework to address the unique challenges and opportunities faced by businesses in emerging economies. One notable difference is its contextual applicability. Carroll's model is general, applying universally, whereas Visser's model is designed to encourage businesses to adapt their CSR strategies to the specific social, cultural, and economic conditions of the developing country in which they operate. This is crucial as emerging economies often contend with distinct social, economic, and environmental issues. Visser's pyramid emphasizes the interdependence of its four levels: Philanthropic, Ethical, Legal, and Economic Responsibilities. Unlike Carroll's hierarchical approach, Visser's model recognizes that businesses may need to address all these responsibilities simultaneously. Although both agreed to place economic responsibility at a foundational level, Visser's model places philanthropic responsibilities at the forefront, acknowledging their significance in building goodwill and making a positive local impact. It underscores the importance of businesses contributing to local community development and economic growth, aligning with developing countries' needs.

A number of researchers argue that the ongoing development of the model should be enhanced by integrating the notion of sustainability (Dathe et al., 2022; Nguyen et al., 2021; Hopkins, 2017; Henriques, 2013). Sustainability and Corporate Social Responsibility (CSR) have become integral components of contemporary business strategies. The sustainability CSR models reflect a commitment to the well-being of society, the environment, and long-term corporate success. The concept of sustainability. The CSR model is a strategic framework that firms use to incorporate social, environmental, and economic factors into their operational practices. The objective is to establish a state of equilibrium among these aspects, with the additional goal of guaranteeing sustainability in the long run. One of the central tenets of this model is the recognition that businesses have a responsibility not only to their shareholders but also to a broader stakeholder community that includes employees, customers, suppliers, and the wider society. The CSR model emphasizes the mitigation of adverse environmental impacts within the context of environmental sustainability. This includes mitigating carbon emissions, preserving natural resources, and adopting environmentally sustainable industrial and supply chain strategies. Furthermore, it is strongly recommended that companies allocate resources towards the adoption of sustainable technology and the use of renewable energy sources as a means to address climate change and foster environmental well-being effectively. Social sustainability is an essential and integral element of the concept. The concept encompasses promoting diversity and inclusivity within the workforce, establishing equitable labor standards, and actively contributing to the betterment of the communities in which an organization operates. This may involve philanthropic activities, supporting local

initiatives, and actively engaging in social development projects. Companies prioritizing social sustainability recognize that a motivated and engaged workforce and strong community relations can enhance their long-term success. Economic sustainability is the third dimension of the sustainability CSR model. It revolves around maintaining financial stability and growth while upholding ethical business practices. This involves transparent financial reporting, ethical governance, and responsible management of resources. By adhering to these principles, companies can build trust with investors and consumers, which is essential for their sustainability in a competitive market. One of the key drivers behind the adoption of the sustainability CSR model is the growing awareness among consumers and investors about environmental and social issues. Stakeholders increasingly expect companies to operate ethically and transparently. Consequently, businesses that embrace this model can gain a competitive edge and safeguard their reputation in an era where corporate misconduct can have far-reaching consequences.

How can the fast fashion industry in developing countries actively engage in CSR? The author posits that market-based instruments represent the optimal policy choice for fostering sustainability in fast fashion. Market-based environmental policy instruments represent a strategic approach governments and regulatory bodies adopt to effectively address pressing environmental concerns through economic incentives and market dynamics. These instruments are meticulously crafted to internalize the external costs associated with environmental degradation, thus prompting sustainable practices and ensuring the efficient allocation of resources. One prominent strategy is the implementation of carbon pricing mechanisms, a linchpin in the fight against climate change. This includes two major components: the carbon tax and cap-and-trade systems. The carbon tax is imposed on greenhouse gas emissions at a rate proportional to the quantity of emissions produced. This financial burden motivates businesses to reduce their emissions in order to reduce their tax burdens. In contrast, cap-and-trade systems impose a quota on total emissions and disseminate or auction off emission allowances to enterprises. These permits may then be purchased or sold on the market, promoting a dynamic exchange of emission rights. Fast fashion companies that exceed their allotted allowances are required to acquire additional permits, whereas those who operate below their limits can monetize their excess allowances. This ingenious mechanism generates a thriving market for emission reduction in which economic incentives align with environmental objectives. Another critical avenue involves subsidies and tax credits, as governments extend financial incentives to propel the adoption of eco-friendly practices. Governments can provide tax credits to fast fashion companies that implement sustainable practices, such as recycling programs, reducing water usage, or supporting fair labor conditions. A tax credit is a government financial incentive to individuals or businesses to reduce their overall tax liability. Tax credits are designed to encourage certain behaviors or activities deemed beneficial for the economy, society, or specific policy objectives. These financial inducements ignite a virtuous cycle of green innovation and adoption, harmonizing economic interests with environmental stewardship. Furthermore, these incentives reduce the financial burden of transitioning to more sustainable business models. On the other hand, alternative environmental policy

tools, such as command-and-control legislation, have the potential to enforce stringent and consistent standards inside the fast fashion business. Although the implementation of rules is crucial for setting minimum standards, it is worth noting that they may not possess the same level of flexibility or cost-effectiveness as market-based tools when it comes to fostering innovation and sustainable practices. Market-based tools provide adaptability, therefore enabling organizations to ascertain the most economically efficient methods of attaining CSR goals. Furthermore, the fast fashion industry's intricate and varied supply chains in developing countries provide distinct issues that may be efficiently addressed via market-based mechanisms. These instruments can be adapted to specific environmental concerns and implemented at various supply chain stages, providing a nuanced strategy for CSR promotion.

Consequently, tax policies can be designed to penalize unsustainable practices while rewarding environmentally responsible conduct. This can be accomplished by implementing a tiered taxation system in which fast fashion companies are taxed according to their environmental impact. Companies with larger carbon footprints, excessive waste production, or unethical labor practices could be subject to higher tax rates, whereas those demonstrating significant progress in sustainability would receive tax incentives or reductions. Tax incentives can be specifically designed to encourage CSR and sustainability initiatives investment. These financial benefits can act as a strong motivator for fast fashion firms to incorporate sustainability into their core business strategies. Additionally, tax revenues generated from these levies could be earmarked for investments in sustainability initiatives. These initiatives may include funding research and development of eco-friendly materials, promoting sustainable supply chain management, or supporting recycling and circular economy initiatives within the fashion industry. Ensuring transparency in allocating and utilizing these funds is crucial to maintaining industry trust and fostering genuine sustainability efforts. Moreover, governments can collaborate with international organizations to establish standardized sustainability criteria and reporting frameworks for the fashion industry. Companies that meet these criteria could be eligible for tax breaks or preferential treatment in trade agreements. This would create a competitive advantage for sustainable fast fashion brands and encourage others to follow suit to remain competitive in the global market.

Debating views regarding CSR and Strategic Tax Behavior?

The complex relationship between CSR and taxation is the subject of extensive debate and analysis. This paper attempts to explore the ambiguity of the relationship between different CSR views and strategic tax behavior carried out by the fast fashion industry in developing countries. This section will review this issue based on four theories: 1) Shareholder Theory, 2) Stakeholder Theories, 3) Legitimacy-Based Theories, and 4) Political Cost Theory. The shareholder theory posits that a business's first obligation is to optimize its shareholders' wealth. This perspective places profit maximization as the ultimate goal, often leading to a focus on short-term financial gains and returns to shareholders. In the fast fashion industry, this translates to prioritizing dividends and stock price growth over other

considerations, such as ethical practices and environmental responsibility. While this approach may efficiently allocate resources and incentivize innovation, it carries the drawback of potentially neglecting the interests of other stakeholders, including workers and the environment. This approach can entail significant reputational risks if broader societal concerns are overlooked, relevant in the fast fashion industry with its ethical and environmental challenges. In the shareholder model, CSR initiatives beyond those directly tied to profit generation may be seen as a misuse of corporate resources, diverting funds away from the primary goal of wealth creation for shareholders. In other words, CSR initiatives should align with and contribute to the financial interests of shareholders. This can involve strategies such as cost reduction through sustainable practices, which can enhance profitability over the long run. For example, a company might invest in eco-friendly production methods if it can demonstrate a clear return on investment through cost savings and increased sales from a green image. In this option, the tax manager will choose forms of social and environmental expenditure that receive tax incentives, for example, tax cuts or tax deductions, to further maximize after-tax profits, which will be distributed to shareholders in the form of dividends. This method is considered safer if you choose to carry out tax evasion with a high level of illegality. Shareholder theory views managers as agents who should work in the best interests of shareholders and receive incentives based on stock performance. Thus, the tax manager's decision to involve the company in tax planning that has a legal or illegal nature is completely under the supervision of shareholders. Moreover, shareholder theory also tends to encourage management to take risks that can increase stock value if deemed acceptable by shareholders. This means that it does not rule out the possibility that management will be forced to carry out aggressive tax avoidance and even tax evasion if shareholders feel that this action can safely increase the dividends received, for example, by transferring recognition of CSR costs to countries that provide higher tax deduction rates or collaborating with NGOs to conduct fictitious CRS and then claiming the "costs" as tax deductions.

In contrast, stakeholder theories advocate for a holistic approach to CSR, where businesses should consider the interests of all stakeholders, not just shareholders. Stakeholder theory posits that the legitimate interests of stakeholders in firms are derived from their fundamental contributions to the organization. The quid pro quo connection between firms and their stakeholders may be seen as a manifestation of the "nexus(es) of contracts." As a result, corporations are considered to lack a definitive owner since any one entity cannot own a nexus. This perspective aligns with the notion that success in the fast fashion industry depends on creating value for a wide array of stakeholders, including employees, customers, suppliers, and the community. This translates into initiatives like fair wages for workers, ethical sourcing, and environmentally responsible practices. While stakeholder theories promote ethical responsibility and long-term sustainability, they can pose challenges in balancing conflicting interests, potentially impacting short-term profitability. The primary objective here is achieving a win-win situation for all stakeholders, fostering positive relationships and long-term sustainability. In the context of fast fashion, stakeholder theories can help address labor rights issues and environmental

concerns, which are central to the industry's CSR efforts. For this reason, the fast fashion industry will require very high costs because it has to design more diverse CSR programs to meet each stakeholder's interests. This will encourage management to get involved in tax evasion or even take risky and unethical decisions to involve the company in tax evasion practices to obtain large after-tax profits and use the generated savings for more CSR activities. However, a number of previous studies show a positive relationship between strategic tax behavior and CSR. Consistent with the foundational tenets of the stakeholder approach, tax compliance is a rational and natural mechanism through which corporations can nurture and fortify favorable stakeholder relationships. Consequently, the inclination of managers to regard taxes solely as an expense to be minimized should progressively diminish as they become cognizant of their obligations in meeting the diverse requirements of all stakeholder cohorts. When companies conscientiously fulfill their tax obligations, it not only upholds the legal and ethical aspects of their operations but also contributes to a positive reputation within the community and among stakeholders. By paying taxes responsibly and transparently, businesses demonstrate their commitment to societal well-being and their acknowledgment of the interconnectedness between their success and the health of the broader ecosystem in which they operate. Under the contrasting scenario, the fast fashion industry is becoming more tax avoidant because they do not care about the impact of tax avoidance practices on community welfare and environmental conservation efforts. Furthermore, it is often observed that the oversight of tax compliance and the execution of CSR in developing countries is characterized by inadequate rules and a scarcity of competent supervisory personnel. In addition, fast fashion industries that exhibit poor social responsibility tend to engage in tax avoidance practices when faced with declining profitability, prioritizing preserving their limited financial resources for internal objectives.

Meanwhile, legitimacy-based theories emphasize that a company's actions must align with societal norms and expectations to maintain legitimacy. This perspective suggests that companies must comply with the law and meet broader societal expectations, a crucial consideration in the fast fashion industry where ethical and environmental concerns are prominent. Companies adhering to legitimacy-based theories invest in transparent reporting and ethical practices to gain public trust and reduce regulatory scrutiny. However, there's a risk of companies engaging in "greenwashing" to appear more legitimate than they are, a concern relevant to fast fashion brands that face increasing scrutiny regarding their sustainability claims. The primary objective here is to maintain societal legitimacy through ethical and transparent behavior. However, we cannot turn a blind eye to the fact that, within this framework, organizations frequently engage in actions to create the appearance of adherence to social and ethical standards. These actions are known as organizational facades or symbolic gestures. Simultaneously, the concept of organized hypocrisy emphasizes that organizations frequently display contradictory behavior. On one hand, they publicly depict themselves as responsible corporate citizens, which aligns with the principles of CSR. On the other hand, they may engage in aggressive tax behavior or tax evasion, which can contradict their CSR commitments.

Based on this paper's last point of view, political cost theory states that companies engage in CSR to reduce political scrutiny and potential government regulation. By demonstrating social responsibility, companies aim to build political capital and gain support from regulators or lawmakers. This perspective can lead to significant CSR investments to gain political support and reduce regulatory risks. However, a potential weakness is the risk that CSR actions are driven more by political motivations than by a genuine commitment to social responsibility. In the fast fashion industry, this theory can be observed when companies engage in lobbying efforts to influence policies related to labor standards and environmental regulations. The main goal is to minimize political risks and gain political support. A similar logic is also applied to the decision to comply with tax. Companies are well aware that aggressive tax evasion or evasion can attract attention, potentially causing reputational damage. The perception of a company's ethical and social responsibility, an important aspect of political cost theory, greatly influences the decision-making process. Therefore, companies often choose tax strategies that are in line with broader societal expectations and ethical standards, aiming to avoid negative impacts associated with societal reactions. In this context, companies tend not to engage in direct tax avoidance, considering the legal impacts and large political costs arising from illegal actions. Even though tax regulations in developing countries tend to be weak, public scrutiny of tax cases is currently very high. Thus, law enforcement and sanctions will be stronger with community pressure. Relationships with governments and lobbying efforts can also shape a company's approach to taxation. Companies with significant political influence may see an opportunity to navigate the political landscape and engage in tax planning strategies that suit their interests. However, these strategies have inherent risks, as changes in public perception or government attitudes can significantly increase the political impact associated with such actions. Thus, based on political cost theory, although not based on sincerity, companies will not use CSR as a strategy to reduce taxes.

However, we cannot ignore its supporters who argue that CSR manifests companies' sincere commitment to fulfilling their responsibilities towards society and the environment. In this view, CSR is considered a company's earnest efforts to positively contribute to the welfare of the communities in which they operate and reduce their environmental footprint. This perspective emphasizes the moral and ethical dimensions of CSR, emphasizing its intrinsic value beyond the profit motive so that taxes are not the most critical consideration factor in the business operations of the fast fashion industry.

CONCLUSION

In conclusion, the fast fashion industry faces an imperative need for Corporate Social Responsibility (CSR) to mitigate its negative environmental and social consequences. Developing and developed countries' economic, social, and regulatory factors drive different motivations for fast fashion. Consumer demand, ethical considerations, regulations, and competition exert varying pressures on the industry, while cost-effectiveness remains the primary driver. The need for corporate social responsibility in developing countries stems from governance deficits that persist as a result of feeble,

corrupt, or under-resourced governments. Compensating for deficiencies in public service delivery, CSR initiatives in these regions can address pressing social needs. CSR engagement by fast fashion companies is primarily driven by stakeholder activism, consumer awareness, and pressure from shareholders. The increasing demand for ethical fashion has prompted a shift in industry practices, bringing them in line with societal expectations and ethical norms. However, barriers to widespread CSR adoption continue to exist. The relentless pursuit of cost-effectiveness constitutes a formidable obstacle, diverting resources from CSR initiatives. In developing countries, weak regulatory frameworks and enforcement mechanisms provide little incentive for voluntary CSR engagement. In addition, the intricate relationship between CSR and taxation lends nuance to the discussion. Four theories—Shareholder Theory, Stakeholder Theories, Legitimacy-Based Theory, and Political Cost Theory—illustrate the complexities of CSR and taxation for businesses. In the midst of these debates, CSR can be viewed as both a strategic necessity and moral obligation. While maximizing profits remains a primary objective, businesses increasingly recognize the need to strike a balance between financial interests and ethical responsibility. The future of the fast fashion industry depends on its ability to integrate profit-driven goals with broader societal and environmental concerns, thereby assuring a sustainable and accountable path forward.

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9 CARBON TAX AS A CLIMATE CHANGE ABATEMENT STRATEGY: DRIVERS AND HURDLES FOR SUSTAINABLE

Sifa Arsyanda

Abstract

Climate change has continuously gained importance, and it is deemed the main threat to the survival and continuance of the human race. As a result, climate change must be acknowledged, handled, and resolved collectively. Its far-reaching consequences will leave no aspect of life as we know it unscathed, and the rate of degradation is increasing rapidly. As a result, governments, international organizations, and society as a whole must figure out how to limit Greenhouse Gas (GHG) emissions into the atmosphere. With the straightforward objective of encouraging entrepreneurs to invest in sustainable energy sources, government adoption of a carbon tax is hard to avoid. However, this argument is debatable even proponents of such a policy vary on how it should be implemented. Notwithstanding its success in some countries, its failure in others has shown that this issue has to be properly comprehensively examined, with actual concerns and critiques addressed. In order to be effective, a carbon tax is believed to be set at a level that would both induce corporate polluters to switch to greener practices and allow them to continue operating profitably in the future and to gain double dividend. However, in several debates, whether the administrative cost and expenses will be worth the benefits is must be considered. This study uses a literature review to examine the implication of carbon tax policy in certain countries as the major research subject. The study intends to fill research gaps in the area of policy analysis.

Keywords: *Carbon Tax, Climate Change, Greenhouse Gas (GHG) emissions, Sustainable Entrepreneurs*

S. Arsyanda
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

Human activity is creating a rise in global temperatures and climate change by accumulating greenhouse gases (GHGs) such as carbon dioxide (CO2) (IPCC, 2013). Huge amounts of carbon dioxide (CO2) and other greenhouse gases, such as methane, nitrous oxide, and chlorofluorocarbons, have been emitted into the atmosphere by human activity ever since the beginning of the Industrial Revolution (Frisken, 1971). Starting with the 2.0 industrial revolution, which introduced mass industry, the amount of greenhouse gases produced by the combustion of fossil fuels has been rising yearly (Yoro, 2020). More to this, the unequal allocation of energy demands to renewable energy sources has led to increasing energy consumption patterns in the period of industrial revolution 4.0 (Elheddad et al., 2021). The urgency of climate change has grown progressively, and it is now considered the main threat to the existence and continuance of the human race. As a result, lowering greenhouse gas emissions into the atmosphere is a challenge that must be addressed by governments, global organizations, and society as a whole, both globally and regionally.

On the global level, in December 2015, 196 parties signed a legally binding international convention on climate change in Paris, France. The objective of the Paris Agreement is to keep temperature rise to 1.5-2o C over pre-industrial levels (UNFCCC, 2015). Other global projects include the Network for Greening the Financial System (NGFS), a group of 114 central banks and financial regulators working to speed up the expansion of green financing. Regional climate change strategies include the EU's creation of a green taxonomy to enhance money flow towards sustainable sectors. In addition, the EU intends to establish a Carbon Border Adjusted Tax Mechanism, which will equalize the carbon pricing of local and imported goods. Individual nations and jurisdictions have different carbon-energy policies to satisfy their climate change targets under the Paris Agreement. A carbon tax is one of these climate-energy initiatives. A carbon tax aims to increase the price of fuel and promote the use of lower-carbon fuels by taxing the carbon content of fossil fuels (Parry, 2019).

Implementation of a carbon tax is one of numerous policy variants undertaken by Kyoto Protocol signatory nations. The Kyoto Protocol, often known as the Climate Change Convention, requires developed countries to commit to reducing greenhouse gas emissions (Djalante, 2018). The main concepts of the Kyoto Protocol are intended to lower greenhouse gas pollution by emerging nations, as well as the right to grant credit for reduced emissions, quota exchanges, and overseas reimbursement (Sindico, 2011). There are several schemes to reduce emissions, including trading in carbon credits, implementing greener production methods, and joint implementation (Grubb et al., 2018). The application of a carbon tax is used to alter individual energy consumption behavior, which contributes significantly to the emission of greenhouse gases into the atmosphere. It has been proven by several studies that carbon tax can

reduce the amount of greenhouse emissions (Nordhaus, 2006; Di Cosmo & Hyland, 2013; Wei, 2015; Dissanayake, 2020).

Several countries implement carbon taxes, and they demonstrate a tendency to reduce greenhouse gas emissions. Finland was the first country to adopt carbon fees to combat climate change in January 1990. Finland may systematically achieve 80–95 percent reduction in greenhouse gas emissions by 2050 according to targets set by the European Union (Aslani et al., 2013a). Northern European countries such as Norway, Sweden, Denmark, Estonia, and Iceland have enacted or intend to introduce carbon taxes. Furthermore, as the world's sixth-largest producer of greenhouse gases, Japan is enacting a carbon tax to cut carbon emissions by 26% by 2030 (Ritchie, H & Roser, 2018). This move made Japan the first nation in Asia to enact a carbon tax by incorporating the principles of Finland, the Netherlands, Norway, and Sweden (Gokhale, 2021). British Columbia approved the Carbon tax Act in 2008, making it the first region in North America to levy a carbon tax. In early 2010, South Africa, Mexico, and later Chile and India agreed and implemented carbon taxes on the developing market to meet climate policy objectives.

Moreover, a carbon tax could have a variety of economic implications through market mechanisms, such as tax income and the recycling of such revenue (Vandyck et al., 2016). It has been predicted that more than USD 28.3 billion in "carbon revenues" is collected yearly by governments in 40 different nations and 16 more state or provincial governments (Carl & Fedor, 2016). Approximately 36% of these funds have been given back to company or individual taxpayers in the form of tax cuts or direct rebates. While 27% and 26%, respectively, have gone to state general budgets or have been utilized to pay “green" investments in renewable energy or energy efficiency. According to Ireland's experience, the implementation of a carbon tax resulted in a considerable reduction in carbon emissions while also producing tax revenue for the nation (Cosmo, 2013).

In spite of this and the potential carbon taxes have in abatement greenhouse gas emissions, governments all over the globe have had trouble enacting a carbon tax that is technically correct, politically feasible, and organizationally workable. Carbon taxes have been resisted by several individuals and organizations. Even proponents of such a policy disagree on how it should be implemented since the subject is so complicated. Even while it has been successful in some nations, its failure in others has shown that this issue has to be carefully and thoroughly discussed. Theoretically, if the costs of a programme are concentrated within a smaller group that is highly motivated to actively oppose the initiative, there is a larger likelihood that the policy will fail than one that may generally benefit society (Olson, 1971). Businesses or industries that generate fossil fuels like coal and oil are one example of these groupings in the context of carbon pricing. Despite having widespread governmental, voter, and industry support for the tax as well as an electrical grid mostly powered by hydropower and carbon-free energy, even successful implementors of the carbon tax,

like the British Columbia government in Canada, encountered difficulties in adopting the tax (Tsung-Sheng, 2018).

This study uses a literature review to examine the implication of carbon tax policy in certain developed and developing countries as the major research subject. The basis for this review of the empirical literature is the growing evidence that carbon prices are being introduced in an increasing number of countries. The main aim of this study is to determine the applicability of carbon taxation for sustainable firms in certain countries by considering some impact factors frequently researched in the literature.

The Impacts of Carbon Tax on Competitiveness and Carbon Leakage

Carbon tax is one of the most effective and efficient methods governments and corporations use to combat climate change. Although the implementation of a carbon tax might encourage investment in innovation and modernization, resulting in competitive benefits and economic advantages, a prevalent fear is that carbon tax might jeopardize corporate competitiveness. Furthermore, because global carbon taxes have yet to be implemented, enterprises operating in nations with a carbon tax might lose revenue, earnings, or market share to competitors who do not have to take carbon taxes, and ultimately, the closure of plants. This unforeseen implication of carbon tax schemes might cause "carbon leakage," in which carbon-intensive industry investments, operations, and associated GHG emissions are relocated from carbon-limited markets to less restrictive ones. Competitiveness and carbon leakage issues need to be resolved immediately since they might jeopardise carbon tax policies' effectiveness and environmental goals.

A company would be at a disadvantage relative to its rivals who do not have to shoulder the same burden if it had to pay abatement charges or a carbon tax. As carbon tax costs are transferred down the value chain as higher energy tariffs, higher material prices, and more expensive services, other businesses in the same sector may suffer indirect effects. To combat this, businesses might adapt their operations to use less energy and emissions, reduce costs, or use other cutting-edge strategies to maintain their competitiveness (Ellis et al., 2019).

Numerous considerations, such as accessibility to product markets, low-cost inputs like energy prices, building costs for new facilities, transportation costs to important markets, currency rate fluctuations, labor costs, and systemic business risks, have an impact on production and investment decisions. A carbon tax is one of these elements, although there is little proof that a carbon tax determines whether a firm succeeds or fails. For example, according to statistics from the United Kingdom production census, the implementation of a carbon tax had a positive effect on energy intensity but no discernible negative impact on economic performance or plant closure. Moreover, Two research' conclusions, summarised by OECD (1997a), show only a weak link between environmental rules and business profitability. One of these studies found that companies can maintain high levels of competitiveness despite

high carbon tax and/or other regulatory costs as older, less efficient production capacity is retired, and the construction of newer, cleaner plants is accelerated as part of the dynamic response of the company or the industry to the tax.

India is a jurisdiction where there is little effect on businesses' ability to compete. India only implements implicit carbon pricing through a clean environmental cess on coal and an excise tax on fuel and diesel. In a simulation of an explicit carbon tax ranging from USD4/tCO2e to USD15/tCO2e, Goldar and Bhalla (2015) discovered that even with the ensuing cost rise, only 2-3% of manufacturing businesses in India would see a decline in exports due to a loss of competitiveness. In a further study, Goldar et al. (2017) examined the performance of Indian manufacturing companies between 2009 and 2012 and discovered an inverse relationship between emission intensity and export volumes. The sector decreased the intensity of CO2 emissions by 11% throughout this time. They came to the conclusion that internalizing the cost of GHG emissions would not cause a decline in competitiveness.

Rivers and Schaufele (2014), in terms of gross exports, show that the British Columbia carbon tax does not influence the agriculture sector's competitiveness. Similar to this, Martin et al. (2014) discovered that the UK's carbon tax has no significant impact on competitiveness. Furthermore, Dussaux (2020), using figures from 8,000 companies representative of manufacturing industries in France for the years 2014 to 2018 with regression analysis, demonstrates that rising the price of energy and carbon taxes reduced energy use and carbon emissions without affecting industry-level net employment. Production and employees, however, were transitioned from energy-intensive to energy-efficient firms.

Some other research has found that carbon tax has a job-shifting impact. Carbone et al. (2020) claim that Columbia's carbon tax led to a transition in employment from carbon-intensive industries towards less carbon-intensive ones. Azevedo et al. (2018) discovered that the carbon tax of British Columbia had different industry-specific effects, demonstrating that employment was shifted from bigger energy-intensive and trade-exposed companies to small service enterprises. Moreover, an analysis by Yamazaki (2017) found a drop in employment in emission-intensive and trade-intensive companies while increasing employment in environmentally conscious and domestic industries.

Based on Peñasco et al.'s (2021) systematic examination of 10 decarbonization policy tools, 59% of 40 publications analyzing energy taxes (27 of which are about carbon taxes) indicate neutral effects or positive ones on competitiveness. As a result, there are no systematic differences between carbon and gasoline taxes. Furthermore, they demonstrate that the design of policy instruments, particularly the employment of recycling mechanisms and exclusions, is a critical driver of the various outcomes of the assessments covered in the study. Another factor for the varied empirical data might be the difficulty in identifying appropriate competitiveness metrics.

Along with output or exports (Arlinghaus, 2015), job creation, private investments, company, and productivity are frequently employed as indices of competitiveness (Peñasco et al., 2021). Moreover, Arlinghaus (2015) points out that studies showing no adverse impacts of carbon taxes on competitiveness do not allow drawing a general conclusion that carbon taxes do not harm competitiveness, but rather that they do not do so at the existing level and design of the particular carbon taxes under study. Additionally, the research that is now available only addresses short-term consequences, not long-term implications. Furthermore, the study of Aghion et al. (2016) also supports the job-shifting impact that encourages innovation in industries with clean patents.

The Potential of Double Dividend

The double dividend concept combines the financial and environmental aspects of environmental tax and contends that a double dividend could be predicted by utilizing environmental tax revenue to reduce unfair taxes, such as those on labor (Pearce, 1991; Goulder, 1995, 2000, 2013; Bovenberg & Goulder, 1997). Achieving a certain environmental target will yield a first dividend, and advantageous macroeconomic effects will yield a second dividend.

According to a recent analysis by Freire-González (2018), a mere 55% of environmental tax reform simulations included in the review—of which about three-quarters utilize carbon taxes and one-fourth utilize energy taxes—result in a double dividend. The study covered 40 studies that delivered 69 simulations of environmental tax reforms performed with CGE models from 1993 to 2016. The recycling instrument employed in simulations is essential to attaining a double dividend. A double dividend is produced in nine scenarios when social security contributions are reduced. Additionally, reducing capital taxes, labor income taxes, and other taxes almost always results in a double dividend, but lump-sum transfers only do so in 10% of simulations. According to Calderón et al. (2016), a direct transfer of lump-sum carbon income to consumers would impact between -2% and -3% of GDP.

More to this, a meta-regression study of 33 experiment simulations with a total of 146 simulations investigating the employment double dividend hypothesis was done by Maxim et al. (2019). A key result is that the ideal policy mix varies across European and non-European nations, needing policy design for specific regions. Policies on taxes and recycling are also significant predictors of an employment double dividend. Similar to Murray and Rivers' (2015) study, Yamazaki (2017) indicates that the British Columbia carbon tax recycling initiatives had a beneficial impact on employment. This supports the double dividend concept.

Ultimately, it should be noted that carbon taxes will have less long-term potential to support tax reductions or recycling initiatives related to environmental tax changes. Successful and considerable emissions reduction, as envisioned in the

current global and regional climate accords and pledges, will greatly reduce the prospective tax base and, consequently, the tax's ability to raise income.

The Impacts of Carbon Tax on Innovations

The Porter and Linde (1995) stated hypotheses that strict environmental regulations would promote innovation, which in turn might increase competitiveness. According to Bruvoll and Larsen (2004), the Norwegian carbon tax, which contributed 1% to the (small) overall CO2 emissions decrease of 2.3%, led to a transfer in heating fuel from fossil fuel to electricity for the years 1990 to 1999. Aghion et al. (2016) discover that fuel costs with greater tax inclusion drive automotive sector initiatives for clean patents (e.g., electric and hybrid) throughout many decades, using firm-level panel data for 80 nations. It should be highlighted, however, that empirical evidence reveals that, in order to promote innovation, the carbon tax should be quite high, with a realistic future route for a high and steady carbon tax (Laing et al., 2013). Furthermore, empirical evidence by Veugelers (2012) implies that including carbon taxes within a larger policy mix increases their power in terms of innovation.

Lilliestam et al. (2021) examine the Nordic countries, New Zealand, EU, British Columbia to determine the efficacy of carbon tax in fostering innovation and dissemination of novel technologies necessary for comprehensive decarbonization. They claim that there is currently no compelling empirical data indicating that carbon tax has a sufficient influence on the required technical transformation. However, it should be highlighted that the analysis focuses mostly on the innovative impacts of emissions trading, with just a limited number of reviews directly assessing the effect of carbon taxes on technological development and innovation.

Finally, an increasing number of businesses are using internal carbon taxes to help them being competitive. For instance, Microsoft imposes a carbon fee on its internal company units, collecting the money in a fund that could be used to finance further investments in energy efficacy, the introduction of new product lines that will assist the business obtain market share over competitors. When analysing big investment choices, Royal DSM, a Dutch health, materials, and nutrition corporation, implements a 50€/ton internal carbon tax. This helps to "future proof" the firm by identifying energy-saving options early on while boosting awareness inside the organization.

Environmental Impacts of Carbon Tax

Sairinen (2012) reports for Finland that a government working committee on environmental taxes discovered that carbon and energy pricing resulted in a 7% drop in CO2 emissions from 1990 until 1998. According to Mideksa (2021), compared to a scenario where there is no carbon tax, the Finland's carbon tax reduces CO2 emissions by 16%, 25%, and 31% in 1995, 2000, and 2005, respectively.

Brännlund et al. (2014) investigate the carbon footprint of Swedish industry at the company level from 1990 to 2004, discovering a decline in each of the analyzed industrial areas, implying a decoupling of productivity growth and CO2 emissions, primarily due to the Swedish carbon tax. According to Andersson (2019), the carbon tax of Swedia decreased CO2 emissions in the transportation sector by 6% on average from 1990 until 2005. A study by Runst and Thonipara (2020) shows that raising the Swedish carbon tax rate from around 40€ to 100€/ tonne of CO2 emissions from 2001 to 2004 significantly reduced emissions using several econometric methodologies. One important finding is that the magnitude of the carbon tax has a significant impact on its efficacy.

The efficiency of carbon taxes in other European nations has received less attention than in Scandinavia. Martin et al. (2014) report that in the United Kingdom, the Climate Change Levy reduced CO2 emissions by 8.4%, energy footprint by 18.1%, and electricity usage by 22.6% between 1999 and 2004. According to Dussaux (2020), There is 1%-5% decrease in carbon tax in France between 2014 and 2018. According to Ecoplan (2017), the Swiss carbon tax reduced CO2 emissions by 6.9 million tonnes (4.4% of combustion emissions) between 2008 and 2015.

Aydin and Esen (2018) indicate that energy and transport taxes in 15 EU nations were able to considerably cut emissions when they were over-specified levels from 1995 to 2013, supporting Runst and Thonipara's (2020) conclusion for Sweden. Kohlscheen et al. (2021) find that increasing the carbon tax rate by $10/ton of CO2 emissions decreases CO2 emissions by 1.3% in the short run and 4.6% in the long run for 121 nations with a sample period between 1978 and 2016.

The majority of the research analyzed attempts to determine the effects of a carbon tax on CO2 emissions, either nationally or in particular industries. The influence of carbon taxes on the amount of emissions per capita, as well as their growth rates, is thus analyzed. Several studies concentrate on other ecologically relevant factors, such as petrol or natural gas usage or savings in energy.

According to Edenhofer et al. (2021), the majority of fossil fuel-related taxes in the world are far smaller than the marginal societal costs of carbon. According to model simulations, only a small number of nations have implemented carbon taxes that are high enough to achieve the Paris Agreement's objectives (USD 40 to 80 per tonne of CO2 emissions in 2020, rising to USD 50 to 100 by 2030) (Klenert et al., 2018).

The Impacts of Carbon Tax on Macroeconomic

Elgie and McClay (2013) and Metcalf (2019) both agree with Murray and River (2015) that the British Columbia carbon tax had no discernible effects on economic growth. While Bernard et al. (2018) report growth in total employment of 4.5% from 2008 to 2016, Azevedo et al. (2018) do not discover an impact on aggregate employment. Meanwhile, according to Andersen et al. (2007), long-term yearly GDP growth in Denmark, Finland, and Sweden ranges between 0.4% and 0.5%, but it slightly decreases in Slovenia and the UK.

Without additional in-depth research, it can be challenging to pinpoint the causes of the positive or at least no impacts on macroeconomic performance due to differences in the specific design of carbon tax among countries (e.g., regarding revenue utilization, exemptions for specific sectors, level and long-term plan of tax rates). However, the calculations in Andersen and Ekins (2009) and the research looking at the British Columbia revenue-neutral carbon tax imply that revenue recycling by lowering social security payments and the income tax is at least one important element.

This is also supported by Octavio et al. (2016) research, which stated that positive effects on GDP, consumption, and employment were found to be feasible even at relatively high carbon tax rates, provided that tax revenues were fully recycled and renewable energy replaced the majority of fossil fuels in the global power mix. Without income recycling, the cumulative cost of 2050's carbon reduction objectives might reach 9% of GDP.

Metcalf & Stock's (2020b) examination of the effects of carbon taxes in 15 EU member states revealed no negative effects on employment or GDP growth. The researchers came to the following conclusion: "[...]" we find no substantial evidence of a detrimental impact of taxes on employment or GDP growth. We find no proof, at least based on the experience of Europe, to support the idea that carbon taxes kill employment and economic development. Carbon pricing has been implemented by certain nations as part of a package of measures to cut emissions while encouraging economic growth. Sweden, for example, has the world's highest carbon price, but its industrial sector and GDP have grown while absolute GHG emissions have declined.

Carbon Tax Failures

Despite the success of carbon taxes in some countries in reducing environmental impacts, their failure in others means that this issue must be analyzed carefully and thoroughly. Scope failure happens when it is hard to quantify or price GHG emissions (such as GHG emissions that are no longer present, flux emissions associated with land use management, and pipe leak emissions) and political problems. Failure is possible when the institutional or physical infrastructure necessary for the operation of the various mitigation mechanisms (such as transportation-oriented land use and urban planning) is not in place. Financial funding to encourage modal transitions (Avner & Hallegate, 2014); power grid planning, market design, and transmission investment to support electrification and intermittent renewable energy.

Knowledge spillovers happen when private investors, who, from the perspective of the public, underinvest, are unable to fully reap the rewards of early R&D and commercialization investment in mitigation solutions (Newell, 2010). Failures can also arise when individuals fail to foresee the long-term carbon-price paths decades in advance or when their actions render carbon pricing ineffective. Numerous variables obfuscate data on the GHG footprint of mode selections or

individual investments in application or building efficacy in the personal transportation and housing sectors (Gerarden, 2015).

Addressing these problems requires the development of complementary policy packages. These strategies can help to reduce emissions while also improving the political acceptability of carbon tax by lowering the carbon tax required to meet climate goals. Market failures and political restrictions limit the efficacy and viability of carbon taxes and necessitate complementary regulations (Acemoglu et al., 2011; Fay, 2015; Stern, 2015; Hallegatte et al., 2013)

Market flaws are especially prevalent in developing nations, affecting the balance of pricing and non-pricing tools (Avner et al., 2014). Carbon tax signals may be drowned out by a number of contradicting signals and incentives in the context of imperfect markets, informal trades, inadequate regulatory enforcement, institutional instability, and rapidly developing infrastructures influencing access to information and forecast stability. In other nations, for example, energy markets do not dispatch power-generating alternatives based on cost. In this situation, a carbon tax, while lowering the relative cost of renewables, would not necessarily result in a decrease in the usage of fossil fuels. All of the aforementioned factors may push policymakers, particularly in low-income and weak-institution situations, to choose simpler to deploy and enforce non-price instruments, at least in the near term.

The political economy of carbon tax is influenced by social and political factors that vary across nations, including income levels, the prevalence of poverty, the agreement on how efforts should be distributed over time, and the capacity of the government to safeguard and support vulnerable populations and industries during the transition. Due to the numerous market and government failures, externalities, and behavioral biases, climate mitigation will require a variety of tools in all nations, including the carbon tax, innovation policies, laws, performance guidelines, specific subsidies, and education and instruction. The balance of these instruments will be determined by the local political economy as well as their social and political acceptability. Some nations, particularly those with low incomes, would have a smaller explicit carbon tax since that is what is doable and may be forced to do more via other means.

Policymakers can take into account complementary policies to ease the shift for negatively impacted companies, sectors, and regions, such as tax incentives for low-carbon investments, such as accelerated depreciation, feed-in tariffs, production or investment tax credits, R&D tax credits, and financial assistance for small businesses. These involve allocating carbon funds to local economic development and providing assistance to firms and industries that compete on a global scale.

These dynamics are demonstrated by 2°C scheme prepared for the Canadian DDPP (Bataille et al., 2015) to restrict GHG emissions to 1.7 tonnes CO2 per capita by 2050. To achieve the same goals, these schemes either utilize a single carbon tax or a combination of carbon pricing and complementary policies. Also, South Africa's proposed carbon tax has tax-free levels of up to 90% for EITE industries. Although

these tax-free limits will ultimately be phased down to prevent undermining the carbon policy by weakening the pricing signal, they may give businesses crucial time to shift to new business models. Moreover, carbon leakage might be addressed by a carbon border tax, which is a charge on emissions ascribed to imported commodities that have not been carbon-taxed at source - a financial mechanism that the EU aims to introduce in the coming years.

CONCLUSION

Carbon tax could stimulate innovation, enabling businesses to stay competitive – even though there are no conclusive pictures of how carbon taxes impact the competitiveness of businesses. However, it may be said that disadvantages brought on by the additional costs of the carbon tax can be overcome, particularly when businesses have a long-term perspective on the carbon tax and engage in complementary policies. Carbon taxes have the potential to significantly lower carbon emissions or, at the very least, slow their rise without having any negative effects on employment or economic growth. Even carbon tax rates should be applied at an appropriate high level to stimulate emissions reduction and innovation. The utilization of income from the carbon price is essential to obtaining a double dividend, which consists of environmental efficacy and economic advantages. Recycling revenue through lower social security contributions and taxes on labor income is typically linked with a double dividend, as opposed to lump-sum transfer. Recycling revenue is crucial to both gaining the public's support and acceptance, also reducing unfavourable distributional impacts. There is suggestion that recycling schemes should be developed in a way that encourages employment and innovation. Moreover, complementary policy packages must be developed in order to avert problems associated with implementating of carbon taxes. However, any particular policy reform must consider the country in the issue's overall socioeconomic situation, political environment, system bounds, and policymaking traditions.

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10 SUSTAINABLE SUPPLY CHAIN: HOW MIS CAN HELP ASSESS AND ACHIEVE EFFICIENCY AND EFFECTIVENESS FOR

Hanifa Maulani Ramadhan and Vieri Ahmad Haidir

Abstract

Various explanations and ideas of Supply Chains (SC) and Supply Chain Management (SCM) have emerged owing to the rise in global sourcing since the 1980s. Manufacturers agree that a solid Supply Chain and efficient resource allocation are crucial after the COVID-19 pandemic. Consumers and producers are more aware of their products' environmental implications. The environment and society are threatened by population growth and economic activity. Circular Economy (CE) concepts like logistics, vendor management, and resource mapping can boost an organization's performance. The relationship between CE and SCM can be understood in several ways, one of which is Sustainable Supply Chain Management (SSCM). SSCM adds social and environmental factors to supply chain procedures, increasing a company's long-term success. Before utilizing SSCM, focus organizations must create an effective information process method to address supply chain uncertainty, hazards, and information-sharing questions. Digitization and circular development can give manufacturers long-term benefits. Information Digital and Technology (IDT) was first used in supply chain management with EDI, ERP, and computer-aided technologies. AI, IoT, BDA, Cloud, and Blockchain Technology (BT) have gained traction as IDT that could improve SSCM today. Environmental challenges that may affect human cultures and well-being are significant concerns as Food Supply Chains (FSC) expand to satisfy seasonal food demand, sustainability, and safety. As a result, the meaning of SSCM has emerged in recent years to address the growing concern over sustainability in the FSC. FSC was made more sustainable by measures such as the use of technology, improved resource effectiveness, staff education, and a better knowledge of customer demand.

Keywords: *Supply Chains, Supply Chain Management, Sustainable Supply Chain Management, Circular Economy, Information Digital and Technology, and Food Supply Chains.*

H. M. Ramadhan · V. A. Haidir
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
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INTRODUCTION

The word "Supply Chain (SC)" can be defined as the flow of transport and storage of raw materials, commodities, items, etc., starting from manufacturing (Producer) to consumption (Consumer) (Kuwornu et al., 2023). Additionally, Supply Chain Management (SCM) is the management of the movement of products and services among the numerous participants in the supply chain, such as manufacturers, producers, wholesalers, retailers, and distributors from the point of production through storage transit and processing (Ortiz-Gonzalo et al., 2021). SCM is more than just the sum of its historical, foundational principles of procurement, operations, and logistics. Integration of information, product/materials, and financial flows across organizational boundaries is at the heart of supply chain management. Profits may be maximized because of utilizing Supply Chain Management by coordinating these three processes. When these three processes are streamlined and coordinated, businesses may save time and money.

Since the 1980s, when global sourcing first began to gain popularity, multiple meanings and conceptualizations of SC and SCM have emerged (De Angelis, et al., 2018). Since then, there have been several instances of heated debates over the fundamental elements of this supply chain description, the network's building pieces (Stevenson, 2007). While decreasing costs and increasing throughput are undeniably the supply chain's top priorities, there are numerous other vital objectives as well (Alamelu et al, 2023). Given the interwoven nature of the current ecological, economic, and social challenges, it is no longer sufficient to simply aim for strong, lean, or flexible supply chains (Alamelu et al., 2023).

Manufacturers have a shared understanding because of the significance of establishing a reliable Supply Chain and efficiently allocating resources in the wake of the COVID-19 outbreak (Sarkis, 2020). There has been an increase in both producers' and consumers' awareness of the environmental impacts of their products and services (Gruzauskas, Baskutis, & Navickas, 2018). The pressure from customers and the market on manufacturers is growing to adopt Sustainable Supply Chain Management (SSCM) (Carter & Easton, 2008; Seuring & Müller, 2008) in order to maximize short-term profits without compromising long-term sustainability or exploiting the resources of future generations.

Sustainability on all fronts: economic, social, and environmental are the three pillars on which SSCM is based, as stated by Mastos and Gotzamani (2022). Economic, environmental, operational, and social metrics must all be tracked to ensure a supply chain is operating sustainably (Baliga et al., 2019). SSCM methods still influence Supply chain planning (SCP) in developing nations (Kuwornu et al, 2023). Increasing market share and earnings may be possible using SSCM procedures (Kuwornu et al, 2023). Companies can profit financially from SSCM practices, but they can also help them meet their social and environmental obligations and other stakeholder needs (Hong et al., 2018).

Population growth and increased economic activity are major threats to the environment and society (Abbas, 2019). Investors are increasingly worried about whether or not company owners are living up to their responsibility to run their companies in a way that benefits society, the environment, and the economy in the long run (Abbas, 2019). Given its importance to sustainability in both established and emerging countries, the Circular Economy (CE) is worth further exploring (Dantas et al., 2022). A restorative or regenerative industrial economy is what the Ellen MacArthur Foundation (2013) calls a Circular Economy (CE). In addition, the European Commission (2015) defined CE as the practice of maximizing the amount of time over which the value of a product or material remains unchanged, hence reducing waste and optimizing resource utilization.

According to the Circular Economy (CE) viewpoint, improving an organization's performance may be accomplished through the use of Circular Economy ideas, including logistics, vendor management, and resource mapping (Alamelu et al., 2023). Another link between CE and SCM is that both are highly reliant on tactics for conducting successful companies that work well (Del Giudice, 2021). At the core of the circular economic model is an emphasis on resource conservation and an efficient transition movement from a linear to a circular chain of stakeholders, further highlighting the importance of circular supply chains (Alamelu et al., 2023). To increase resource efficiency, reduce waste, and preserve energy and production, businesses may take advantage of CE's emphasis on operational responsibility, which allows them to reform and restructure their processes (including SCM) (Jabbour et al, 2019). This boosts an organization's competitive edge and potential for expansion (Manavalan, 2019).

Sustainable Supply Chain Management (SSCM) is one possible interpretation of the connection between CE and SCM. Integrating social and environmental considerations into supply chain processes, SSCM increases the likelihood of a company's long-term success (Alamelu et al., 2023). These measures may boost a company's competitive edge and overall performance by boosting the process of adding value to raw resources and finished items, minimizing trash and carbon output, and maintaining energy. Since the sustainable supply chain is assumed to be consistent with sustainable aims, it is believed to regulate the link between the actions of developing nation entrepreneurs and sustainable organization performance.

According to Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety (2017). To implement SSCM, a corporation must complete the following seven processes.

1. **Making a map of the supply chain**

   Supply chain mapping and visualization aid in providing an initial overview of the company's primary upstream value-creating operations. The supply chain's connections to other supply chain activities and/or suppliers' activities can be better communicated by depicting them visually. It also provides a foundation for detecting risks related to sustainability consequences

in subsequent process phases and for planning and executing targeted enhancements.

The crux of this process is gathering data from within the organization in preparation for a materiality assessment. The whole supply chain, not only the first providers, has to be depicted sequentially and augmented with data on their operations and providers. This is the first stage in the process, where you'll begin looking for effects and threats to sustainability. Through the use of an impact chain, a company may better comprehend the connection between sustainable outcomes and supply chain activities.

2. **Identifying important sustainability impacts, evaluating risks, and deciding where to take action**

Considerations of sustainability are made for each step of the SC. Knowledge of the value chain's direct and indirect suppliers, their activities, and the sustainability factors relevant to each is essential for assessing the firm's current and potential effects on the environment, its stakeholders, and the company itself. This phase of the process isn't concerned with making an exact numerical determination, but rather making a broad evaluation of the process's effects on and contributions to sustainability.

Possibilities of unfavorable outcomes for both humans and the natural world, as well as internal threats to the company, are evaluated and prioritized considering the study and evaluation of sustainability elements and impacts (liability, reputation, etc.). The company "translates" its understanding of the risks and consequences of sustainability into questions about which sustainability issues and areas of action are pertinent to optimizing and developing a sustainable supply chain. For the firm to make the most of its limited human and financial resources, it must focus on certain sustainability subjects and fields of action.

3. **Identifying gaps and coming up with solutions**

The organization should document the objectives, procedures, and processes that may be implemented or modified as part of SSCM using data from the materiality analysis. Once impacts are gathered, and relevant sustainability themes and action areas are identified, the business may determine what it needs to do to improve its supply chain by considering sustainability.

The real scenario must be documented in two stages: The first option is to consult the company's written materials, such as its policies and procedures, flowcharts, target definitions, codes of conduct, and audit findings for environmental management. Then it can look for ways to communicate directly with employees working in other departments. By contrasting with one another, we may learn more about our coworkers' methods, potential preliminary work, and beginning points. In addition, colleagues can learn more about sustainability's value in the supply chain because of the conversation.

Company supply chain management actions need a positive target scenario to enhance the current circumstances specified in the preceding procedural step. From codified principles, such as crafting a mission statement for environmentally responsible supply chain management, the desired outcome may be deduced. The supply chain management's long-term objectives and the importance of sustainability in the supply chain are defined in the company's mission statement. The mission statement is used as a reference point for the company's management, employees, and suppliers.

4. **Adjusting internal structures and processes**

The findings of the significance evaluation and data collection for inventory are used to establish or modify the company's new and current business processes. Only by allocating enough internal resources (financial, human, and technological) can a supply chain be made sustainable. Competent workers and available resources are required to accomplish goals and execute actions inside the organization. This is a common difficulty, especially for businesses with fewer resources. After all, few of them can afford to have a dedicated sustainability officer or perhaps an entire sustainability division.

Building on the firm infrastructure and increasingly relying on criteria for sustainable supply chain management is crucial to a smooth and successful rollout. Enhanced communication between divisions and workers can emerge if supply chain management is geared toward problems with the environment. Companies should encourage internal communication and, with input from affected employees, establish appropriate policies and roles.

5. **Developing requirements for suppliers and ensuring that they are adhered to**

At this stage, the firm creates its code of ethics. The code of conduct (sometimes known as a "supplier code of conduct") is the document that specifies all rules and regulations for both main sources of supply and subsidiary vendors. It provides a tangible link between the company's internal goals and the conduct it expects from its direct suppliers and, where applicable, subsuppliers. Also, if everyone agrees, it serves as the foundation upon which the business may take collective action, assess its performance, and make plans for the future. As such, establishing a code of conduct is the very first and most essential step a business can take.

The code of conduct should make reference to applicable rules and regulations established at the national level of production as well as to more broad international standards and norms. This is highly recommended for two main reasons: first, it eliminates the need to develop any new standards, since many industries' and product categories' norms would already have been established at the worldwide level. Instead, then having to adapt to diverse standards from company to firm, suppliers should face standard ones. Supplier

requirement formulation is made easier with the use of norms adopted on a global scale, especially in industry and differences between products.

The code of conduct conveys the expectations to direct suppliers and solicits an honest evaluation of the supplier's ability to put them into practice. The findings contribute to more traditional vendor analysis. When a partnership with a provider is created or renewed, guidelines for behavior are included in the agreement with the supplier and become legally obligatory on both the prime contractor and any subcontractors.

6. **Evaluating the sustainability performance of suppliers and building competencies**

Where there is the potential for severe harm and the likelihood of it occurring, it is essential to take precautions for evaluation. On the other hand, if the danger is minimal, you may only need information. It's beneficial to integrate several approaches in the long run. Long-term, developing the suppliers is more important than conducting the evaluation alone, therefore doing either will not be adequate.

It is ideal for businesses with several direct and sub-suppliers to implement a step-by-step assessment method. Even if all of a company's dealings with its direct suppliers are conducted in accordance with a code of conduct, it is still important to conduct regular reviews of these dealings and to train employees to critically analyze their own self-evaluations. Due to the high labor and monetary costs required, audits of direct Audits of suppliers and locations should only be performed at those with a higher likelihood of breaking sustainability guidelines. Consideration of the potential of supplier rating databases and other internet resources for industry efforts should also be given by businesses.

A self-assessment is a useful tool for businesses interested in learning more about their suppliers' approaches to mitigating risks that may occur both on-site and in the supply chain's upstream operations. In order to gauge how well they satisfy the needs of the buyer; suppliers fill out a questionnaire. Self-assessments are used by certain businesses for quality management and buying, but these assessments often don't include questions concerning the company's commitment to sustainability. More detailed questions about the environmental effect on society of the supply chain might be included in the questionnaire if necessary. It may include references to the code of conduct and particular dangers.

Supplier self-assessment is advantageous since it allows businesses to immediately gain insight into the supplier's strengths and deficiencies. This allows us to go back to the materiality study findings, add to any future assessments, and update our preferred supplier list as necessary. Current and future suppliers can benefit from the self-assessment by learning what is necessary to achieve sustainable goals. Several web-based tools exist today to

aid businesses and their vendors in the search for a suitable answer. However, it's important to remember that a self-evaluation is only a snapshot based on one's declarations. Consequently, there should be further supplier obligations in addition to regulatory and sustaining procedures.

7. **Reporting**

The organization must report on its sustainable supply chain management operations to keep up with the growing demand for data on supply chain accountability and sustainability threats. Sustainability reports are a common tool for this purpose. For supply chain-related reports, businesses can choose from several established norms and recommendations. The business must ensure the data is useful for its constituents and doesn't leave out any crucial details.

Sustainability reports allow businesses to assess their current key indicators for environmentally responsible supply chain management and modify them if necessary. Measurements of pollution frequency, rate of product rejection, and supplier relationship duration on average are all examples of important existing indicators. However, when it comes time to evaluate the impact on future acts' success, the organization can establish fresh standards. The German Sustainability Code (DNK), the Environmental, Social, and Governance (ESG) KPI Catalogue of the European Federation of Financial Analysts Societies, the Global Reporting Initiative (GRI), and Sustainability Reporting Standards are just a few examples of where this might draw data.

Information Digital and Technology (IDT) for Sustainable Supply Chain Management

Achieving and maintaining sustainability in SSCM requires research into a wide range of topics, including risk management, environmental impact assessment, sustainable product management, and information flow reform (Liu et al., 2023). One common view is that the central firm cares more about the welfare of everyone in its supply chain than it does about making a quick buck (Seuring & Müller, 2008; Carter & Easton, 2008; Pagell & Wu, 2009). Carter and Easton's (2008) paradigm suggests that the most reliable strategy for future success is to prioritize environmental protection, social responsibility, risk mitigation, and supply chain transparency. This can only be accomplished if the upstream (suppliers) and downstream (customers, government, and stakeholders) supply chain components are considered at the same time by the focal company (Gruzauskas et al., 2018). Life Cycle Assessment (LCA) is a tool for analyzing the effects of a product on human health and the environment from its origin through its manufacture, sale, and disposal (Beamon, 2014; Seuring, 2011). To ensure the product's quality and longevity under these conditions, the materials used must be carefully chosen (Liu et al., 2023). Meanwhile, the approved vendors adhere to stringent standards to keep multi-life cycle sustainable development on track (Metta & Badurdeen, 2013).

Before using SSCM, focus organizations must construct an effective information process mechanism to respond to supply chain uncertainty, resist supply chain risks (Busse, Meinlschmidt, & Foerstl, 2017; Chen, Ou-Yang, & Chou), and respond to inquiries about sharing information (Sodhi & Tang, 2019). (Chen & Kitsis, 2017; Gold & Schleper, 2017; Reefke & Sundaram, 2017). The COVID-19 pandemic has created possibilities and threats for SSCM since new technologies are being developed and resources are becoming increasingly scarce (Sarkis, 2020). Long-term, sustainable advantages for manufacturers may be achieved through both digitalization and circular development (Liu et al., 2023). The use of advanced technologies with a scope that extends beyond organizational boundaries and makes use of machine intelligence to make products quicker, less rigid, and greater service reliability is what is meant by "digitizing" the supply chain, also known as "Information and Digital Technologies" (IDT) (Merino et al., 2020; Taddei et al., 2022).

Due to IDT's rapid development, managers can now access effective SSCM tools (Liu et al., 2023). Electronic Data Interchange (EDI), Enterprise Resource Planning (ERP), and computer-aided technologies are all examples of early IDT usage in supply chain management (Gilchrist, 2016; Ghobakhloo, 2020). But these IDTs care about the bottom line, ignoring the company's environmental and societal impact. Progress has been made in implementing cutting-edge IDT, including AI, IoT, BDA, Cloud, and Blockchain Technology (BT), all of which have the potential to improve SSCM in the present day. By analyzing data rapidly, BDA is utilized, for instance, to reduce economic and environmental expenses across the supply chain (Kusiak, 2017). Autonomous cars allow BDA to free up workers and cut emissions by analyzing collected data to find patterns and eliminate or mitigate problems (Gruzauskas et al., 2018). The Internet of Things (IoT) and cloud computing improve communication with stakeholders and keep them updated more quickly (Manavalan & Jayakrishna, 2019; Shee, Miah, Fairfield, & Pujawan, 2018).

One of the most prominent developments in advanced IDT in SSCM is the use of several IDTs working in tandem to improve supply chain performance and efficiency (Koh, Orzes, & Jia, 2019; Merino et al., 2020). Stakeholders may profit from IoT when it is combined with cloud-based data storage and analysis tools, business-driven analytics, and cyber-physical systems (CPS) (Ben-Daya, Hassini, & Bahroun, 2019; Manavalan & Jayakrishna, 2019). The sophisticated IDT is being used in every part of the supply chain's life cycle, which is another growing pattern (Ghobakhloo, 2020; Liu et al., 2020).

Implementation of Advance IDT in the SSCM

Based on Liu et al. (2023), the Implementation of advanced IDT in the SSCM is:

1. **Effective SSCM Procedures using Cloud Computing**

The term "cloud service" refers to a broad category of computing that spans "cloud computing," "service-oriented computing," "edge computing,"

"distributed computing," "high-performance computing," and "quantum computing" (Adamson, Wang, Holm, & Moore, 2017). As a result of having easy access to data stored in the cloud, decision-making processes are streamlined, and managers may cut back on spending on database infrastructure. For instance, in the realms of recycling, reusing, and remanufacturing, the cloud makes it simple to look up data such as the extended useful life of items, the categories of materials they're made from, and the (3R). With this information, designers can refine recycling methods and create superior product materials (Lopes de Sousa Jabbour, Jabbour, Godinho Filho, & Roubaud, 2018) by Constantly checking the status of tasks, Educating one another, and facilitating quick and simple access to data. Cloud services may enhance SCM in economic, environmental, and societal ways, as confirmed by Shee et al. (2018).

2. **Helps make decisions on its own using Artificial Intelligence**

Artificial intelligence enables linked things to respond autonomously to their surroundings, providing a practical answer to the problem of flexible and autonomous production. Autonomous cars are used as a replacement for humans in modern workplaces to do large-scale tasks. This helps to boost output and safeguard workers (Gruzauskas et al., 2018). Artificial intelligence (AI) may aid decision-making tools (DSS) by providing insightful forecasts based on fast-searching algorithms like heuristic and bionic algorithms (Sharma, Kumar, & Park, 2018). Customer preference analysis, for instance, moves away from relying on the analysis of questionnaire responses in favor of using seasonality and marketing data and specialized algorithms (Zaki, Theodoulidis, Shapira, Neely, & Tepel, 2019). Changes in how big data is used in reality both boost AI development and, in turn, progress BDA (Corbett, 2018).

3. **Converts information into knowledge and insight using BDA technology**

Modern computing and instruments for modeling and simulation make it possible to run real-world systems while keeping tabs on digital ones and amassing vast volumes of real-time data (Zaki et al., 2019). Furthermore, the real-time data produced across the supply chain activities may be utilized to assess the overall chain's sustainability (Kahi et al., 2017). By providing empirical validation of near real-time tests, BDA enables recording client behavior that may be at odds with traditional marketing assumptions (Sanders et al., 2019). BDA is utilized in SSCM, much like in sustainable human resource management, to improve process control and foresee circumstances to respond autonomously, hence increasing sustainability capability and boosting performance (Bag et al., 2020). Parameters like expense, CO2 emissions, and capabilities for production & operation planning may be extracted using big data and utilized to train models (Golzer & Fritzsche, 2017). BDA's findings mitigate potential losses in both experiments and capital (Amankwah-Amoah & Adomako,2019).

4. **Blockchain technology protects supply chain data.**

Additional audits and control of obtained data are needed in supply chain partnerships for the sake of reliability in future quality assessments of potential vendors. By utilizing cryptography's immutable blocks, BT proves its worth in ensuring the honesty and openness of SSCM's data by preventing the creation of false reputation records (Esmaeilian et al., 2020). In the area of sustainable supply chain risk management, however, research on the use of BT is few. There are various interconnections between BT and other IDT, and BT heavily relies on other technologies like CC and IT. Customer's personal information may be acquired without their knowledge as smart gadgets become more commonplace. To achieve sustainability and measure sustainable performance, more open data is required. But as process data becomes more open, so are the opportunities for hackers to acquire sensitive information about consumers, vendors, and superiors. BT solves security issues by creating immutable records on a distributed ledger and establishing connections between parties via smart contracts (Zhou et al., 2020). Cyber-attack history data is also required to forestall future instances of corporate espionage and sabotage (Tandon et al., 2020).

5. **IoT connects SSCM's physical and virtual features.**

The Internet of Things (IoT) refers to a network of interconnected computer devices, sensors, and network nodes that boost the efficiency of human decision-making and corporate operations through real-time communication and data sharing (Hughes et al., 2019). By 2020, an estimated 37 million more devices will be linked for usage in this capacity (Gruzauskas et al., 2018). Connecting the digital and physical worlds, IoT revolutionizes supply chains as a network (Boyes et al., 2018). Transmission of data, information, and knowledge is made possible by IoT thanks to data sharing, novel analytical methodologies, and linked, intelligent items (Tao et al., 2014). Humans may benefit from knowledge sharing between businesses thanks to their capacity for learning, cognition, and intuition, which allows them to apply the information gained from one machine to another (Kamble, Gunasekaran, & Gawankar, 2018). The supply chain's ability to monitor and trace items is greatly enhanced by the Internet of Things. Managers, for instance, may swiftly and accurately plan the deployment of autonomous, green-fuelled cars for long-distance distribution in order to cut down on carbon dioxide emissions and the amount of time spent on the road by drivers (Tao et al., 2014).

Sustainable Supply Chain in the Food Industry

The global population is predicted to reach 8.0 billion in the middle of November 2022, up from a figure of 2.5 billion in the middle of the twentieth century (United Nations, 2022). As the global population increases, issues related to food security have taken center stage (Cagliano et al., 2016). Considering this, 60 percent of the projected world food demand will be met by 2050. (Raut et al., 2019). However, shoppers are becoming increasingly picky about where their food comes from, the

techniques used to make it, and whether it harms the environment (León-Bravo et al., 2016).

Safety, sustainability, and environmental issues that may have an effect on human cultures and well-being are growing concerns as the world's food supply chains (FSC) grow to meet rising consumer demand for seasonal food (Mastos & Gotzamani, 2022). As a result, the meaning of sustainable supply chain management (SSCM) has emerged in recent years to address the growing concern over sustainability in the food supply chain (FSC) (Pagell & Shevchenko, 2014). Managing a company's operations in a way that minimizes its influence on the environment or dealing with the environmental damage that results from such operations falls under the SSCM's "environmental domain" (Mastos & Gotzamani, 2022).

The purpose of food supply chain management (FSCM) is to ensure that all stages of the manufacturing of food, distribution, and processes of consumption work together in a way that keeps food of varying types safe and tasty. The food supply chain (FSC) is a series of operations that ensures people always have access to nutritious food, as defined by Perdana et al. (2022). Because of the importance of timely, cost-effective, and high-quality raw material utilization in the food processing business, the SCM is essential (Patel & Deshpande, 2015). The essential significance of FSCM in satisfying human wants cannot be overstated (Akyazi et al., 2020). Wang & Dai (2018) argued that the FSC may be made more sustainable by measures such as the use of technology, improved resource effectiveness, staff education, and a better knowledge of customer demand.

As a result of its over 9,000 food processing enterprises, Thailand is a major producer and exporter of various processed foods. Rice, tuna in a can, sugar, beef, cassava products, and canned pineapple are among the country's top food exports. The food and beverage business in Thailand accounts for 25 percent of the country's GDP. In 2021, Thai food exports were worth $34.6 billion, up 11.8 percent from the previous year. Institute of Food Technologists (National, 2022). The internal and external sustainable supply chain management strategies of a Thai food company can take several shapes (Kuwornu et al., 2023). These methods may be categorized as those related to planning, organization, operation, and communication (Mastos & Gotzamani, 2022). Since social responsibility and environmental management mandate prioritizing food safety assurance above sustainable performance, SSCM procedures may affect food quality (Ortiz-Gonzalo et al., 2021).

Several sustainability standards have been implemented by the food industry, including ISO 9001 for quality management, ISO 14001 for environmental management, and ISO 22000 for food safety management (Wang & Dai, 2018). Not only are the goals and effects of adopting these standards unclear, but they are also not described as guidelines for sustainable business practices among Thailand's food companies (Kuwornu et al., 2023). Many smaller and medium-sized businesses have also discovered that the expense of overhauling their operations to meet SSCM requirements is prohibitive. Thai food firms are still in the early phases of adopting

SSCM methods since every business has its own standards and ideas for environmentally friendly manufacturing techniques.

Kuwornu et al. conducted research on the repercussions of sustainable supply chain management (SSCM) techniques for Thai food businesses (2023). It was determined via their investigation that SSCM methods, both internal and external, benefited the economic, ecological, and social standing of food businesses. Moreover, the quality assurance of food firms is influenced favorably by environmental, financial, and social performances. By enhancing internal environmental management and social responsibility management, businesses might boost their environmental and social performances. By collaborating closely with other links in the food supply chain, businesses may improve the environmental performance of their operations. Companies with strong environmental and social records tend to have better bottom lines. This research also found that using SSCM principles might help businesses improve their sustainability and provide their customers with higher-quality, safer, and healthier food options. Therefore, to achieve long-term success and boost product quality, the food industry should adopt SSCM techniques.

CONCLUSION

The supply chain and supply chain management are crucial to the success of any business. Manufacturers are looking for new ways to keep their supply chains sustainable in the face of globalization's difficulties and unanticipated shocks. While decreasing expenses and raising output are undeniably top priorities, the supply chain strives to accomplish many other essential objectives as well. Considering the interconnectivity of the economic, ecological, and social challenges, it is now more necessary than ever to develop sustainable supply chains. Even in developing nations, SSCM principles influence SCP. Take Thailand's food manufacturing sector, for instance. According to studies, food businesses' environmental, financial, and social performances improve by employing both internal and external SSCM strategies (Kuwornu et al., 2023). Moreover, the quality assurance of food firms is influenced favorably by environmental, financial, and social performances.

Before using SSCM, businesses must establish an effective information process system to address supply chain uncertainty, mitigate supply chain risks, and fulfill customer demands for transparency. All of these issues will eventually be resolved thanks to advances in the Internet and digital technology (IDT). By using machine intelligence and applying cutting-edge technologies with applications outside the confines of the business, the information processing mechanism may be made more rapid, adaptable, and sustainable. Decision-makers can benefit from the blending of many technologies, such as the Internet of Things (IoT), cloud-based data storage and analysis (BDA), and cyber-physical systems (CPS).

To create long-term business leaders, it will be necessary to further advance ICT. Companies may have a good influence on both the environment and society by adopting IDT practices across all departments (not just SC and SCM).

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11 THE CHALLENGES AND OPPORTUNITIES OF SUSTAINABLE ENTREPRENEURSHIP IN THE DIGITAL AGE: HOW TO LEVERAGE TECHNOLOGY AND EFFICIENCY FOR SOCIAL AND ENVIRONMENTAL IMPACT

Hanifa Maulani Ramadhan and Bayu Andriansyah Prastya

Abstract

In today's rapidly evolving digital landscape, a new breed of entrepreneurs is emerging with a dual mission for businesses to achieve success while also positively impacting society and the environment. This chapter explores how these visionary entrepreneurs are leveraging technology and efficiency to revolutionize supply chain management, resource optimization, waste management, and the integration of cutting-edge technologies to generate tangible social and environmental benefits. This chapter examines the dynamic world of supply chain management within the context of sustainable entrepreneurship in depth. It examines how entrepreneurs are leveraging digital tools to enhance supply chain transparency, traceability, and accountability. Through the use of real-world case studies, this chapter explores how businesses are employing cutting-edge technology to ensure the authenticity of sustainable sourcing, utilizing IoT devices to monitor supply chain conditions, and utilizing data analytics to make informed decisions that minimize environmental impact. In an era where global challenges are reshaping traditional business models, this chapter serves as a source of inspiration. It envisions a future in which technologically driven sustainability is not merely an option but a requirement. This book empowers entrepreneurs to create thriving businesses that contribute to a more equitable and eco-friendly world through the use of real-world examples and strategy.

Keywords: *Challenges, Opportunities, Entrepreneurship, Digital Age, Technology, Efficiency, Social and Environmental Impact*

H. M. Ramadhan · B. A. Prastya
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
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INTRODUCTION

In today's rapidly evolving business industries and landscape, sustainable entrepreneurship has emerged as of critical importance for organizations aiming to make a positive difference in society while minimizing their environmental footprint. The digital age, marked by technological advancements and the widespread use of management information systems (MIS), offers unique opportunities to tackle sustainability challenges and drive transformative change. This delves into the role of management information systems in supporting sustainable entrepreneurship and explores how technology and efficiency can be harnessed to create social and environmental impact. Sustainable entrepreneurship refers to the ongoing dedication of firms to uphold ethical practices and promoting economic growth, simultaneously contributing to the overall well-being of employees, their families, the local and global community, and future generations (Terán-Yépez et al., 2020). This chapter will examine various facets of sustainable business practices, with a particular focus on supply chain management, resource optimization, waste management, and the adoption of cutting-edge technologies.

One key area where management information systems can make a tangible difference is in sustainable supply chain management. SSCM is important because it can help improve effectiveness, efficiency, and competitiveness in business systems. Due to global demands on sustainable aspects in economic, social, environmental, and institutional midwives (Jaya et al., 2020). Sustainable development is an imperative decision for the advancement of human society, and supply chain management is poised to align with the trajectory of sustainable development. The sustainability of the manufacturing supply chain in the context of the service industry necessitates a comprehensive analysis of multiple elements. Some attributes of the service sector, like client influence, immeasurability, and labor intensity, have an impact on the incorporation of the Triple Bottom Line (TBL) framework (which encompasses social, environmental, and economic aspects) inside service supply chains (Liu et al., 2017). By leveraging MIS, organizations can integrate data and collaborate with business partners to ensure transparency and sustainability throughout the supply chain. This facilitates traceability, enables ethical sourcing, and reduces the environmental impact associated with procurement, production, and distribution processes. SSCM prioritizes the implementation of instruments in industry 4.0, such as big data, blockchain, IoT, artificial intelligence (AI), and robotics. Technology can be used to leverage the effectiveness and efficiency of supply chain systems in various industries. In addition, information technology can also help in monitoring and managing the flow of materials, money, and information in the supply chain system more accurately and efficiently (Jaya et al., 2020). Moreover, the integration of developed technology, such as the Internet of Things (IoT) and smart sensors, plays a fundamental role in monitoring and controlling resource consumption. These advancements allow

businesses to track and manage energy, water, and raw material usage more effectively, leading to optimized resource allocation and reduced waste generation.

This chapter showcases real-world examples of management information system applications that have successfully reduced environmental impact through resource efficiency and sustainable product management. These case studies will illustrate how organizations have leveraged MIS to implement innovative solutions, streamline operations, and create environmentally conscious products and services. As the global challenges of climate change, resource scarcity, and social inequality continue to escalate, the need for sustainable entrepreneurship has never been more pressing. By embracing technology, leveraging efficiency, and adopting responsible practices supported by management information systems, businesses can drive positive change and build a resilient and prosperous future for all.

How MIS supports sustainable supply chain management, optimizing resource and waste

Sustainable supply chain management (SSCM) has grown in importance as companies integrate sustainability into their operations. Due to new technology, Supply Chain and Supply Chain Management (SSCM) features, including instrumentation, interconnection, intelligence, automation, integration, and innovation, have changed. These technologies include machine learning, big data analytics, aerial drone, advanced robotics, IoT, cloud computing, 3D printing, shared economy, and blockchain system. Therefore, these technologies are being used to improve SSCM procedures (Zhao et al., 2020). The role of Management Information Systems (MIS) is crucial in supporting these sustainable efforts by providing the necessary tools and technologies to enhance supply chain visibility, optimize resource utilization, and manage waste efficiently. MIS enables information sharing and ensures information quality, facilitating the formation of collaborative relationships among supply chain participants (Afshan et al., 2018). MIS also supports enterprises' operations, management, and decision-making processes. It can help in demand forecasting, sourcing, production, inventory and transportation management, and retailing (Yang et al., 2021). Also, Yang et al. pointed out that The inclusion of transaction processing systems inside the lower levels of management information systems (MIS), alongside decision support systems and executive information systems at the higher levels, plays a vital role in facilitating decision-making across all aspects of the supply chain. Integration of management information systems (MIS) is crucial in order to successfully implement and achieve sustainability targets within the context of SCM. Integrating digital transformation into supply chain management represents a notable domain in which Management Information Systems (MIS) can effectively contribute to attaining sustainability objectives. Furthermore, implementing Management Information Systems (MIS) enables organizations to strategically plan and manage their supply chain operations to minimize negative environmental effects.

Inadequate sustainable supply chain management can lead to significant environmental challenges, as highlighted by (Kuhnle & Lanza, 2019). The challenges at hand cover a range of issues, including marine litter, air pollution, soil pollution, water pollution, and the leaking of dangerous substances throughout supply chains. However, the application of technological breakthroughs shows the potential to support developing economies in enhancing their current practices of SSCM. Attainment of this goal can be enhanced by the utilization of effective and environmentally friendly supply chain evaluation and recycling approaches (Kuhnle & Lanza, 2019). Enabling material efficiency optimization and reducing the scope of raw materials and industrial supply chains in light of technological advancements, it is crucial to address various obstacles encountered within supply networks (Brandenburg et al., 2018). One of the advantages linked to the adoption of an integrated system for SSCM within the realm of reverse logistics is the creation of a closed-loop supply chain. A closed-loop supply network refers to interconnected systems that aim to redirect and change supply chains, with a specific emphasis on fostering environmentally sustainable approaches for the disposal of items at the end of its life cycle (Russo et al., 2019). The integration of design components that promote sustainable operations within the closed-loop structure of the supply chain, including modularity, repairability, and recycling, has considerable importance (Ashby, 2018; Gold & Seuring, 2011). After careful analysis, it was concluded that the most effective strategy in this particular situation was the utilization of module reuse as the primary approach, followed by the implementation of material recycling and thermal disposal methods. The effective management of the supply chain poses considerable problems in guaranteeing the enduring sustainability and optimal efficiency of chemical processes. The study conducted by Kalverkamp, underscores the importance of supply networks in relation to energy efficiency and the management of SSCM (Kalverkamp & Young, 2019). These networks aim to reduce both supply chain and energy demands in the long term. A closed-loop supply chains implementation has the potential to yield environmental benefits and enhance resource efficiency (Tseng et al., 2013). This may be achieved by effective management of product returns at various stages and throughout the whole lifecycle of the product. There is a prevailing belief that the utilization of online mobile platforms for the purpose of coordinating on-site sustainable supply chain gatherings is deemed acceptable in terms of enhancing the overall environmental performance of SSCM systems. Establishing successful closed-loop supply chains in an uncertain environment presents significant challenges and requires a considerable amount of time. The complex interaction of various elements is the main contributing factor to this phenomenon, encompassing factors such as the diversity of products, the relatively short lifespan of products, and the increasing prospects for outsourcing and the expansion of organizations into foreign markets (Holgado & Aminoff, 2019). In their study, a model developed by (Afum et al., 2023), an optimization model aimed at reducing overall costs associated with reverse logistics and enhancing the efficiency of product return collection

stations. The proposed model seeks to improve logistics operations and promote sustainable recycling practices, thereby contributing to both economic and environmental objectives. In addition, closed-loop supply networks have incorporated various reverse operations such as shredding, recycling, disassembly, and landfilling. These activities aim to reintegrate reverse material flows back into the forwarding supply chains (Tsai et al., 2021).

The negative consequences on the environment and human well-being stemming from electronic waste have necessitated the implementation of SSCM systems. These systems aim to provide a closed-loop supply chain that efficiently handles the disposal of this crucial end-of-life resource (Lejarza & Baldea, 2020). Policymakers and practitioners involved in the field of e-sustainable supply chains should adopt a comprehensive approach when considering disposal options within the framework of a closed-loop supply chain network (Brandenburg et al., 2018). Despite the increasing legal scrutiny surrounding the legislation pertaining to the treatment of e-sustainable supply chains, the effective management of such supply chains is still in its early stages. This can be attributed to the absence of a robust mechanism for collecting data, limited public involvement, and inadequate enforcement of regulations (Kuhnle & Lanza, 2019). The issue of plastic contamination in the natural environment has prompted lawmakers to actively pursue sustainable solutions (de Oliveira et al., 2018). According to (Farooque et al., 2019), the European Commission has played a significant role in regulating the entire plastics value chain, encompassing manufacturers, hoarders, and recyclers. A burgeoning economy driven by technical innovation principles has gained traction in addressing the adverse environmental and ecological effects of plastic. The primary objective of technological innovation is to mitigate the release of plastic into the environment, hence averting potential risks to the supply chain (Dong et al., 2021). Manufacturers have the potential to mitigate their carbon emissions and reduce resource consumption by producing bioplastics that exhibit superior environmental attributes compared to conventional fossil-derived plastics. The preference for chemical recycling over mechanical recycling has been emphasized in the context of biodegradable plastics like polylactic acid, as discussed (You et al., 2012). The research conducted on plastic recycling has identified a noteworthy correlation between the distinctive characteristics of plastic sustainable supply networks and the process of recycling. The results suggest that plastic sustainable supply chains classified as "High Quality" demonstrate a recycling potential that is 12-35% more in comparison to "Low Quality" applications. The Chinese government's recent imposition of a prohibition on the importation of substandard recycling materials has adversely affected SSCM systems. Prioritizing the preservation of resource quality across the components, materials, and product life cycle. Lay down recycling targets for plastic packages that are in line with the actual recycling process output while concurrently ensuring the final product quality is of utmost importance. The process of plastic recycling is a recent advancement in technology. According to (Cancino et al., 2018), it is

recommended that SSCM initiatives be implemented in order to mitigate material deterioration that occurs during mechanical operations. This can be achieved by enhancements in product design and the utilization of advanced technologies.

Supply chain management is the whole process of keeping track of how a product or service is made from start to finish. It is very important for businesses to make sure that their supply chain operations are sustainable. Information Systems (IS) are important for supply chain management because real-world evidence shows that successful and efficient supply chain management is impossible without IS (de Camargo Fiorini & Jabbour, 2017). The integration of the economy, environment, and society in the sustainable development of enterprises is facilitated by the capabilities of Management Information Systems (MIS). This integration yields favorable outcomes for both the environment and society (Yang et al., 2021). In addition, the effective administration of sustainable supply chain activities significantly contributes to environmental sustainability and yields favorable societal outcomes (Yu et al., 2022). In order to effectively manage the supply chain, businesses need to have access to real-time data that can be used to optimize processes and improve efficiency. MIS can provide this data by integrating various applications, data compatibility, analytic ability, evaluation, and alertness, among other features (Harnowo, 2015). Additionally, MIS can help optimize the positive social and environmental impact of business by leveraging its four primary dimensions, which are MIS infrastructure, MIS people, MIS process, and MIS vision and plan (Adetunji et al., 2023). MIS capabilities can support sustainable supply chain management by providing real-time data that can be used to improve efficiency, reduce carbon footprints, and optimize the positive social and environmental impact of business.

In order to effectively pursue sustainability objectives in the realm of SCM, it is imperative to incorporate Management Information Systems (MIS) into preexisting operational procedures. According to (GSCI, 2020), a crucial method for achieving this objective is utilizing real-time data. The utilization of real-time data enables firms to enhance their decision-making processes through the provision of timely and real-time information regarding company supply chain activities. This facilitates the ability of firms to retain authority over their operations, implement and uphold policies and regulations, and promptly address issues before they escalate. Furthermore, the attainment of supply chain visibility can be facilitated by leveraging Management Information Systems (MIS), providing customers with the confidence that products are sourced in a sustainable manner, encompassing both environmental and social considerations. By integrating MIS with existing supply chain management processes, companies can improve their sustainability performance, reduce waste, and ensure that they meet their sustainability goals. This can lead to a more responsible and environmentally friendly business model that benefits both society and the planet.

JD.ID serves as an illustrative case of the positive impacts resulting from the implementation of SSCM. Noteworthy achievements include a reduction of 37 days in inventory turnover, a decrease of 23% in invalid runs within picking areas, a 10%

decrease in transportation costs, and a notable enhancement of 25% in delivery performance (Zhao et al., 2020). These outcomes highlight how SSCM can enhance a company's operations and competitiveness. Another exemplary case is Alibaba, which has revolutionized its "New Retail" concept and intelligent logistics solutions through the implementation of SSCM. By leveraging artificial intelligence (AI) to bridge the online and offline worlds, Alibaba has not only improved the consumer experience but also created significant competitive advantages, leading to substantial profits (Zhao et al., 2020) These cases illustrate how the integration of sustainable practices within supply chain management can generate substantial benefits. By leveraging emerging technologies and the capabilities of MIS, organizations can enhance their supply chain visibility, optimize resource utilization, reduce environmental impacts, and ultimately improve their operational performance and competitiveness in the global marketplace.

Data integration and collaboration

Data integration is a vital component of sustainable supply chain management that helps in sharing data across the supply chain to promote transparency, risk management, and timely decision-making. External data analytics is employed to discern and assess diverse hazards associated with supply chain interruptions arising from events such as protests, traffic congestion, natural calamities, trade conflicts, political tensions, raw material scarcity, and pandemics like COVID-19. These risks are then addressed and minimized to ensure the establishment of sustainable supply chain management practices (Mageto, 2021). The utilization of big data analytics tools enables the acquisition of real-time doable reports derived from the collected data, hence facilitating the enhancement of sustainability within manufacturing supply chains. This helps in identifying reputational damage early and detecting disruptions to reduce associated risks (Mageto, 2021). The implementation of real-time analytics enables the extraction of valuable insights by analyzing data derived from both internal and external sources, specifically focusing on the mentions of enterprises within a certain supply chain, which can provide insights for knowledge advancement and guide business decision-making for achieving sustainability in supply chain management (GSCI, 2020). Data integration facilitates rapid response, flawless system interoperability, and the processing of many data sources and kinds in order to advance the objectives of Supply Chain and Sustainability Management (SSCM). In order for data integration to work well in sustainable supply chain management, a strong information technology infrastructure must be set up throughout the supply chain. To make money, people in the supply chain should invest in data infrastructure and technologies that are in line with their economic, social, and environmental goals. Big data analytics shouldn't just be used for their financial benefits; they should also be used to improve environmental and social sustainability throughout the supply chain. Also, it's important for companies to have an open and honest relationship that makes it easy to share information about data processing, analytics, and reporting on supply chain operations. The complexity of data integration in SSCM is exacerbated

by security, privacy, and policy concerns, hence posing a significant hurdle to the successful use of big data analytics (Mageto, 2021). Hence, the dimensions of interoperability and compatibility hold significance in facilitating the effectiveness of Big Data Analytics (BDA) in attaining Sustainable Supply Chain Management (SSCM). The aforementioned features are of utmost importance in facilitating interoperability, adaptability, and communication across diverse functions and stakeholders within the supply chain.

Collaboration is a crucial aspect of SSCM that has numerous benefits for enterprises. The primary goal of SSCM collaboration is to maintain an optimized flow throughout the supply chain, which is essential for meeting demand efficiently and effectively (GEP, 2021). To deliver items on schedule and in full, supply chain collaborations must involve internal and external departments. Collaboration helps sustain supply chain management by monitoring and controlling quality issues, generating and sharing capacity plans, creating accurate predictions, enabling suppliers and partners to make educated decisions, and eliminating supply chain inefficiencies (GEP, 2021; Shin et al., 2019). Modern supply chain collaboration software empowers organizations to promptly adapt to dynamic circumstances while proficiently mitigating risks and efficiently addressing disturbances. In order to attain a heightened level of supply chain maturity through collaborative efforts, it is imperative to undergo a shift in attitude rather than solely relying on technological advancements. Hence, the act of collaborating has the potential to foster enduring dedication by means of suitable partnerships.

The theory of social capital highlights the significance of relational resources in collaboration, including the attribute of relation exchange and commitment-based performance outcomes, which are vital factors to consider in different types of partnership structures (Shin et al., 2019). Furthermore, the utilization of a performance improvement model based on partnerships might enhance the comprehension of researchers and practitioners about the suitable orientation of partnerships for the purpose of sustaining commitment and enhancing business performance. Collaboration encompasses the use of supply chain tools to facilitate the exchange of data through a consolidated platform. This facilitates the ability of companies to coordinate and manage their supply chains in order to achieve a smooth and uninterrupted flow of information, materials, and goods (GEP, 2021). The establishment of successful partnerships between companies can result in advantageous outcomes through the facilitation of sustainable product innovation decisions that use the owned knowledge of market desired characteristics. The possession of extensive market demand knowledge has the potential to drive notable innovation and enhance business performance, thereby contributing to long-term improvements in firm performance, particularly in the context of green SCM activities (Shin et al., 2019).

Following is one example, JD.ID, a prominent organization, has effectively utilized artificial intelligence (AI) and big data-driven sustainable supply chain (SSC)

to attain remarkable operational efficiency in both its online and physical retail operations. Through the utilization of artificial intelligence (AI) and big data, JD.ID has successfully transformed its supply chain management, resulting in optimized operational procedures and increased efficiency. The company has gone a step further by establishing an open supply chain platform that promotes seamless integration among third-party merchants, brands, and offline stores (retail). This strategic move has not only given operational efficiency but has also fostered innovation throughout the industry chain (Zhao et al., 2020). The application of AI extends beyond the realm of supply chain management, as it finds value in various fields, including agriculture. In the agricultural sector, AI plays a fundamental role in enhancing efficiency and optimizing crop production. Through AI-powered systems, farmers can monitor the condition of their plants in real-time, receiving valuable insights and recommendations for proper fertilization and watering. This proactive approach ensures that plants receive the necessary care, leading to improved yields and resource utilization. Moreover, AI can contribute to forecasting weather patterns and natural disasters, enabling farmers to anticipate and mitigate potential risks that could impact crop yields. By leveraging AI in agriculture, farmers can make informed decisions, optimize their practices, and enhance sustainability in the agricultural sector (Wihartiko et al., 2021).

In summary, JD.ID's adoption of big data-driven and AI sustainable SC has propelled its operational efficiency to unprecedented heights. By integrating third-party merchants, brands and offline retail stores through an open supply chain infrastructure or platform, the company has not only achieved streamlined operations but has also fostered innovation within the industry. Furthermore, the application of AI in agriculture showcases its potential to optimize crop production, improve resource utilization, and mitigate risks. By leveraging AI technologies, farmers can make data-driven decisions, ensuring the sustainability and efficiency of their agricultural practices. The strategic implementation of AI and big data-driven SSC, as demonstrated by JD.ID and the agricultural sector, highlights the transformative impact of these technologies on operational efficiency and sustainability (Wihartiko et al., 2021; Zhao et al., 2020).

Internet of Things (IoT) and smart sensors

The adoption of Industry 4.0, particularly the integration of Internet of Things (IoT) technology, holds potential for enhancing sustainable management practices. This realization has been facilitated by the emergence of the 4th industrial revolution and the digital transformation of supply chains (Mastos et al., 2020). IoT, or the Internet of Things, refers to the technology that connects physical devices through the Internet. IoT (Internet of Things) is based on the connection and communication between physical objects or "things" through the internet (Liu et al., 2023). Liu et al. (2023) additionally highlight the capabilities of the Internet of Things (IoT) in facilitating data sharing, introducing novel analytical techniques, and enabling interconnected and intelligent entities capable of transmitting data, information, and

knowledge. The Internet of Things (IoT) encompasses a wide range of applications within the domains of resource management and logistics, and it holds significant significance in the context of SCM. The Internet of Things (IoT) is commonly advocated as a viable approach to address the challenges associated with sustainable supply chain management across diverse industries.

Internet of Things (IoT) and smart sensors improve SC and resource management. Forbes.com reports that IoT can track environmental elements like temperature and humidity to prevent spoiling and waste in the supply chain. IoT allows real-time tracking, monitoring, and analyzing goods and resources throughout the supply chain, giving companies who use it a competitive edge (Beasley, 2023). IoT sensors have a big advancement on SCM by tracking and monitoring the state of commodities in the supply chain. The Internet of Things (IoT) has the capacity to connect the physical and virtual dimensions of SC and SSCM through its ability to facilitate real-time sensing and transmission of status information. The implementation of this technology enables enhanced monitoring and tracing throughout the entire supply chain, hence facilitating waste reduction, efficiency enhancement, and transparency improvement (Liu et al., 2023). The use of RFID tags and sensors, GPS tracking systems, and smart warehouse solutions are key IoT solutions for supply chain optimization (Tan & Sidhu, 2022). IoT sensors can be used to improve resource management, including inventory control, production planning, and logistics. With IoT, companies can identify potential bottlenecks, optimize their networks, and monitor supplier performance. Smart IoT solutions can improve visibility, enhance efficiency, enable data-driven decision-making, and provide real-time tracking to enhance supply chain management (Tan & Sidhu, 2022). IoT solutions can also enable predictive maintenance and improve inventory management. By enhancing visibility and responsiveness, IoT also delivers a better customer experience. IoT can aid in better decision-making and improve efficiency in supply chain operations by identifying resource leaks and inefficiencies that people may not be able to spot. The use of IoT devices can also help reduce costs in logistics by optimizing operations and ensuring timely delivery of goods in good condition (Alfian et al., 2020). It is clear that the use of IoT devices in logistics can significantly reduce downtime, save money, optimize practices, and improve efficiency. As IoT technology continues to advance, even more innovative applications of IoT in logistics and the supply chain industry can be expected.

IoT and smart sensors have immense potential to reduce resource waste and improve sustainability in supply chain operations. By providing real-time data on product usage and environmental conditions, these technologies can help companies figure out how to reduce waste, make their operations more efficient, and have less of an effect on the environment. For instance, the integration of IoT-enabled devices in the supply chain can improve efficiency and food safety. Sensor technologies can help organizations prevent food spoilage, optimize transportation routes, and automate temperature monitoring and reporting during distribution, transit, and storage

(Alfian et al., 2020). Smart sensors can also be used in conjunction with IoT to reduce resource waste and improve sustainability in supply chain operations. IoT devices can track and monitor various environmental factors of goods, such as location, temperature, humidity, and pressure. It is used in particular for smart waste collection management, measuring bin fill levels, suggesting the best routes for transporting scrap metal bins inside a factory, and providing remote real-time condition monitoring of equipment (Mastos et al., 2020). The data collected by IoT devices can enable supply chain managers to identify inefficiencies more quickly, which can reduce resource waste. IoT can also be used to track the location of resources, optimize transportation routes, and create sustainable distribution lines (Yang et al., 2021). Additionally, IoT can be used to reduce waste associated with raw material sourcing and optimize product usage, thereby reducing environmental impact in supply chain operations. Adopting IoT solutions in the supply chain can increase profits in the long run, promote transparency in food systems, and improve sustainability across the entire product cycle.

For example, according to (Mastos et al., 2020), When IoT and smart sensors are used to handle scrap metal, the time it takes to act is cut by 20%. Because of the predictive maintenance approach, 4% less scrap metal was thrown away, and 15% less was spent on logistics. The cost of monitoring is cut by 40% because of price forecasting for different types of waste materials. This lets the waste management business know what the future prices will be for different types of waste by using a deep learning method on the company's historical data. Overall, the use of industry 4.0 solutions for scrap metal management makes garbage producers and waste management businesses more competitive and moves them toward more sustainable supply chain management. It lets companies that make waste and companies that take care of waste watch their operations in real time at the firm and supply chain levels and make better decisions. Businesses in the waste management business could benefit from the suggested solution, which makes it possible to use less nonrenewable energy and less CO2.

CONCLUSION

Understanding the potential of information systems in supporting sustainability and enhancing performance is crucial in modern business operations. One area where Management Information Systems (MIS) plays a significant role is in SCM. By effectively harnessing MIS capabilities, organizations can make substantial contributions to achieving sustainability objectives. This involves not only optimizing resource utilization but also minimizing environmental impacts, all of which collectively enhance operational performance and global market competitiveness. In the pursuit of SSCM, organizations can capitalize on emerging technologies and the features offered by MIS. One key advantage is the improved visibility that these systems provide across the supply chain. This visibility extends to resource allocation,

enabling efficient usage and minimizing waste. As organizations strive to align with sustainability goals, these technologies empower them to navigate the complexities of environmental impact while simultaneously boosting operational efficiency.

In the frame of SSCM, organizations can capitalize on emerging technologies and the features offered by MIS. One key advantage is the improved visibility that these systems provide across the supply chain. This visibility extends to resource allocation, enabling efficient usage and minimizing waste. As organizations strive to align with sustainability goals, these technologies empower them to navigate the complexities of environmental impact while simultaneously boosting operational efficiency. The concept of a circular economy, characterized by resource sharing and waste reduction, finds support in the capabilities of the Internet of Things (IoT). Through IoT-enabled monitoring and resource management, organizations can facilitate the transition to circular practices. By facilitating the real-time tracking of resources and their usage, IoT contributes to the reduction of waste and the efficient allocation of materials. Investing in IoT technologies holds immense potential for businesses seeking to reduce their environmental footprint, paving the way for an increased sustainable future.

Future Challenges

The accelerated progression of sustainability practices and the growing emphasis on environmental accountability have prompted firms to actively explore new strategies for incorporating sustainable practices within their supply chain management procedures. One critical aspect of this transformation is the effective implementation of a Management Information System (MIS) specifically designed for SSCM. The challenge lies in developing and deploying an integrated MIS solution that not only streamlines supply chain operations but also addresses environmental concerns, promotes social responsibility, and ensures economic viability. The expertise, innovation, and commitment to environmental and social responsibility can make a contribution to the development and deployment of effective MIS solutions that streamline business operations while addressing sustainability entrepreneur.

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12 THE POTENTIAL FUTURE OF ARTIFICIAL INTELLIGENCE IN FOSTERING SUSTAINABLE ENTREPRENEURSHIP WITHIN THE CREATIVE ECONOMY

Wiyata, Logaiswari Indiran, and Haibing Liu

Abstract

In the digital age, the creative economy has emerged as a critical driver of economic growth, innovation, and job creation. The creative economy, encompassing industries such as design, art, media, and entertainment, plays a crucial role in economic growth, cultural expression, and social development. With the emergence of artificial intelligence (AI) technologies, there is a growing opportunity to leverage their potential to drive sustainable innovation and entrepreneurship within the creative sector. This chapter begins by providing an overview of the creative economy and its significance in sustainable entrepreneurship. Drawing upon the capabilities of AI, we discuss potential future applications that can foster sustainable entrepreneurship within the creative economy. It explores how AI can assist in optimizing supply chains, enhancing product design and development, enabling personalized customer experiences, and supporting sustainable marketing and distribution strategies. Furthermore, we also discuss the potential of AI in providing personalized recommendations, generating innovative ideas, and predicting consumer preferences. It highlights the transformative role of AI in driving creativity, innovation, and inclusive creative economic growth, paving the way for sustainable and resilient entrepreneurship in the future. By exploring the potential future trajectory of AI in fostering sustainable entrepreneurship within the creative economy, this chapter provides insights and recommendations for entrepreneurs, policymakers, and stakeholders in the creative industry.

Keywords: *Artificial Intelligence, Creative Economy, Business Innovation, Sustainable Entrepreneurship.*

Wiyata
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

L. Indiran
Department of Marketing and Entrepreneurship Universiti Teknologi Malaysia, Malaysia

H. Liu
Management School, Wuhan University of Science and Technology, China
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INTRODUCTION

Creative economy has been emerging as a powerful force driving economic growth, fostering innovation, and creating numerous job opportunities. This vibrant sector encompasses industries such as design, art, media, and entertainment, which not only contribute to economic prosperity but also play a fundamental role in cultural expression and social development. The rise of Artificial Intelligence (AI) technologies presents a compelling opportunity to harness their potential and fuel sustainable innovation and entrepreneurship within the creative sector. AI has the potential to significantly impact economic growth by increasing productivity and innovation. AI can automate the production of goods and services, leading to cost savings and increased efficiency. It can also automate the production of ideas, leading to new discoveries and innovations (Aghion et al., 2018). In this chapter, we embark on a journey to examine the transformative intersection of creativity and AI in fostering sustainable entrepreneurship.

Sustainable entrepreneurship refers to the continual commitment of firms to uphold ethical practices and foster economic growth, all the while enhancing the well-being of employees, their relatives, the local and global community, and future generations (Terán-Yépez et al., 2020). Today's era, there are opportunities to capitalize on the positives of AI in Sustainable Development Goals (SDGs) and minimize/mitigate the negatives (Bickley et al., 2021). The potential of AI-based technologies approaches to achieve sustainable development goals, particularly in impoverished nations (Gupta et al., 2023) We begin by providing a comprehensive overview of the creative economy and its significance in driving sustainable business practices. By understanding the underlying principles and dynamics of this thriving sector, we set the stage for exploring how AI can serve as a catalyst for further growth and innovation.

The creative economy can play a vital contributor to economic growth, not just in developed nations but across the globe. It thrives on the ingenuity and imagination of individuals who shape and deliver artistic and cultural products and experiences. Moreover, this sector acts as an incubator for innovation, constantly pushing boundaries and challenging norms. AI can potentially create artifacts like poems, stories, paintings, or architectural designs that meet the requirements of a human evaluator (Bakhshi et al., 2015). However, the extent to which AI can contribute to the creative economy is still a topic of debate and research. Some argue that AI can enhance creativity by providing new tools and resources for artists and designers, while others are concerned about the potential impact on employment in creative industries. The advent of AI introduces exciting possibilities for entrepreneurs within the creative economy to harness its power and unlock new realms of potential.

Drawing upon the capabilities of AI, we delve into the exciting realm of potential future applications that can revolutionize entrepreneurship within the creative economy. The extent to which AI will help different sectors will depend on

various factors, such as the availability of data and the specific applications of AI in each sector (Bakhshi et al., 2015). Various aspects of the creative process could change as a result of the fusion of creativity and AI. Studies by (Juliana et al., 2021) mention that the correlation matrix analysis revealed a significant positive relationship between creativity, innovation, and technical advancement. This suggests that the progress of technology serves as a facilitator for the cultivation of creativity and the generation of innovative ideas. However, the precise impact of this factor on the growth of entrepreneurship has not been accurately assessed. It is recommended that further investigation be conducted in order to determine the veracity of the claim. Moreover, a variety of studies and empirical findings provide substantial evidence supporting the existence of a strong correlation between creativity, innovation, and technology Ballor & Claar, 2019 (Acs & Audretsch, 2005;). We investigate how artificial intelligence can improve a company streamline product design, supply chains and development processes, enable personalized customer experiences, and support long-term marketing and distribution strategies. Entrepreneurs can increase operational effectiveness, cut waste, and contribute to a more sustainable business ecosystem by utilizing AI-powered insights and automation.

Furthermore, we delve into AI's capacity to provide personalized recommendations, generate innovative ideas, and predict consumer preferences. AI algorithms can analyze vast amounts of data, uncover patterns, and deliver tailored recommendations to individual consumers. This personalized approach not only enhances customer experiences but also helps creative entrepreneurs to better understand their target audience and develop products and services that resonate with them. Additionally, AI-powered idea-generation tools can facilitate the generation of fresh and inventive concepts, sparking new avenues for creativity and innovation. By exploring these possibilities, we illuminate the transformative role of AI in driving creativity, fostering innovation, and promoting inclusive economic growth within the creative sector. AI serves as an enabler, providing entrepreneurs with powerful tools to navigate an ever-evolving business landscape. However, it is essential to strike a balance between the human touch of creativity and the augmentation provided by AI. The successful integration of AI technologies requires an understanding of its limitations and a thoughtful approach to ensure ethical and responsible use. Through the potential future trajectory of AI in fostering sustainable entrepreneurship within the creative economy, it aims to provide valuable insights and recommendations for entrepreneurs, policymakers, and stakeholders in the creative industry. By understanding the convergence of creativity and AI, we can unlock new horizons of opportunity, leverage cutting-edge technologies, and build a future characterized by sustainable and resilient entrepreneurship within the creative economy.

Generative AI

The field of generative artificial intelligence has gone through substantial development in recent decades (Cockburn et al., 2018). The term "generative AI"

encompasses a class of artificial intelligence (AI) methodologies and models specifically developed to produce novel material or data that exhibits similarities to the training data they have been exposed to. It involves training models to understand patterns and structures in existing data, such as text, images, or music, and then using that knowledge to generate new content similar in style or format (Epstein et al., 2023). This technology has applications in various fields, including the creative arts, content creation, and problem-solving. Initially, generative models were limited to employing rudimentary techniques such as Markov chains and basic probability distributions (Goodfellow et al., 2014). Nevertheless, the discipline had a significant breakthrough with the advent of deep learning and neural networks. During the mid-2010s, the field of generative artificial intelligence experienced a significant transformation with the introduction of Variational Autoencoders (VAEs) and Generative Adversarial Networks (GANs) (Hsieh, 2022). In contrast to the implementation of a two-player game comprising a generator and a discriminator in Generative Adversarial Networks (GANs) for the purpose of generating high-quality and authentic samples across many domains such as visual imagery, auditory compositions, and text content (Goodfellow et al., 2014). Variational Autoencoders (VAEs) facilitated the creation of continuous latent spaces that enable more expressive and adaptable data generation (Doersch, 2016). The advent of generative AI has ushered in a new era, as seen by its diverse applications in fields such as picture synthesis, style transfer, language modeling, and medication development (Tripathi et al., 2022). Over the course of time, there has been a shift in focus towards addressing the limitations and enhancing the functionalities of generative models. Academic publications have detailed the emergence of key generative models like ChatGPT and Stable Diffusion over the past two years (Gozalo-Brizuela & Garrido-Merchan, 2023). These models can provide stunning images and function as a complete question-and-answer system, changing various sectors. Thus, these generative models have a major impact on industry and society, potentially changing many labor categories. The DALLE-2 model shows how Generative AI can effectively and creatively turn textual inputs into visual representations. The Dreamfusion model shows how it can turn words into three-dimensional pictures. Like the Flamingo model, Generative AI can turn photos into written descriptions. The Phenaki model shows it can generate videos from text. Generative AI can also transform text into audio, as seen by AudioLM. The ChatGPT model shows it can produce new textual content from existing material. The Codex model shows Generative AI can convert text to executable code. The Galactica model generates scientific writings, while the AlphaTensor model creates algorithms. This article summarizes the main domains affected by generative AI and presents a taxonomy of the latest generative models. Researchers have addressed the task of developing new designs that use attention mechanisms in order to improve the production of sequences and better language processing. Notably, Transformer-based models, such as the GPT series produced by OpenAI, have been utilized for this purpose. The aforementioned models exhibited commendable performance across

several natural language processing tasks, encompassing text completion, translation, and dialogue generation (Chang et al., 2023). Furthermore, the continuous advancements in hardware and distributed computing have facilitated the training of larger and more complex models, resulting in unprecedented levels of creative production (Chang et al., 2023). It is expected that in the future, generative artificial intelligence (AI) would be employed to facilitate the generation of artistic works, the development of tailored content, and the enhancement of data for diverse industries (Epstein et al., 2023). However, it is crucial to address ethical aspects due to the concerns surrounding inaccuracy, privacy, and potential abuse associated with these powerful models.

Generative artificial intelligence (AI) has emerged as an essential instrument in the economic sector, particularly in the realm of creating content and marketing (Mondal et al., 2023). GPT-3 and other generative artificial intelligence (AI) models have been employed for the automation of content generation across various domains, encompassing the creation of articles, product descriptions, social media posts, and adverts (Mondal et al., 2023). The aforementioned technology possesses the capacity to significantly diminish expenses and enhance productivity inside the conventional content producing industry (Mondal et al., 2023). Organizations have the capability to leverage generative artificial intelligence (AI) systems to efficiently produce substantial volumes of material within a limited timeframe, with minimal need on extensive human involvement (Dwivedi et al., 2023). This practice not only results in cost savings, but also enables firms to tailor information to specific target audiences on a large scale. Consequently, enterprises have the opportunity to expand their consumer base through tailored communications, thereby augmenting their marketing endeavors and attaining elevated rates of engagement. In marketing communications, the exclusive reliance on ChatGPT may not be sufficient. The engagement of human agents remains necessary to ensure the credibility of the insights and personalized offers (Dwivedi et al., 2023).

In the field of business, generative artificial intelligence (AI) holds the potential to generate innovative and imaginative material. One potential use of generative AI in the realm of graphic design (Bordàs Vives, 2023) is its utilization to generate customized logos and branding materials for their client. Artificial intelligence (AI) has the capability to generate distinctive and innovative logo designs according to the specific requirements of clients. The accomplishment was attained through the utilization of a generative model that underwent training on a comprehensive dataset consisting of logos and design components. (Chacón et al., 2021). This methodology not only accelerates the design process but also enables the company to offer its client economically viable design solutions. Rather than relying solely on human designers, the utilization of generative AI enables the rapid generation of a diverse array of design alternatives, hence offering clients supplementary choices and augmenting overall consumer contentment (Dwivedi et al., 2023). In addition, the business has the potential to include feedback mechanisms into the AI system, enabling it to acquire

knowledge from client preferences and iteratively enhance its designs. The utilization of an iterative approach guarantees that the produced logos progressively align with the preferences and requirements of individual clients, leading to improved outcomes with each interaction. As the progression of generative artificial intelligence continues, the enterprise will have the capacity to expand its range of products and services to encompass many forms of artistic content, including visuals for social media, banners for websites, and promotional materials for marketing purposes (Dwivedi et al., 2023). The company's adaptability allows it to effectively cater to a wider spectrum of clients and industries, hence driving its growth and achieving success. In this particular scenario, the utilization of generative AI technology enhances entrepreneurial endeavors by providing a scalable and efficient mechanism for delivering creative services (Bordàs Vives, 2023). This enables the firm to effectively compete in a highly competitive market and create design solutions of superior quality for its clients (Bordàs Vives, 2023).

Numerous companies have been actively employing generative artificial intelligence (AI) across diverse industries (Gozalo-Brizuela & Garrido-Merchán, 2023). OpenAI emerged as one of the pioneering entities engaged in the development of creative artificial intelligence. The researchers have built numerous sophisticated models, one of which is the Generative Pre-trained Transformer 3 (GPT-3), which might be regarded as groundbreaking within its era. GPT-3, a highly potent language model, has found extensive application in many tasks related to natural language processing. Numerous companies have successfully integrated GPT-3 into their applications, enabling the generation of text that exhibits human-like qualities. This integration has facilitated the development of conversational AI robots, language translation capabilities, and even the generation of code snippets. Developers can leverage the capabilities of GPT-3 through OpenAI's API to explore innovative applications. Adobe, a prominent company in the field of creative software, has been actively exploring the potential of generative artificial intelligence (AI) to enhance its products and services. The research division of the organization has been engaged in the development of Adobe Sensei, an artificial intelligence tool that integrates with several Adobe applications. Sensei employs generative artificial intelligence (AI) technology to provide assistance to designers, photographers, and artists in their creative endeavors. The software possesses the capability to autonomously assign descriptive labels and arrange visual images, generate design recommendations in response to user input, and streamline the process of content creation. The content-aware fill tool in Adobe Photoshop utilizes artificial intelligence (AI) technology. Generative algorithms efficiently replace nonexistent or unwanted elements inside an image by producing suitable material that matches the overarching context. Nvidia, renowned for its production of high-performance graphics processing units (GPUs), has emerged as a prominent contributor to the development and application of generative artificial intelligence (AI). Their contributions to the field of Generative Adversarial Networks (GANs), a class of generative models, have been substantial.

The team of researchers at Nvidia has undertaken various projects, one of which is "NVIDIA GauGAN." This particular system utilizes Generative Adversarial Networks (GANs) to transform rudimentary doodles into visually authentic photographs. Researchers have also investigated super-resolution techniques that leverage artificial intelligence (AI) to generate high-quality images from low-resolution inputs. Google, a prominent technology corporation, has made significant advancements in leveraging generative artificial intelligence (AI) in innovative manners. Deep neural networks have been employed in several projects, such as DeepDream and DeepArt, to facilitate the transformation of images into aesthetically pleasing artistic representations. In addition, Google has included generative models in various services, including Google Translate. By employing neural machine translation models, Google Translate is able to achieve enhanced accuracy and produce more natural translations across a wide range of languages. The primary focus of Google's Magenta project revolves around the utilization of artificial intelligence (AI) for the purpose of creating music and art. This exemplifies the significant potential of generative artificial intelligence within the realm of artistic endeavors.

AI as a Game-Changer in Creative Economy

AI has indeed played a significant role in enabling and transforming the creative economy. The utilization of artificial intelligence (AI) has facilitated the production of artistic endeavors, including art, music, and other creative areas. This integration has resulted in enhanced efficiency within the creative process through the automation of repetitive and time-consuming operations (Vedapradha et al., 2019). Furthermore, AI has enabled the production of more content in a cost-effective manner and has been used in the film industry to create special effects and animation. AI technology has also helped generate new ideas and concepts for creative industries. The benefits of AI in the creative sector are numerous, including faster and less costly production, freeing up time for artists and designers to focus on innovative and creative work. However, there are also potential disadvantages to consider when incorporating AI into the creative process. One concern is the potential loss of human creativity and originality in the creative economy, as AI algorithms could generate works that lack uniqueness and emotional depth. This could lead to a world where all creative works start to look or sound the same. IBM points out in its articles that AI has the potential to transform the creative sector by enhancing personalization, increasing efficiency, and driving innovation (IBM, 2016).

Industry professionals must find ways to adapt and integrate AI while preserving the unique human touch that makes creative works special (Bordàs Vives, 2023). It is essential to strike a balance between the potential benefits and disadvantages of AI's use in the creative economy while also considering its ethical and social implications. AI can be applied to tasks that involve pattern recognition, prediction, and decision-making. This includes sectors such as healthcare, finance,

transportation, manufacturing, and retail (Aghion et al., 2018). In the field of healthcare, artificial intelligence (AI) has the potential to be employed for the purpose of analyzing medical images and providing support in the process of diagnosing medical conditions. Artificial intelligence (AI) has the potential to be employed in the field of finance for the purposes of detecting fraudulent activities and managing risks. Artificial intelligence (AI) finds applications in the field of transportation, specifically in the areas of autonomous cars and traffic management. In manufacturing, AI can be used for quality control and predictive maintenance. And in retail, AI can be used for personalized marketing and customer service. These are just a few examples of how AI could impact various economic sectors. The creative economy encompasses industries that rely on creativity, innovation, and intellectual property, such as art, music, film, design, advertising, gaming, and more.

AI has emerged as a game-changer in art and design, presenting creatives with new and exciting opportunities to explore. The advent of generative AI has had a profound influence on creativity and innovation, particularly in terms of its ability to facilitate the generation of several iterations of digital assets. This technology enables creative individuals to enhance their productivity by producing work more efficiently (Anantrasirichai & Bull, 2021). AI can automate creative work, freeing up time for designers to focus on more complex objectives, such as briefing ideation and strategy development. AI can serve as inspiration in the creative process, providing patterns learned from human-generated content that can be used to develop new, imaginative works in the future. The extent to which AI can increase creativity and invention is constrained by its reliance on human input and creative capabilities (Boden, 1998). For genuinely innovative and ground-breaking creative works, the depth and richness of human thought and imagination are essential. AI technologies have been applied to various creative industries, leading to innovative results. One popular AI technology used in the creative industries is the generative algorithm, which is capable of producing artwork with different styles blended. The first-ever cognitive movie trailer for the horror movie Morgan was made by AI. The machine fed scenes from the film and chose tencenes to include in the trailer (Smith et al., 2017). AI can also create the product itself instead of assisting with related tasks, such as generating paintings, melodies, lyrics, photography, and movie scripts (Smith et al., 2017). Artificial intelligence algorithms have the capability to replicate the precise pattern of the creative process, yielding desirable visual results. Additionally, they possess the ability to study a vast number of artworks and afterward make new pieces based on the information acquired via this process. AI is being used to speed up the creative process in the creative industries and automate repetitive tasks such as writing keywords for paintings or brainstorming, designing, and publishing content (Wu et al., 2021). Artificial intelligence (AI) is increasingly being embraced by retail and marketing businesses within the creative sectors due to its ability to facilitate novel associations and conduct searches for interconnected concepts during collaborative workshops. The utilization of image and video data has proven to be highly

advantageous in the training of artificial intelligence (AI) within the creative sectors. The progress made in computational hardware and the abundance of extensive datasets for training purposes has significantly contributed to the advancements of AI in various domains such as content creation, information analysis, content enhancement, information extraction, information enhancement, and data compression. (Anantrasirichai & Bull, 2021).

AI and Business Innovation

Business creativity refers to a cognitive approach that stimulates, confronts, and facilitates personnel in discovering innovative resolutions and generating prospects from challenges (Pagani & Champion, 2022). Organizational innovation refers to the cognitive processes undertaken by individuals within a corporation to enhance the development of its products, services, or management techniques. Creativity is defined as an individual's ability to generate new and original ideas in order to achieve a goal. The use of creativity to solve a problem is referred to as innovation (Neely & Hii, 1998). Innovation and creativity are essential skills for success in any form of enterprise. The process of innovation involves turning the best ideas into reality, which sparks creative thought and a chain of creative events. The process of turning an idea into value, or new value, is known as innovation. (Okpara, 2007) mention that without creativity, innovation is impossible. Companies worldwide are experiencing industry disruptions caused by emerging technology, leading to the need for business model innovation. Artificial intelligence (AI) is considered to be the foremost significant technical advancement in this context. The utilization of creative business models created via its application has the potential to significantly disrupt industries and companies. Artificial intelligence has also been a developing technology for over 60 years, and its impact on business has been tremendous. Artificial intelligence (AI) possesses the capacity to stimulate innovation across multiple dimensions of a company model, encompassing customer segments, customer connections, value propositions, channels, key resources, key activities, key partnerships, revenue streams, and cost structure. When businesses leverage AI, they can gain a competitive edge by improving efficiency and effectiveness in their operations (Lu, 2020). AI also has significant potential for enhancing value and gaining a competitive edge in the corporate sector. Consequently, numerous enterprises are making substantial investments in AI technology to leverage its advantages by means of innovating their business models (Reim et al., 2020). According to a recent study conducted by McKinsey in 2021, a significant majority of senior executives, specifically 77%, expressed the belief that creativity plays an important part in driving organizational growth (Pagani & Champion, 2022). Despite the widespread use of AI in facilitating everyday chores and enhancing efficiency, the emergence of creative AI is poised to contribute significantly to tasks that necessitate human comprehension, hence resulting in a notable surge in productivity. The

findings of a recent study conducted by Nasdaq (2021) indicate that businesses that utilized AI creativity tools for video ad creation experienced a significant increase in return on advertising spend (ROAS) (Pagani & Champion, 2022). The study, which involved a sample of 2,935 respondents, revealed that campaigns incorporating AI creative support demonstrated an average two-fold increase in ROAS compared to those without such support. Furthermore, certain campaigns in the study exhibited up to a seven-fold increase in ROAS.

Innovation in business models refers to the process of creating and enhancing a company's business model (Reim et al., 2020). It involves identifying new ways to create, deliver, and capture value for customers, as well as exploring new revenue streams and cost structures. By adjusting to emerging technologies, consumer demands, and market trends, business model innovation can help organizations maintain their competitiveness in a market that is changing quickly. It can also lead to increased profitability and growth by creating new opportunities for revenue generation (Reim et al., 2020). Companies can proactively use AI technology to drive business model innovation by creating an innovative AI-based culture, This entails utilizing AI to generate innovative disruption through fresh business models and procedures, potentially altering the nature of global competition (Lee et al., 2019). Business model innovation through AI technology can provide sustainable competitive advantages for companies. Additionally, it can help businesses adapt to environmental changes and remain competitive in new environmental contexts. By using AI, companies have the potential to change the global competitive landscape by developing novel new business models and procedures. Among the businesses that have successfully incorporated AI technology into their business models are Amazon, Uber, Tesla, Google, Alibaba, and UPS. These companies have innovated their business models and enhanced their competitive advantages using AI (Lee et al., 2019). Lu (2020) highlights the various ways in which AI can have an impact on the nine elements of a business model: customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure are the business models. Businesses can be framed by these building blocks to design and analyze their business models. By identifying the different groups of customers, they serve or target, the unique value they offer to customers, the ways in which they reach and interact with customers, and the sources of revenue for their business, among other factors, businesses also can identify areas for improvement or innovation. This framework helps businesses optimize their operations and create new opportunities for growth.

There are some examples of how AI improves business model innovation. According to (Lu, 2020), the banking industry can greatly benefit from AI innovation in its business model. One of the key areas where AI can be leveraged is in customer service. AI-powered chatbots can assist customers with more complicated problems, respond to frequently asked questions, and offer round-the-clock customer service. This may result in increased client satisfaction and lower expenses for the bank. AI

can also be used to analyze large amounts of data to identify patterns and insights that can inform strategic decision-making. For example, Banks can analyze transaction data using AI algorithms to spot potential fraud or money-laundering schemes. This can assist banks in preventing financial crimes and safeguarding the assets of their clients. Another area where AI can be beneficial for banks is in risk management. By analyzing data from various sources, including social media and news articles, AI algorithms can help banks identify potential risks and take proactive measures to mitigate them. In addition to these benefits, AI innovation can also lead to new business models and revenue streams that were previously unexplored (Lu, 2020).

In Supply Chain sectors, Artificial Intelligence has the potential to revolutionize the way businesses manage their supply chains. AI-based supply chain management solutions can help organizations tackle challenges and mitigate the impact of market volatility on supply chain and logistics. Alicke et al. (2021) points out that the use of correct AI solutions can provide benefits to supply chains through AI tools, including cost reduction and fostering innovation in supply chain management. AI can also drive efficiency in supply chain management, improving the flow of goods and reducing delays. One significant advantage of AI is its capacity to effectively analyze vast quantities of data, comprehend intricate linkages between various elements, offer enhanced visibility into operational processes, and facilitate improved decision-making capabilities (Alicke et al., 2021). AI tools can collect massive sets of logistic data and present them in a way humans can understand quickly, enabling organizations to see the entire scope of their supply chain, including shipping times, inventory locations, predicted delays, and shortages. Additionally, a comprehensive, integrated approach can address the opportunities and limitations of all business functions, including complicated machine replacement or updates, making AI a potential game changer for mitigating supply chain and logistics challenges. Therefore, the potential impact of AI on supply chain and logistics should be explored to enhance supply chain management (Alicke et al., 2021; Quantic, 2023).

AI can support sustainable marketing practices in marketing sectors by optimizing resource allocation, reducing waste, and targeting the right audience. For example, AI algorithms can analyze customer data and behavior to identify segments that are most receptive to sustainable products or initiatives. This allows businesses to tailor their marketing efforts specifically to those interested in sustainability, maximizing the impact of their campaigns while minimizing resources spent on less relevant audiences. Nalini et al. (2021) point out that AI marketing uses technologies like data collection and analysis to make automated decisions based on audience or economic trends. This enables marketers to quickly analyze a massive amount of data from social media, emails, and the web. Nalini et al. (2021) also point to the importance of AI marketing, as 76 percent of customers want businesses to be aware of their wants and needs. With AI, businesses can communicate with their customers more effectively by tailoring their marketing messages to individual customers.

Additionally, AI can help businesses respond to customer inquiries 24/7 and handle multiple customers simultaneously through chatbots.

According to (Reim et al., 2020) there are challenges when implementing AI. Businesses face several challenges when implementing AI in their business models. The challenges include difficulties with transparency, as AI can be complex and difficult to understand, making it difficult for managers to explain their decision-making processes to stakeholders. Employees may also be skeptical of AI and not trust its recommendations or decisions. Businesses may still rely on analog processes, which can make it difficult to integrate AI into their operations. Businesses may have misconceptions about what AI is and what it can do, which can lead to unrealistic expectations or resistance to implementation. Businesses need to develop a clear strategy for implementing AI, provide training and education for employees, and ensure that they have the necessary infrastructure in place to support AI integration.

Harnessing AI for Sustainable Entrepreneurship

Sustainable entrepreneurship is a new and rising trend in business that involves creating and capturing value in a way that is sustainable over the long term. It focuses on entrepreneurial action that links "what is to be sustained" with "what is to be developed" (Block et al., 2023; Contreras & Dornberger, 2023). Unlike traditional entrepreneurship, sustainable entrepreneurship is not limited to increasing profits, but also involves considering the environmental and social impact of business activities (Zahrani, 2022). Successful startups like Google prioritize sustainability as a foundation of their business, reflecting the increasing importance of sustainable entrepreneurship. Sustainable entrepreneurship training provides the knowledge and abilities to continue in sustainable businesses. Individuals who are taught about sustainability are more likely to want to start their businesses. Entrepreneurship programs teach people how to gain confidence in order to increase their motivation to start businesses (Zahrani, 2022). Sustainable entrepreneurs need to extend their impact beyond local niches for effective sustainability innovations. They may work with stakeholders in the ecosystem around them who have a goal of sustainability (Block et al., 2023).

Entrepreneurs who engage in sustainable practices and develop innovations that provide favorable ecological and social outcomes can be regarded as sustainable goods and service providers. Furthermore, these individuals might be regarded as catalysts for transformation, assuming the inherent uncertainties associated with the pursuit of innovative and environmentally conscious resolutions to societal challenges. Digital technologies have great potential for sustainable entrepreneurship, but technology and entrepreneurial culture are key concerns for sustainable entrepreneurship (Block et al., 2023). Basic algorithms have the capability to be built in a manner that steers artificial intelligence (AI) systems towards corporate behaviors that are both ethical and sustainable. This enables entrepreneurs to make better

decisions by leveraging AI's strength in analyzing large amounts of data (Giuggioli & Pellegrini, 2022; Zhao & Gómez Fariñas, 2023) .In order to address societal issues and use AI techniques to address unresolved societal issues in a quantifiable way, AI powered by data science for social good is able to address societal issues (Zhao & Gómez Fariñas, 2023). AI will be able to help directors make business decisions based on data, and strategic management policies will be strengthened by big data and directors' oversight to help promote sustainability (Zhao & Gómez Fariñas, 2023). In the decision-making phase of sustainable entrepreneurship, AI can help transform available data into accurate predictions. With better prediction, entrepreneurs will be able to develop business models that are more sustainable and environmentally friendly (Giuggioli & Pellegrini, 2022). Thereby, it is evident that AI can play a significant role in promoting sustainable entrepreneurship by providing entrepreneurs with the necessary tools and insights to make informed decisions that prioritize sustainability and corporate social responsibility.

The potential benefits of AI in sustainable entrepreneurship are numerous. AI can help companies develop and implement sustainable policies and decisions that can address sustainability challenges such as climate change, sustainable transportation, agriculture, and circular economy practices. AI can predict the success of environmentally friendly corporate policies with a high level of accuracy. Algorithms can help steer companies toward more environmentally friendly and moral goals. AI can also help companies better understand their ability to generate positive outcomes by organizing ethical goals using a smart system (Zhao & Gómez Fariñas, 2023). To facilitate the generation of synthetic data visualizations, the development of sustainability screens or indices is possible. AI can make suggestions about how to integrate the CSR strategy and policy with the overall business strategy. It can also help achieve distributive justice by making the CSR program more effective (Zhao & Gómez Fariñas, 2023). AI can help companies make better decisions based on reliable information. This can speed up the decision-making process and make it more likely that sustainability policies will work, which is good for the company in the long run and considers the needs of shareholders and other stakeholders (Zhao & Gómez Fariñas, 2023).

AI helps companies in many ways, including making them more efficient and helping them reach their CSR goals by letting boards of directors look at huge amounts of data in real-time and figure out what the best next step should be (Zhao & Gómez Fariñas, 2023). By integrating sustainable practices into each step of the AI process, AI can help achieve sustainable entrepreneurship goals, benefiting both sustainability and business goals. AI for sustainable entrepreneurship can improve corporate CSR programs, opening up new opportunities for companies and their stakeholders in terms of economic value, long-term interests, and social, environmental, and human rights issues. Ultimately, AI in sustainable entrepreneurship can generate economic and social benefits by creating a positive environmental impact, informing companies' resilience to respond to social challenges and sustainability threats, and bringing

efficiencies and innovations to sustainable entrepreneurship (Zhao & Gómez Fariñas, 2023).

Entrepreneurship has been widely recognized as a contributor to economic growth and development (Stoica et al., 2020). According to (Munyo & Veiga (2022), there is a positive and significant relationship between intrapreneurial activity (entrepreneurial activity within existing organizations) and economic growth in their cases is South American countries. The development of AI technology has the potential to contribute to economic growth and innovation in various sectors by improving efficiency and productivity. AI played a transformative role in fostering creativity, driving innovation, and promoting inclusive growth, offering valuable guidance to entrepreneurs and policymakers. AI can accelerate the transition to services economies by emphasizing worker skills to add value to production and products while increasing automation and job losses for low-skill, blue-collar manufacturing workers. Robotics improve packing and inventory inspection, boosting economic growth and innovation (Meltzer, 2018).

By using AI tools, businesses can better manage complex and dispersed production units, improving overall efficiency (Meltzer, 2018). AI improves warehouse management, demand prediction, and just-in-time manufacturing and delivery, boosting productivity (Meltzer, 2018). AI can also be used to improve predictions of future trends and manage risk along the supply chain, enhancing efficiency (Meltzer, 2018; Zhao et al., 2020). The implementation of artificial intelligence is expected to have a significant impact on the global economy, with the potential to increase current global economic output by 16 percent, or approximately $13 trillion, by the end of the year 2030. Additionally, the manufacturing industry is expected to gain $3.78 trillion from AI by the year 2035 (Bughin et al., 2018). According to Purdy & Daugherty (2017), In an AI scenario, information, communication, manufacturing, and financial services will have the highest annual GVA growth rates of 4.8 percent, 4.4 percent, and 4.3 percent by 2035. AI could boost productivity and international trade, a global issue. To maximize AI investments and their complementary investments, skilled people and business practices are needed. Hence, the development of AI has the potential to contribute to economic growth and innovation in different sectors.

AI has been recognized as a tool with immense potential to increase productivity and efficiency in various industries. According to PwC's Global Artificial Intelligence Study: Sizing the Prize (2019), strategic investments in various forms of AI technology are required in order to realize these advantages. Productivity can be increased by using AI technologies to automate tasks and roles. Furthermore, AI technologies have the potential to augment the productivity of the labor force by automating routine tasks. The ability of artificial intelligence (AI) to automate tasks that were previously performed by humans, freeing up time and resources that can be used in other ways, is the true benefit of AI for businesses. Aside from that, AI can enhance customer experiences and offer insights for better decision-making. Since it

has been estimated that AI could increase the global GDP by $10.7 trillion, the potential economic impact of the technology is enormous. A 26 percent increase in China's GDP is anticipated as a result of AI in 2030, while North America is expected to see a 14.5% boost to its GDP due to AI. According to a 2020 World Economic Forum report, the creation of 97 million new roles to fill the work demands highlights the potential benefits of AI in terms of increasing productivity and efficiency. AI could potentially increase productivity and efficiency by creating new roles in the surging industry, thus providing opportunities for growth and development. By automating routine tasks, AI has the potential to increase productivity and efficiency in certain industries. The artificial intelligence that is developing could benefit the workforce by boosting productivity and efficiency. Therefore, AI will lead to a specialization in job roles as well as an increase in the value of "human skills" like creativity, problem-solving, and quantitative skills (Jain, 2021).

CONCLUSION

Industry professionals must be aware of the potential risks and benefits of integrating AI technology into their work in order to take advantage of the opportunities and challenges that AI's integration into the creative process presents. It's critical to strike a balance between the advantages of AI and the preservation of human creativity in the creative industries because AI has revolutionized the creative industry by revolutionizing the traditional creative process. Although AI has a lot to offer in these areas, ethical issues should always be taken into account. When implementing AI solutions in business contexts, it is essential to take into account data privacy protection, decision-making transparency, and addressing potential biases. While AI has a lot of potential, its responsible and inclusive implementation depends on addressing its ethical, legal, and societal implications. To fully utilize AI's benefits while minimizing risks and maximizing its beneficial effects on creativity, innovation, and inclusive growth, collaboration between business owners, policymakers, and AI experts is crucial.

Suggestion

AI implementation in business is not a one-time project but a continuous process that requires constant monitoring, evaluation, and improvement. Implementing AI calls for careful planning, strategy, and execution, in addition to addressing the risks and challenges related to AI, such as data quality, security, governance, and ethics. By carefully assessing the risk and leveraging the benefits of AI in different areas of business, it can achieve business goals and gain a competitive edge in the market.

Future Challenges

Entrepreneurs must think about how artificial intelligence (AI) might affect society and make sure their business practices are sustainable. Some risks were also associated with AI-advanced sustainable decisions (Zhao & Gómez Fariñas, 2023). The legal challenges associated with AI's role in promoting socially responsible businesses must also be addressed. Despite the potential benefits of AI in promoting ethical and socially responsible AI, ethics must be prioritized in AI development. In the context of business innovation and sustainable entrepreneurship, the development of AI has prompted concerns about the moral and ethical obligations of AI users, highlighting the need for a risk-based regulatory framework that permits the use of AI for social and environmental good in order to promote accountable AI and the common good. While trust is required for the implementation of AI-based solutions in the boardroom, an atmosphere of trust and certainty is also required for its successful implementation (Zhao & Gómez Fariñas, 2023). Companies and governments must work together to ensure sustainable and responsible use of AI in business innovation, with the needs of people being given top priority. A suitable regulatory framework would not only establish a consensus regarding the risks to avoid and how to mitigate them, but it would also include enforcement tools to guarantee a reliable and moral use of AI in the boardroom. This would be accomplished by establishing a consensus regarding the risks to avoid and how to mitigate them.A suitable regulatory framework would not only establish a consensus regarding the risks to avoid and how to mitigate them, but it would also include enforcement tools to guarantee a reliable and moral use of AI in the boardroom. This would be accomplished by establishing a consensus regarding the risks to avoid and how to mitigate them.

The potential risks associated with the use of AI in business innovation and sustainable entrepreneurship should not be overlooked, as they can have both positive and negative societal consequences (Giuggioli & Pellegrini, 2022). Some kinds of AI can have such a big effect on a company's finances that they are no longer just used to make strategies more productive but to change the strategies themselves. Even though AI has the potential to boost productivity and efficiency for businesses, there are still a number of methodological issues that must be resolved. Entrepreneurs should think about whether taking the risk of integrating AI and IoT will be worthwhile for their particular business, as doing so can have a variety of costs depending on the type of organization. Entrepreneurs should investigate the potential for adoption within their own businesses in order to identify any unique challenges they may encounter. They will play a significant role in determining the impact of AI on society. These are the challenges and risks of implementing AI in business, but they are manageable with careful planning and execution. A potential disadvantage of incorporating AI into business strategy is that it might eventually be able to take the place of the entrepreneur. Therefore, in order to guarantee that AI analysis is informed by human understanding, entrepreneurs need to be well-versed in the relationship between humans and AI.

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13 DISRUPTIVE INNOVATION IN EMERGING MARKET: SUCCESS EVIDENCE AND ROAD MAP FOR SUSTAINABLE INNOVATION

Logaiswari Indiran, Wiyata, Lie Jingjun, Liew Foong Ching, and Haibing Liu

Abstract:

Disruptive innovation is seen as a driver of industry transformation and has the potential to reshape entire markets, create new opportunities, and bring about significant societal and economic impact. It encourages continuous improvement, competition, and innovation as organizations strive to adapt and stay ahead in a dynamic and evolving business landscape. Besides, disruptive innovations also foster a culture of continuous improvement and progress by encouraging entrepreneurship and innovation, attracting investment, and fostering a culture of continuous improvement and progress. Therefore, this chapter explores the main antecedent variables that drive disruptive innovation toward sustainable innovation across industries. This study is based on the literature that has been published and presents how disruptive innovation creates a new technological cycle as well as a new business innovation cycle. Disruptive innovation seeks to fundamentally alter technology in order to displace the market rather than supporting the core technology that is already well-established and supported by powerful, well-established companies. Furthermore, this study examined instances of successful disruptive innovation in five companies: CRRC Corporation Limited (CRRC) in China, Xiaomi in China, Ola in India, Reliance Jio Infocomm Limited in India, and Grab in Malaysia. Finally, with a focus on promoting sustainable innovation, this chapter provides valuable insights and contributions to both research and practical applications in the domains of disruptive innovation and emerging markets.

Keywords: *Disruptive Innovation, Sustainable Innovation, Emerging Market, Success*

L. Indiran
Department of Marketing and Entrepreneurship Universiti Teknologi Malaysia, Malaysia
Wiyata
Department of Business Administration, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia
L. Jingjun
Universiti Teknologi Malaysia, Malaysia
L. F. Ching
Community College Kuching Malaysia
H. Liu
Management School, Wuhan University of Science and Technology, China

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INTRODUCTION

During the course of the 20th century, the concept of innovation shifted from being an issue that was primarily concerned with technical matters to one that was more openly concerned with issues relating to business and society. Clayton Christensen (1997), a professor at Harvard Business School, is credited with coining the term "disruptive innovation." This term is used to describe a type of innovation that creates new markets and value networks, eventually displacing established market leaders or "incumbents." It is a process in which smaller, simpler, and initially lower-performing products or services disrupt existing markets by offering unique features, lower costs, or improved convenience. This process is referred to as "disruption." In contrast to sustaining innovation, which entails making minor adjustments or enhancements to existing products or services, disruptive innovation involves introducing a fundamentally different approach or technology. These innovations frequently appeal to market segments that have not been adequately served or consumers who do not currently participate. Established players may at first view these disruptive products or services as inferior; however, they have the potential to gain rapid acceptance and market share due to the fact that they are more affordable, more accessible, or feature novel characteristics.

When considering Christensen's definition of disruptive innovation, there are three primary considerations that need to be addressed. First, "disruption" is a relative phenomenon, which means that an innovation may be regarded as disruptive for a focal firm, but it may be considered a "sustaining" innovation for other players in the market (Yu and Hang, 2010). This dichotomy is due to the fact that the definition of "disruption" varies depending on the context of the innovation. Instead, incumbents may choose to continue their operations in a specialised market (Schmidt and Druehl, 2008; Yu and Hang, 2010). Thirdly, while some academics contend that Christensen's concept of disruptive innovation is a post-hoc theory that is unable to provide ex ante predictions (Tellis, 2006), others have suggested that the theory is capable of providing predictive information (Christensen, 2006; Govindarajan and Kopalle, 2006; Schmidt and Druehl, 2008). For instance, Govindarajan and Kopalle (2006) argue that rival companies are able to identify other businesses that are likely to develop disruptive innovations. In another illustration, Schmidt (2004) contends that businesses are capable of determining whether or not a market is prepared to be disrupted. As a general rule, contrary to what Christensen (2006) contends, disruption is not simply defined by the results that the technology produces. According to Teece et al. (1997), in a Schumpeterian world of innovation-based competition, where the argument is made in favor of 'creative destruction' as a means of achieving above-average rates of return, disruptive innovation can be a source of competitive advantage for the firm.

Garcia and Calantone (2002) provide an excellent overview of various interpretations and definitions of the innovation term in their article. The following

listing is provided in order to provide a concise summary of three distinct definition categories: (a) technology maturity performance level (differentiated into incremental and disruptive innovation), according to Christensen (1997), market application and technological novelty (differentiated into application, potential or lateral innovation), as suggested by Christensen (1997); and (c) sphere of action (differentiated into product, process or lateral innovation).

There are two distinct categories of innovations that cause disruption. The first one is when something like this takes place: The industry now offers a new product that is fundamentally distinct from those that are already available. Although initially, it has a lower quality, it has the latent potential to become more modern and take market share from competitors before they even realize what's happening (Boni, 2012). The second type of access to new markets in which the target company's unique product does not yet exist is guaranteed to result in victory. As a result, the purpose of this study is to summarise and categorize the research results of disruptive innovation, as well as to categorize the success factor of disruptive innovation across different industries and countries. In the final section of the report, new insights are proposed for the future roadmap of disruptive innovation, and implications are provided to guide the development of disruptive innovation theory as well as disruptive innovation practise.

2. Success evidence

2.1 Market Understanding and Customer Insight

Successful disruptive innovations frequently result from a deep understanding of customer needs and the challenges they face. Companies with a thorough understanding of their target market can identify opportunities for disruption. According to Guo et al. (2019), when companies learn to view their market position through the customer's eyes, they can identify novel avenues for disrupting related industries. This emphasizes the importance of conducting market research before implementing a disruptive business model to gather customer insights. To understand the customer's point of view, having knowledge and understanding of consumers is critical in a disruptive business model. Therefore, businesses must assess the disruptive potential of various innovations by taking into account a variety of market dynamics, external factors, and technological attributes. Rather than relying solely on numerical indices, businesses should investigate the interplay of various innovation characteristics to assess their disruptive potential (Jei & Bhaumik, 2023).

Airbnb, for example, transformed the traditional hotel industry by recognizing the demand for affordable and distinctive accommodations. Airbnb tapped into the market of travelers seeking more authentic and cost-effective lodging options by providing a platform for homeowners to rent out their unused spaces (Lee et al., 2023). This emphasizes the importance of conducting market research prior to implementing a disruptive business model in order to capture customers' perspectives. Acquiring knowledge and insight into consumer behavior is critical in a disruptive business

model for appreciating the customer's perspective. It focuses on the next step; investors and business owners should develop a new strategic framework to establish a strong global presence (Jei & Bhaumik, 2023).

2.2 *Technological Advancement*

In today's business landscape, technological advancement has emerged as a critical catalyst for disruptive innovation. The rapid evolution and accessibility of cutting-edge technologies are driving this transformation (Yovanof & Hazapis, 2008). As these technologies mature and become more affordable, they enable businesses to challenge industry norms and develop innovative solutions that meet changing consumer demands. Businesses use disruptive innovation to introduce novel products, services, and business models that can revolutionize established markets. Furthermore, technological progress frequently enables the development of more efficient and cost-effective solutions, democratizing access to previously dominated industries. By leveraging emerging technologies such as artificial intelligence, blockchain, the Internet of Things, and advanced data analytics, start-ups, and agile organizations can now compete with industry giants (Brynjolfsson & McAfee, 2014). These advancements enable greater customization, improved user experiences, and the creation of entirely new value propositions. Furthermore, technological connectivity and globalization enable businesses to enter previously untapped markets and collaborate across borders. Because of this interconnectedness, disruptive ideas and solutions spread quickly, hastening their adoption.

In addition, disruptive innovations frequently leverage advancements in technology to create new opportunities. Companies that invest in research and development, stay updated with emerging technologies and find innovative ways to apply them can gain a competitive edge. One example is Tesla, which disrupted the automotive industry by developing electric vehicles with advanced battery technology and autonomous driving capabilities. Tesla's use of electric power and focus on sustainable transportation transformed the perception of electric vehicles and challenged the dominance of traditional automakers (Tiku, 2023). A successful disruptive innovation often demands an innovative business model enabled by technological innovation. Profitability of a new product can erode rapidly if it is not designed to be updated quickly and if it cannot be marketed and serviced cost-effectively (Deloitte Research, 2004). However, for high-end disruptive innovation, the role of entrepreneurs' innovation willingness is not significant, possibly because entrepreneurs' innovation willingness is not sufficient in high-end disruptive innovation (Chen et al., 2017).

Furthermore, dominant incumbent corporations with significant market influence are primarily responsible for the introduction and dissemination of disruptive technologies in markets. Nonetheless, smaller entrant firms can bring about game-changing innovations; however, they must contend with the significant financial resources required for pioneering new technologies, as detailed in Caner et al.'s 2016 study. This financial challenge explains the formation of strategic alliances

and partnerships between certain incumbent and entrant firms in order to advance disruptive technologies. These collaborative efforts mark a new chapter in the evolution of business strategies based on innovation.

2.3 Business Model Innovation

The innovation of business models has emerged as a critical component in the process of driving disruptive innovation within a variety of industries. It involves making fundamental adjustments to a company's core strategies, processes, and value propositions, which frequently results in the development of entirely new business models. According to Filser et al. (2021), the most promising trends in business model innovation are sustainability, dynamic capabilities, and the involvement of small and medium-sized enterprises. This business model innovation strategy is essential to the process of disruption because it enables businesses to question preexisting standards, present novel value propositions, and enter market niches that had not been investigated before. According to Chesbrough and Rosenbloom (2002), the innovation of a business model constitutes a strategic shift that redefines the way in which businesses operate, how they provide value to customers, and how they capture revenue. Businesses are able to recognize and capitalize on opportunities that threaten the status quo of existing markets if they rethink their business models. According to this point of view, product or service innovation can be either sustaining or disruptive, depending on the underlying business model. Therefore, it is clear that embracing disruptive innovation frequently necessitates the adoption of a new business model. Incremental innovation is concerned with improving existing products or services, whereas radical innovation is concerned with the incorporation of new technologies, which include novel methods, processes, systems, and skills used to transform resources into products (Yovanof & Hazapis, 2008). As a result, emerging and innovative business models have not only survived but have also effectively caused industry disruption in this competitive landscape (Jin & Shin, 2020).

For instance, Uber's disruptive impact on the traditional taxi industry developed not only from its innovative technology but also from its new business model, which connects drivers and passengers via a digital platform, fundamentally altering the transportation sector's dynamics. This model connects drivers and passengers via a digital platform, fundamentally changing the dynamics of the transportation sector. This emphasizes the importance of business model innovation as a driver of disruptive change, allowing companies to challenge the status quo and redefine their respective industry landscapes.

Furthermore, disruptive innovation frequently involves a novel business model that provides distinct value propositions. Companies that rethink traditional business models and develop new ways to deliver products or services have the potential to disrupt established markets. Netflix is a prime example, having disrupted the video rental industry by introducing a subscription-based online streaming model. Netflix revolutionized the way people consume entertainment by providing

unlimited streaming of a wide range of content for a fixed monthly fee (Sehnem et al., 2022).

2.4 Agility and Adaptability

In today's rapidly shifting business landscape, agility and adaptability have emerged as crucial factors that play a pivotal role in driving disruptive innovation. Companies need to quickly respond to these shifts in order to remain competitive and relevant in their respective industries, which are experiencing constant technological advancements, shifting consumer preferences, and changing market dynamics. This requires the ability to switch gears, try new things, and make adjustments to one's strategy on the fly. According to Rane & Narvel (2021), agile organisations are able to proactively identify emerging trends, customer needs, and potential disruptions, which enables these organisations to position themselves strategically in the market. In addition, adaptability involves the capacity to evolve and iterate quickly in response to market feedback, customer behaviour, and the competitive landscape, as stated by Guo et al. (2019). Businesses that place a higher priority on these characteristics are better able to harness disruptive innovation, which allows them to seize opportunities and stay ahead of the curve. This is especially clear in fields such as technology, where companies such as Apple and Amazon have repeatedly shown their capacity to adapt and disrupt markets via customer-centric strategies and agile product development. As a result, entire industries have been remade as a result of their innovations (Brown & Anthony, 2011).

Successful disruptive companies are often agile and adaptable, willing to experiment, iterate, and pivot based on market feedback and changing circumstances. By embracing a culture of continuous learning and agility, these companies can respond to emerging trends and customer demands effectively. An example is Amazon, which started as an online bookstore but quickly expanded into various product categories, leveraging its infrastructure and customer-centric approach to disrupt the retail industry. Amazon's ability to adapt and innovate has allowed it to become a global e-commerce giant.

2.5 Disruptive Innovation Process

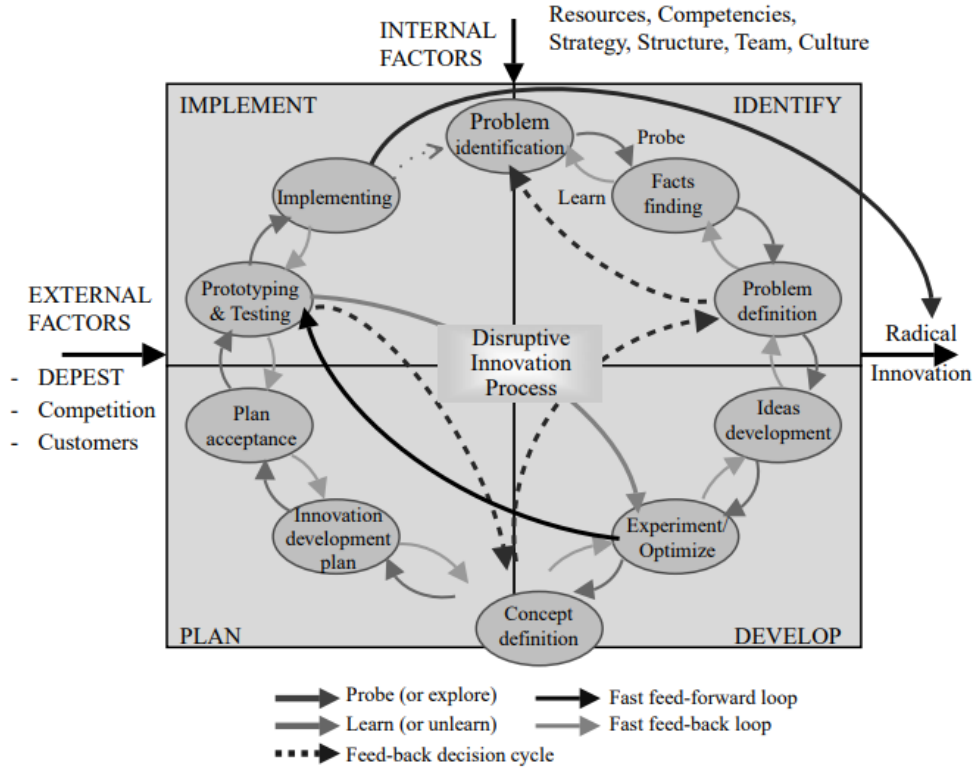
The innovation process serves as a cornerstone and a key factor for disruptive innovation, as it provides the framework for systematically conceiving, developing, and implementing groundbreaking ideas that challenge existing norms and markets. Disruptive innovation often involves the creation of entirely novel products, services, or business models, and an effective innovation process is essential for realizing these disruptions. As highlighted by Christensen in his seminal work (1997), disruptive innovation begins with the identification of opportunities in underserved or overlooked segments of the market. The innovation process allows organizations to explore these opportunities, foster experimentation, and iterate rapidly to refine concepts and solutions. It involves a willingness to take calculated risks, as disruption often entails uncertainty and market resistance. The process also demands a customer-centric approach, as understanding evolving customer needs and preferences is

crucial for driving disruptive change. By adhering to a well-structured innovation process, organizations can systematically nurture and scale disruptive ideas, ultimately reshaping industries and outperforming established competitors. This is exemplified by companies like Netflix, which disrupted the traditional video rental market through a continuous innovation process that evolved from DVD rentals to streaming services (Christensen, 1997).

Furthermore, a disruptive process innovation occurs when one or more process steps are replaced by a low-performance inferior process that provides a low-cost overall solution. For such process reengineering, the importance and worth of each process step must be understood in relation to the product's value chain (Petzold et al., 2019). While market expectation management and piloting challenges are associated with process innovation, pure-play challenges (managing financial resources while not limiting cash flow) are widely recognized as a challenge for both product and process disruptive innovation. To respond to the identified challenges, the new entrant must develop the following capabilities: a) alliance capability; b) inter-organizational capability; and c) participatory management style. Furthermore, they must secure investment from sources such as governments that are aware of the timetable for developing such innovations. Based on our findings, we proposed three hypotheses to be tested (Radnejad & Vredenburg, 2019).

Figure 1 depicts the intricate nature of the disruptive innovation model clearly. It illustrates a complex and dynamic process with a spiral or circular development pathway. As Assink's research in 2006 articulated, this pathway involves a continuous and rapid exchange of information via feed-forward and feedback loops, ultimately resulting in the creation of radical, disruptive innovations. Furthermore, the figure 1 shows that this disruptive innovation process is not isolated; it occurs within a larger context of various influential factors. External determinants such as economic conditions, social dynamics, political landscapes, competitive pressures, and infrastructure state all have an impact on this process. These external determinants can either help or hinder progress, emphasizing the importance of adaptability and responsiveness in the innovation journey. Concurrently, internal determinants such as available resources, organizational structures, and corporate cultures come into play. These internal factors have a significant impact on how well an organization navigates the disruptive innovation process. They have an impact on resource allocation, decision-making processes, and the organization's overall innovation mindset.

Fig. 1 The intricate nature of the disruptive innovation



Source: Assink (2006)

2.6 Capability To Unlearn

Disruptive innovation often requires organizations to challenge existing assumptions, beliefs, and practices. It involves introducing new ways of thinking, behaving, and operating that may contradict or challenge the established norms within an organization. Unlearning refers to the process of letting go of old knowledge, beliefs, and practices to create space for new insights, perspectives, and approaches. It involves questioning deeply ingrained assumptions, embracing uncertainty, and being open to new ideas and paradigms. Unlearning is essential for organizations to break free from traditional thinking patterns and embrace the mindset required for disruptive innovation. Brown (1998) argues that changing the mental models of the corporation and its underlying business models are amongst the hardest things to change. Previous business successes and success formulas often retard rather than enhance the capacity to unlearn (Baker and Sinkula, 2002). The music industry clung to a mindset from the old order and paid a high price for holding back the tide of the new online music business led by Apple's iTunes, Music Store and iPod (Wind and Crook, 2005). Enterprise software (ERP) was developed by SAP, not by IBM or Microsoft; mobile phones with cameras were invented by Ericsson and Sony, not by market leader Nokia. The power structure of the organization generally determines which mental models are adopted. Kenneth Olsen used a brilliant model for minicomputers to build DEC into a powerhouse but became so attached to this successful model that he was blindsided by the rise of the personal computer. Inward

focus, which often reinforces the “not invented here” syndrome and groupthink, is one of the traditional barriers to innovation. Most companies looking for a stable environment fall into the learning trap, a tendency to keep doing the same thing even in situations where it is no longer effective (Assink, 2006).

3. Disruptive innovation Road Map for Sustainable Innovation

In a world that is altering at a breakneck pace, innovation is more than just a buzzword; rather, it is the essential engine that powers both progress and sustainability. In other words, innovation is the essential engine that powers both progress and sustainability. It has become an absolute necessity for companies and industries of every stripe to adopt disruptive innovation, which calls into question previously held beliefs and paves the way for long-term shifts in the status quo. This journey towards sustainable innovation requires a well-structured road map that directs businesses in harnessing the power of disruptive technologies and strategies to not only thrive in today's competitive landscape but also contribute to a more sustainable future. This is because disruptive technologies and strategies are expected to have a significant impact on the future of business. Because of this, businesses will have the opportunity to innovate in ways that are friendlier to the environment. In this discussion of the "Disruptive Innovation Road Map for Sustainable Innovation," this study will delve into the principles, strategies, and real-world examples that demonstrate how organisations are using disruptive innovation to create long-lasting, positive impacts on society and the environment while also securing their positions as industry leaders. The study also discusses how these companies are utilizing disruptive innovation to ensure that they will remain at the forefront of their respective industries.

Disruptive innovations, on the other hand, have the remarkable effect of shifting the technology trajectory away from the previously predicted dashed curve and towards a more solid and tangible curve. This transformation emphasizes the fundamental nature of disruptive innovation as a process rather than a single event, as Christensen and Raynor elucidated in 2003. Organizations face the paradoxical challenge of balancing efficiency in the present while also fostering effective innovation for the future in today's fiercely competitive business landscape. Corporations, regardless of their structural makeup, must manage both of these aspects concurrently. To achieve this delicate balance, organisations must gain a thorough understanding of and expertise in dealing with the complex dynamics of innovation that underpin both disruptive and sustaining innovations.

It is worth noting that many previous analyses have fallen short by undervaluing the intricate interplay between changing needs and evolving technologies. Using a dynamic model that takes these interactions into account, we can identify three distinct patterns of substitution that vividly illustrate how these two forces interact. Recent empirical studies on innovation management have convincingly demonstrated a consistent yet troubling pattern of outcomes. A common

narrative emerges across a range of industries studied: leading firms struggle to maintain their industry dominance in the new technological era in the face of discontinuous change. This theme, as highlighted by E. Deming, a pivotal figure in the modern quality revolution, is recurring and pervasive, spanning diverse industries such as watches, automobiles, cameras, stereo equipment, radial tyres, hand tools, machine tools, optical equipment, airlines, and colour televisions. The next section discuss on the success evidence and road map for sustainable innovation.

3.1 CRRC Corporation Limited (CRRC) from China

CRRC Corporation Limited (CRRC), a well-known Chinese company, enjoys the distinction of being the world's leading supplier of rail transit equipment. CRRC is a monument to revolutionary industry leadership, exemplifying strategic-driven innovation. CRRC's formidable opponents in the vast world of global rail transit transportation equipment manufacture include Japan's Kawasaki Heavy Industries, Canada's Bombardier, and the formidable combination of Siemens from Germany and Alstom from France. Notably, CRRC distinguishes itself with an optimal blend of cost and uncompromising quality, emphasizing its competitive advantage.

According to publicly available data, CRRC's booming prowess translated into a commanding 70% market dominance in 2019. Despite initially being outpaced by Kawasaki Heavy Industries and trailing the technical prowess of the Siemens and Alstom Consortium, CRRC has ascended to the echelons of the world's premier transportation equipment supplier, owing to its strategic disruptive innovation. Strategic assistance is vital to this transformative journey, acting as a dynamic driving force supporting CRRC's continuous evolution. Concurrently, technical innovation emerges as a critical channel for CRRC's transcendental advancement, paving the route to extraordinary expansion and distinction (Chen et al., 2020).

Prior to 2004, CRRC strategically capitalized on China's comparative advantages in railway resources and proceeded on a complete restructure of its business portfolio, leveraging both internal and external strengths. The major goal was to progress considerably in a less technologically advanced environment. This ambition prompted CRRC to take a forward-thinking strategy, incorporating the ideas of introduction, assimilation, and re-innovation. CRRC bolstered China's railway technology by leveraging established foreign technological foundations and applying these external ideas to drive expansion and fortification. CRRC increased its commitment to indigenous innovation in the early stages of 2008, with a focus on brand nurturing and the development of core competencies. The corporation proactively widened its horizons as the chronology unfolded and CRRC's high-speed rail technology advanced, fitting harmoniously with China's worldwide goals. The emphasis has moved to cultivating long-term company competitiveness based on sustainable values. CRRC is now a steadfast presence in the global high-speed rail manufacturing market (Chen & Mei, 2018). CRRC has advanced to an eminent global position by adroitly steering through intelligent and comprehensive initiatives, which

are anchored by its stepwise and astute approach. CRCC is an example of successful disruptive innovation in emerging markets (Chen et al., 2020).

3.2 Xiaomi from China

Xiaomi, a well-known Chinese internet business, focuses on mobile phones, smart devices, and IoT platforms. Since its foundation in 2010, Xiaomi has experienced quick and dynamic growth, emerging as a model of business model innovation within China's corporate environment. This spirit of disruptive business model innovation pervades all of Xiaomi's ventures (Chen et al., 2020). The unique combination of price and ecosystem integration is at the heart of Xiaomi's disruption. Xiaomi drastically shifted the value offer for consumers by selling smartphones at cost and generating money from a varied range of services such as apps, themes, and accessories (Song et al., 2019). In addition, Xiaomi's cultivation of a strong fan group on social media and internet platforms strengthened its relationship with users. Xiaomi developed a sense of ownership among its customers by actively incorporating user suggestions and wishes into product development. It also modified its offers to closely meet shifting preferences (Tan & Prabhu, 2020).

Furthermore, Xiaomi's disruptive business model innovation went beyond smartphones, embracing a vast ecosystem of interconnected devices ranging from smart home gadgets to wearables and beyond. As a result, Xiaomi emerged as a tempting alternative, competing for attention in China's youth-oriented consumer market against industry titans such as Apple and Samsung. This strategic and disruptive business model innovation demonstrates Xiaomi's potential not only to prosper but also to influence industry norms, redrawing the outlines of the brand and market dynamics for Chinese domestic mobile phones (Chen et al., 2020; Raju & Holm, 2019).

3.3 Ola from India

Ola is an Indian ride-hailing and transportation network firm launched in 2010 by Bhavish Aggarwal and Ankit Bhati. Its ground-breaking platform has transformed how people in India and other nations access transport services. Customers may book various sorts of rides, including taxis, auto-rickshaws, electric vehicles, and more, using Ola's user-friendly smartphone app, making urban commuting more comfortable, accessible, and efficient (Bhagavatula et al., 2019).

Ola is an excellent example of a disruptive invention that has altered India's traditional transportation environment. Ola's debut in the transportation sector upended the traditional taxi industry by providing a less expensive alternative to regular taxis. This provided mobility alternatives to a bigger population that had previously relied on public transportation or had limited access to private cabs. IT used smartphone technology and mobile apps to instantly connect riders with available drivers. This innovation removed the need for passengers to hail taxis on the

street, eliminating uncertainty and waiting periods (Saqib & Satar, 2021). Furthermore, it presented a variety of service alternatives to meet the needs of various customers, ranging from budget-conscious riders to those wanting premium experiences. This diversification enabled Ola to appeal to a broader consumer base and upset traditional taxis' one-size-fits-all strategy. Finally, it added electric vehicles to its fleet, boosting ecologically friendly commuting options and impacting the future trajectory of the transportation sector (Bhalla, 2021).

3.4 Reliance Jio Infocomm Limited from India

Reliance Jio Infocomm Limited, or Jio, is an Indian telecommunications and digital services firm. It is a subsidiary of one of India's largest conglomerates, Reliance Industries Limited. When Jio started in 2016, it upended the Indian telecom business. Its debut into the Indian telecom sector created significant disruption by offering low-cost data plans, free phone calls, and high-speed 4G internet services. This innovative pricing plan resulted in extensive data consumption and internet access across the country. It employs a variety of options, including low-cost data plans, free voice calls, and high-speed data access(Yadav & Gupta, 2020). Furthermore, Jio established a robust digital ecosystem that comprised its suite of apps and services, including JioTV, JioCinema, JioSaavn, and others. These apps provide users access to a variety of entertainment, such as movies, TV series, music, and news. It also debuted the JioPhone, a low-cost 4G-enabled feature phone. This change provided digital connectivity to an even greater number of people, particularly in rural areas (Athique & Kumar, 2022).

The disruptive entry of Jio resulted in a dramatic shift in the Indian telecom industry. It sparked fierce rivalry among existing telecom providers, forcing them to decrease prices, enhance services, and invest in network equipment in order to remain competitive. This competition benefited consumers by providing them with more inexpensive and superior communication services (Modi, 2023).

3.5 Grab from Malaysia

Grab is a Southeast Asian digital startup that originated as a ride-hailing platform in Malaysia in 2012 and has expanded into a comprehensive super-app. It was founded by Anthony Tan and Tan Hooi Ling to address concerns with traditional taxi services by providing clear pricing and convenient ride booking using a smartphone app (Zhang et al., 2023). Grab identified an underserved and overlooked segment of the market in Southeast Asia, where the existing taxi infrastructure often struggled to meet the demands of consumers. By recognizing this gap and leveraging technology, Grab created a solution that addressed the unmet needs of commuters and travelers in the region.

However, Grab quickly broadened its scope to include services other than transportation, including food delivery (GrabFood), package delivery (GrabExpress), digital payments (GrabPay), and more. This diversification was made possible by the

company's notion of a super-app, which provides consumers with many services on a single platform (Chaemoon, 2023; Chai & Amaral, 2022). Importantly, Grab has fostered a customer-centric approach, actively seeking feedback and evolving its services to meet changing consumer preferences. This responsiveness to customer needs aligns with the principles of disruptive innovation, where a focus on evolving customer requirements can lead to transformative change. Besides, Grab continually innovates by introducing new features and technologies to enhance user experience and efficiency. Features like GrabRewards, a loyalty program, and GrabInsure, insurance coverage for driver-partners, demonstrate the company's commitment to innovation.

Despite regulatory difficulties and external disruptions such as the COVID-19 outbreak, Grab's path from a ride-hailing startup to a major regional technology force represents the evolution from a ride-hailing startup to a pivotal regional technology force. It is one of the classic representative disruptive innovation examples in Malaysia.

CONCLUSION

In conclusion, this chapter underscores the pivotal role of disruptive innovation in driving industry transformation and its profound potential to reshape markets, generate fresh opportunities, and yield significant societal and economic impacts. It is evident that disruptive innovation promotes a culture of continuous improvement, competition, and entrepreneurial spirit within organizations, serving as a catalyst for adaptation and progress in today's dynamic business landscape.

Furthermore, our exploration of the antecedent variables that steer disruptive innovation toward sustainable innovation across various industries sheds light on the transformative power of this concept. Drawing on a comprehensive review of literature spanning nearly three decades, from 1995 to 2023, this study has elucidated how disruptive innovation engenders not only new technological cycles but also fresh business innovation cycles. By challenging the status quo and seeking to fundamentally alter technology to displace existing markets, disruptive innovation represents a force of change that extends beyond the realm of established technologies and powerful corporations.

In summary, this chapter makes valuable contributions to both research and practice in the realms of disruptive innovation and emerging markets, emphasizing the crucial role of disruptive innovation in fostering sustainable innovation. As we move forward, it is imperative that organizations and policymakers recognize and harness the potential of disruptive innovation to drive positive change, promote sustainability, and usher in a new era of innovation and progress across industries and markets.

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14 DIGITAL LEARNING CULTURE IN DYNAMIC CAPABILITIES AND FINANCIAL ASPECT AS MEANS FOR CREATIVE INDUSTRY *SMES* TOWARDS DIGITAL BUSINESS

Swasta Priambada

Abstract

It is almost certain that the number of Small and Medium-sized Enterprises (SMEs) type is greater than other types of businesses in a country. SMEs have a critical role in the citizen economy in the country because they have the potential to provide a decent income and profession for the majority of citizens, like a handful of people working in the formal sector and large, well-established companies. Digital Business Transformation (DBT) offers many opportunities for businesses to increase their profit. Big companies tend to have adequate resources to undergo DBT. Nevertheless, the potential for DBT is the right of large companies and SMEs. However, it is a challenge for SMEs to undergo DBT while lacking resources. DBT requires the readiness of digital technology infrastructure, business model changes, financial aspects, and the decisions of owners and/ and managers of SMEs to transform. Therefore, there is a need to first understand digital literacies through digital learning cultures and search for further opportunities to have quality development, such as government donating facilities and customer social responsibilities (CSR) from big companies. Creative industry (CI) businesses that are based on thinking, skill, creativity, and talent have enormous beneficial potential if it is supported by digital technologies as an approach to undergoing DBT. In the early steps, they could minimize their operational cost by using free social media as digital marketing. Continuously, by implementing Dynamic capabilities (DCs) to address the challenges of the uncertain business environment through utilizing current and potential resources.

Keywords: *DCs, CI businesses, digital learning culture, DBT, SMEs, the financial aspect*

S. Priambada
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
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INTRODUCTION

The creative industry creates a lot of hope for many people to build their businesses based on their talent, creativity, and thinking, which is supported by the existence of Intellectual Property (DCMS 1998; O'Connor 2009). There are a lot of creative and talented people, starting from artists such as singers, dancers, and comedians as a part of performing art, and painters until entrepreneurs based on computer programs and processing can lay on their businesses in the group of this creative industry sector (CIS).

The contribution of the creative industry sector is significant in many countries globally. However, because of the pandemic COVID-19 spread, the sector has been hit hard by approximately 20% to 40% losses in its contributions to the economy across countries cultivated in 2020, well as the impact of many workers of CIS losing their jobs probably almost 10 million which indeed will have a hard impact on the livelihood of creative workers (UNESCO 2021). Therefore, adopting digital technologies for achieving Digital Business Transformation (DBT) as an approach to sustaining the CI businesses is crucial, particularly due to the physical distancing policy to protect people's bodies' health from viruses. Applying digital technologies for big creative industry businesses like in Hollywood or Bollywood, India (Stephanie, Sharma & Ramasubbu 2012) is probably easier as they have enough resources and financial aspects to fulfil the need for adopting technologies for achieving DBT status.

In the music industry, some superstars like Michael Jackson, Phil Collins, and Queen band have reached the maturity of their transformation step by step in all fields of industries such as stage performance, the change in their recording from cassette type, CDs, phonograph record, and YouTube. Even Fredy Mercury, who was the former vocalist and leader of the Queen band, has been filmed by the fans based on documentary files (Vanessa Djendri 2020) and became popular in 2018, although Fredy passed away (R.I.P) on 24 November 1994. Similarly, Didi Kempot, a famous artist in Indonesia, was also supported by marketing online systems through social media, such as YouTube and Instagram. His fans reached peak popularity in his career in 2020 before he passed away because of sickness (Sartono 2019).

Some examples above have shown that the role of digital technologies in digitalizing its business model as well as the team of the artist to support digital marketing as the approach for still sustain in the different eras is crucial. According to Matt, Hess, and Benlian (2015) and Hess et al. (2016), there are four strategic dimensions for digital (business) transformation: the use of technologies, changes in value creation, structural changes, and financial aspects. The artists above have offered new value for their customers with the use of technology. Further, the management team behind them as structural changes for promoting their transformation with adequate financial also has been fully supported.

DISCUSSION

The potency of CIS in Indonesia needs to be explored more to ensure the sustainability of the prosperous/wealthy (de-Miguel-Molina et al. 2012) or financially successful (Chaston 2008) through DBT and intellectual property (IP). Why DBT and IP? DBT provides an opportunity to broaden the market segment globally, not only in the local area of the city or province or even nationally, DBT supports the product of CIS globally around the world (de Berranger & Meldrum 2000), which could increase the wealth of owners or/and managers of CI businesses as well as to support the income of the local government for example through tax payment (Fischer). The role of the IP is an honor for the creator of his work creativity (de-Miguel-Molina et al. 2012). However, how could the aims be achieved? That will be the research question in this paper.

Theoretical Foundation

Some theoretical studies, particularly those related to information system and strategic management, has underpinned this paper. The creative industry sector (CIS) is a sector that consists of a collection of creative industries sub-sectors such as advertising, crafts, and television and radio (13 sub-sectors), according to The UK Department of Culture, Media, and Sports (DCMS) (DCMS 1998) and becoming 16 subsectors when adapted in Indonesian context according to Creative Economy Agency/Badan Ekonomi Kreatif (BEKRAF) (BEKRAF 2015), and has been separated again into 17 subsectors in 2020 following the policy of the Ministry of Tourism and Creative Economy/Kementrian Pariwisata dan Ekonomi Kreatif (KEMENPAREKRAF) of the Indonesian Government (KEMENPAREKRAF 2020). See Table 1 below for more details.

Table 1. Comparison of categorization of the Creative Industry Sector in the United Kingdom and Indonesia

The United Kingdom: DCMS (1998)	Indonesia: BEKRAF (2015)
1. Advertising	1. Advertising (*periklanan*) 2. Visual communication design
2. Architecture	3. Architecture 4. Interior design
3. Art and antiques markets	5. Fine arts (*Seni rupa*) 6. Photography
4. Computer and video games 5. Software	7. Games (*) and application
6. Crafts	8. Crafts (*kriya*)
7. Design	9. Product design
8. Designer fashion	10. Fashion

9. Film and video	11. Film, animation, and video
10. Music	12. Music
11. Performing arts	13. Performing arts (*seni pertunjukan*)
12. Publishing	14. Publishing (*penerbitan*)
13. Television and radio	15. Television and radio
	16. Culinary

(*) The games and applications were separated in 2020 (KEMENPAREKRAF 2020), therefore, since this year, the sub-sector has been 17 in amount.

Dynamic Capabilities (DCs) is a theory that is based on the capabilities of a firm to face the uncertain business environment by using `current resources (Teece, Pisano & Shuen 1997).In this paper, the DCs, concerning digitalization or DBT, have been particularly used in the term DCs in DBT. DCs in DBT have consisted of digital sensing, seizing, and transforming (Warner & Wäger 2019). Digital sensing consists of, first, digital mindset crafting, which pointed on the understanding of definition, benefits on challenge on DBT. Therefore, digital learning as a way to form the digital mindset crafting is necessary to realize the digital sensing. According to Sousa and Rocha (2019), digital learning is a process to improve the quality of understanding of digital sources (material, tools, and skills) to have a digital literacies.

Second is digital seizing, which is particularly weight on creating strategies for implementing DBT. The owners and/and managers of CI businesses need to consider the digital environment and ecosystem including infrastructure and facilities to ensure that they support the DBT process as well as minimise the risk of failure while undergoing DBT; and third, digital transforming that consists of using digital technologies and improves the digital maturity continuously.

However, it is noticed that although the infrastructure and facilitation for undergoing DBT is ready, the mindset of digital crafting and the understanding for undergoing DBT is less awareness, and the DCs process is not easy to undergo. Therefore, as the focus is on the early step process of DBT, it is necessary to take into consideration the role of the digital learning step which is included in digital mindset crafting.

DBT is usually implemented in big companies that have adequate facilities, infrastructures, financial aspects, as well as human resources who mostly understand the process of DBT . However, in this paper, Small and medium-sized enterprises (SMEs) business type often lack digital literacies of huma resources. Therefore the effort for addressing the issues will be discussed later in below.

Strategic management is a concept that aims to achieve the goal in an effective and efficient approach which can be addressed by implementing competitive advantage (Porter & Heppelmann 2014; Stonehouse & Snowdon 2016). Concerning DBT, the use of digital technologies is integrated into the components of digital strategy. According to Matt, Hess and Benlian (2015), there are four components of digital transformation strategies: first, organisational structure, second, the change of

value proposition, third, the use of technologies, and fourth, financial aspects. In this paper, the fourth component, the financial aspect has taken to be the weight factor that need to be considered due to mostly SMEs is lack of this aspect. The more detailed financial aspect discussion has been described below together with the digital learning effort to boost the process of DBT implementation. Uniquely, digital learning is also found in the strategic management. Particularly, when the learning digital capability of Information Technology (IT) or Information Systems (IS) to strengthen their digital skills happened by learning from previous experience, the success and failure in the past and not appreciating the challenges until they find them. Sousa et al also added from their study that the digital skill for artificial intelligence, nanotechnology, robotization, internet of things, augmented reality, digitalization as well as the knowledge for using digital tools or digital contexts such as smartphone applications, mobile phones and tablets is necessary.

DBT implementation in some CIS

The discussion process of how DBT has been undergone has been described in some example of the sub-sector of CI Eight sectors of CI (are presented in the sub-chapter as representative for CIS as listed by The UK Department of Culture, Media, and Sports (DCMS 1998) as a foundation of the group of creative industry classification broadly. The DBT components will be focused on the two vital components: digital learning culture for pursuing the digital literacies and the financial aspect as a strategic component of digital strategy. The DBT implementation was inseparable from the understanding of the business process, which is the setting up of the actors, events, and the role of the game of business series of activities (Betzwieser, Levkovskyi & Krcmar 2020).

The first example is culinary art. Usually, the outcome of culinary art is a physical product. Som, first, the product needs to be digitized. After that, the picture could be uploaded to social media or website to get the customer; Secondly, the transactions could be hybrid which means after dealing with the price and amounts of pieces that will be taken by the customer, further, the payment evidence could be shared to the SMEs CI of culinary art by using social media, WhatsApp for example. Finally, the SMEs deliver the physical product to the customer's home.

Game and application is the second example of the CI subsector. The product of games and applications is indeed a digital product which has a form such applications or software. When it has been launched to the open public, it needs to download process from the Play Store application from a personal computer (PC) as well as in a smartphone with an operating system (OS) such as Android or iOS. Commonly, the owners and/or managers of this CI subsector have a high digital capability maturity and they tend to still have a digital learning culture to not miss the latest technological development trends due to the high need to create the application program in the competitive business environment. Further, concerning the cost of following the technology trend, it is common that the updated digital technology that

has more efficient and effective results has a high cost that consequently needs to be aware of the business owner in the game and application subsector of CI.

The third subsector is advertising. This sector is almost similar to the game and application, advertising as a CI subsector is common to open their offer to the public in various media such as Instagram and Facebook WhatsApp—although it is especially for the relation who have the owner or/managers contact. This CI subsector usually opens advertisements if they can help the customer create a design for promoting the customer's product. The concept of thought, which is sent by the client further, is written down and given to the creator. The creator then tries to make the advertising design until the customer has taken the approval. If not, the Adverting CI business will give the design back to the creator until there is an agreement on each other and finally, the transaction payment is made.

The digital learning culture is widely known for the CI subsector, like the advertising that is based on digital technologies, particularly creative applications. Therefore, the digital culture is not a big problem for CI advertising. It could be continued while adjusting to the new application, with concern about the cost of the updated technologies. However, the essential point is the creation of the CI business that cannot be stopped offhand.

The fourth subsector is music. The business process of music CI subsector of music follows the trend of digital technologies in every momentum year by year, particularly for increasing the performance of value creation offerings to the customers. The music industry, for example, in the Netherlands used MP3 sound compression in 1993, then transformed through using internet facilities (after 1995), "essentially dematerializing the music product into digital files" to replace the need to press the music on physical media (Geurts & Cepa 2023).

After understanding the business process that involves the role of digital learning for achieving digital literacy as well as preparing the financial budget for supporting the DBT process, the SMEs of CI businesses need to consider the current condition of their business and the next step for DBT.

First, the step is aware of the trend that emerged in the business environment. The awareness could be by making an effort to understand the phenomena of DBT that is in general, the shifting from offline to online regarding digitalised business functions (marketing, productions, human resources and financial). The use of (digital) technologies is not mandatory in the high price, but it is recommended to adjust the financial budget depending on the ability of each subsector of the Creative Industry (CI). Even free use of applications and social media is suggested as the business type is SMEs, with mostly in the moment, lack of financial resources.

Second, looking into their current status business of CI, do they have digital capability maturity in law or advance, and what is the effort to fill the gap of understanding or digital literacies they have? If it is a problem considering that undergoing DBT is not always running smoothly and contains some challenges and even risks that cover the failure of DBT, such as throwing a lot of money to buy a

package of a new system but the system cannot run; consequently, the transformation will be useless.

To minimise the risks and decrease the gap in understanding digital literacies, the ways to use the free or/and subsidised events by the government (sometimes collaborative with CI communities) as digital ecosystems supported are necessary. Although the events do not always match with the issues the owners or/or CI managers in business face in daily life, however, in the little doses could be an inspiration to find a way to address the problem. It is usual in the events they will see their peers in some frequency of thinking to develop their business quality performance through DBT.

The environment for example using a meeting room or/and the creative building built by the government or /and collaborations with corporate social responsibility (CSR) which is mostly big businesses that have a willingness to support the quality performance of CI SMEs is also useful. Commonly, the building has adequate digital tools and facilities to create the product of CI, such as music recording, videography, games and applications for creating the software or digital application, as well as virtual reality for film and animation, and last but not least is also facilities to show in art galleries (see https://mcc.or.id/).

In short, the role of collaboration between the government and the CI communities is necessary as the success factors supporting DBT in CIS, particularly in SMEs type. With working cooperatively to support CI SMEs, including the training, seminar, and digital learning development program which take and gives about the material learning, the financial aspects 9often supported by the government visually), and the management financial aspects for the digital online financial transaction by the banks, many problems that emerged could be addressed if the designs, strategies, materials, and the momentum to conduct the event is well organized, step by step and not instantly, but continuously.

Therefore, combining the awareness and readiness of DBT and the business ecosystem and environment could be the early ways to enrich the self-confidence of owners and/or managers of CI businesses to digital transformation as the step to digital transformation through DBT.

Third, digital transformation is the peak of awareness or digital sensing and digital seizing components of Digital transformation in Digital Transformation (Warner & Wäger 2019). The reason why owners and/or managers of CI businesses need to know more before digital transformation is the expectation that digital technology can help and support their business performance, including the running of their business model and process. The business model draws on how the CI businesses operate their business to create, provide, and generate value from the businesses to their customers (Delmond et al. 2017), while the business process illustrates the process of business activities step by step to operate step by step including the set up of the actors, events and the role of each human resources (Betzwieser, Levkovskyi & Krcmar 2020).

Therefore, after understanding the business process and conducting digital learning to combine this for digital literacy, the owners and/or managers of CI businesses could focus on the role of financial aspects to support their DBT. Some alternative ways to receive money source for undergoing DBT, particularly for SMEs, i.e., from Government donations (although with competition with the peers) from entrepreneur awards competition—because the government needs to select some of the best entrepreneur actors due to the use of limitation of government budget and supporting money from the big companies customer social responsibility could be the ways. However, the CI businesses SMEs are mostly not in under profitable condition to place in this position. Ideally, they can step by step collect money from their profit to make a private budget for undergoing DBT, including the human resource team specifically for IT/IS or called structural changes (Matt, Hess & Benlian 2015) and the digital technologies adapted. However, in some cases, it is difficult and too ideal to be achieved. Therefore, the possible approach that can be done is minimalizing the operation cost for undergoing DBT/ For this aim, collaborating with the CI businesses with high digital capability maturity could also be a choice. Indeed, with the provision of a working agreement that benefits each other, not the otherwise, one party feels that he/she must be paid as a professional contract agreement due to his/ their job. It is difficult to achieve with SMEs that mostly lack financial resources or are in financial crisis (Wang, A. Walker & Redmond 2011). Like it or not, the owners and/or managers of CI businesses can utilise the peers forum that opens the opportunities to work together both physically and online. From the meeting that could be designed or spontaneously and get in touch to take the same understanding to aid each other for working together, then it would be the trust for addressing collaboration challenges. The cost and benefit need to be counted early in the collaboration because that is a business that the goal is getting profit. The Figure 2 illustrates how the motivation of owners or .and managers of CI businesses for undergoing DBT with emphasising the digital learning (as a part of DCs, particularly digital sensing) and the strategic management especially financial aspects accurately for the effort of undergoing DBT.

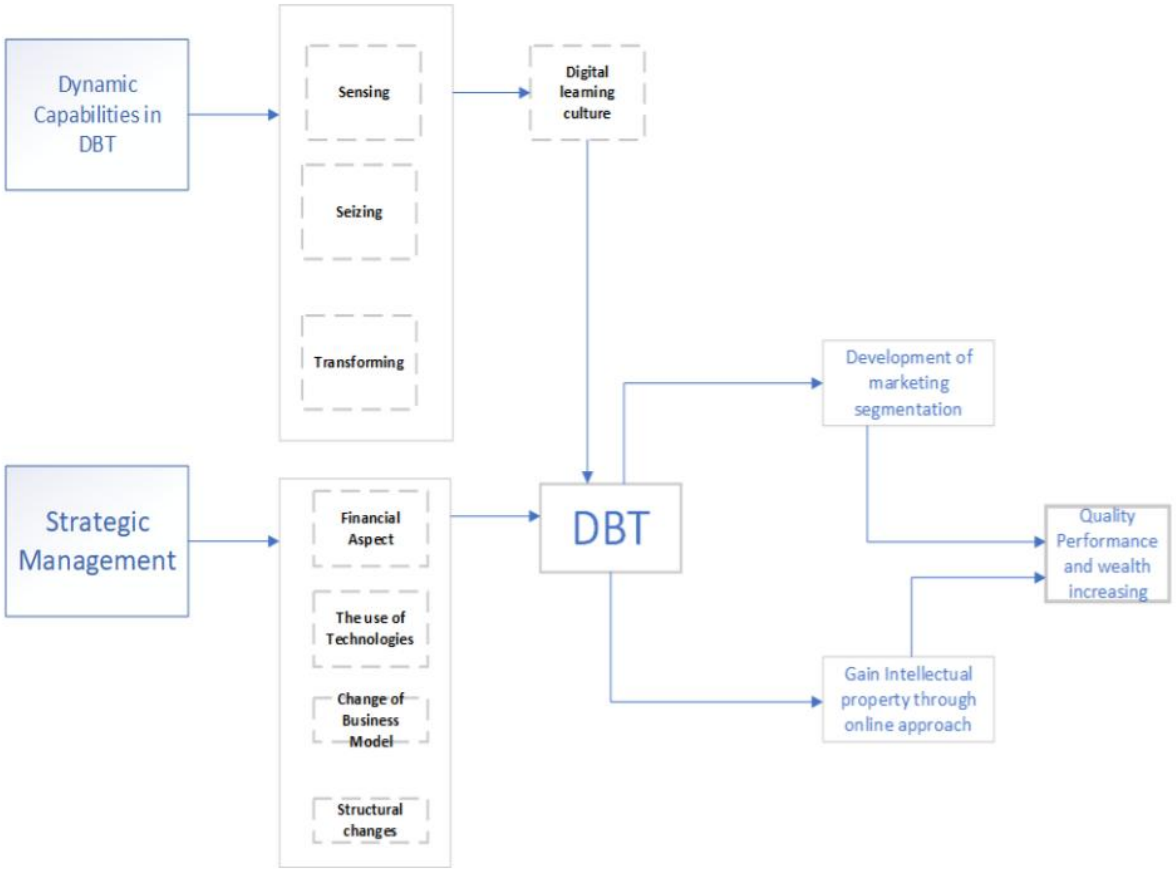

Figure 2. Working model of the financial aspect and digital learning culture role in DBT for the prosperousness of CIS

After all the effort for digital learning and get financial resources with collaboration with the peers and other business entities has been done, the approach for getting benefits from free digital technologies tools such as free social media for marketing could be the alternatives ways. There is a huge potences for using social media, such as Instagram, WhatsApp, Facebook, and YouTube for increasing the profit (Priambada 2015). The digital market place from communities also could give benefits if there is an agreement and understanding to work together. Furthermore, as SMEs on CI businesses which recognition to intellectual property (IP) is vital and also becoming one of priority that need to be addressed, the online government application for getting the IP can be found in the link for https://www.dgip.go.id/ from the Director General of Intellectual Property, Ministry of Law and Human Rights the Indonesian Government, for instance need to be tried and to be done as well as business license from the Ministry of Investment that could be achieved in online (link https://ui-login.oss.go.id/register). As individuals or teams manage this requirement, the owners and managers must think step forward, especially for the sustainability of their CI businesses. The other other choice for getting fund is from bank loan. However, there is a need for owner/or/and managers CI businesses to

learn more the financial literacy and how to manage debt with adequate the rest of businesses profit or in other word utilize the loan money from the bank effectively and efficiently. There is no reason to easily trust to the online creditor that offer for loaning money easily but otherwise they take the high interest from the payment that often happened under the debt collector coercive physically action to grab money back. All of the owners or/and managers of CI businesses need to be considered for this phenomenon in the digital era and also understand that this is the side and negative effect of online financial loan with non-adequate legal requirement because mostly the person or payment body is illegal or not under the law.

In sum, all of aspects for digital learning and financial aspects need to be taken into important points as an approach to undergo DBT. The resource form government such as Creative industry production house facilities and the contents of digital material from the CI communities training and seminar which is created with collaborating with government and other stake holders like bank , CSR from big companies supported need to be noticed as a way to develop the quality performance. The financial resource from the individual investment for digital technologies, using free social media until utilise the government donations also need to be considered. Some risks while getting loan from the bank or financial body also must be checking in detail before approving to loan money.

CONCLUSION

CIS is the sector that has a huge potential to be supported by each government in the world because each country also has an enormous number of talented, creative people. This sector mostly contributes a significant percentage to the Product Domestic Bruto (PDB), which is the indicator economies used across the country globally. The benefits of supporting the CIS could be created that CI businesses, government, and CI Communities have good cooperation and collaboration in the development of each CI business quality performance, not only CI big enterprises but particularly CI SMEs that generally have a lack of resources in financial and digital literacy, for instance.

Therefore, the focus for addressing the problem needs to be taken into account. The lack of digital literacies could be fulfilled by government support to build creative studios at affordable cost as well as to arrange adequate internet networks with digital tools such as affordable smartphones. However, in developing countries, this duty is not only sticking to the government. The CSR program from the big businesses and the attention from the CI communities and the banks for the financial aspects are also vital for the sustainability of CI SMEs. Their collaboration with mutual cooperation could be the weapon to address the issues, although the challenges are everywhere due to the uncertainty of the business environment.

DCs and strategic management through digital learning in digital technologies, digital context, and business processes could be the answer to the sustainability of CI SMEs. The culture of working hard continuously can be the characteristic of successful

SMEs to increase their status to achieve quality performance especially by undergoing DBT to enhance the market environment on and relation around local, national, and international environment make the aim is possible to be achieved.

Lastly, for the practical contribution, the culture to collaborate, and have mutually cooperation between CI business, government and CI communities as well as stake holders related need to be still maintenance and developed. This chapter demonstrates the components of DC (especially digital learning) and strategic management (particularly financial aspects) important for enhancing digital literacy to support digital business transformation. Further research may develop mixed methods research to explore in more detail the role of CI business, government and the CI community to enhance CI business DBT.

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15 MAKING GREEN ENTREPRENEURSHIP: DEVELOPING SUSTAINABLE ENTREPRENEURSHIP

Edlyn Khurotul Aini and Eliana Sandy Yuliaji

Abstract

Climate change demands an urgent shift towards sustainable consumption and production. Previously, sustainability was considered secondary for companies. However, it is now acknowledged that for a truly green economy, sustainability principles must be integral from the outset across all industries. This transformation requires innovative entrepreneurs ready to tackle today's social and environmental challenges. Entrepreneurship, traditionally hailed for spurring innovation and economic dynamics, is now also seen as a vehicle for sustainability. With the growing environmental awareness, green entrepreneurship or "ecopreneurship" has taken center stage. These entrepreneurs, blending profitability with societal impact, have the potential to redefine entire industries. They don't merely reduce their environmental footprint but launch initiatives empowering communities, generating jobs, and prioritizing planetary health. The Green Entrepreneurial Orientation (GEO) strategy emphasizes profit and conservation. While green entrepreneurship is under research, deeper insights are needed into balancing environmental objectives with financial success. This chapter delves into the concept of green entrepreneurship with a more comprehensive and holistic perspective, addressing not only the immediate benefits but also the long-term implications and ripple effects on the broader ecosystem.

Keyword: *Green entrepreneurship. Sustainable business practices*

E. K. Aini · E. S. Yuliaji
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
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INTRODUCTION

In the current global context, climate change is becoming an increasingly burdensome shadow, prompting us to revisit consumption and production mechanisms toward sustainability (Sun et al., 2019; Tseng et al., 2013). Numerous studies highlight how climate change exacerbates the impacts of industries that previously overlooked sustainability, emphasizing the need for integration between economic growth and sustainability principles involving social and ecological aspects (for instance, Gupta & Vegelin, 2016; Haris, 2003; Moldan et al., 2012; Swart et al., 2003). Previously, the focus was on how existing companies could enhance their environmentally friendly operations (Fernandez, 2022). However, a growing awareness suggests that a green economic vision will fully materialize only if we implement sustainability principles across the entire industry spectrum, from small to large scale, from the beginning (Loiseau et al., 2016). Hence, a transformation towards a 'greener' economy requires leadership from dedicated entrepreneurs motivated to devise innovative business solutions relevant to today's social and environmental challenges (Haldar, 2019; Polas et al., 2022).

In line with this, Wei et al. (2023) and Demirel et al. (2019) assert that at the heart of economic development lies entrepreneurship, traditionally celebrated for its catalytic role in spurring innovation, creating job opportunities, and enlivening economic dynamics. Recent empirical observations underscore a trend depicting a growing consensus among business leaders about the necessity of sustainability-centered strategies in the current competitive landscape, and a sentiment predicted to strengthen in the future (Chen et al., 2022). Many executives affirm a significant increase in their organizations' commitment to sustainable practices in recent years, with solid plans to deepen this commitment. Several leading companies have committed to sustainability principles and environmental impact reduction (Polas et al., 2022). For example, Unilever, through its "Unilever Sustainable Living Plan," has concentrated its efforts on minimizing environmental impacts and enhancing social welfare (Lawrence et al., 2018). Tesla, with its focus on electric vehicles, aims to reduce greenhouse gas emissions and support the transition to renewable energy (Akakpo et al., 2019; Aybali et al., 2017). Similarly, companies like IKEA, Patagonia, and Starbucks have implemented initiatives centered on sustainable production, waste reduction, and fair-trade principles (Brockhaus et al., 2017; Enquist et al., 2015; Ottman, 2017). This emphasis on sustainability reflects corporate social responsibility and is recognized as a strategy bolstering long-term growth and competitiveness (Zhao et al., 2023).

These observations mirror a broader global sentiment that places sustainability not as an option but as a business imperative (Cavicchi & Rocchi, 2010). Operationally, implementing sustainable practices has proven to yield efficiencies in production and consumption processes, consequently reducing costs and boosting profitability

(Sullivan & Gouldson, 2013). Additionally, sustainability is increasingly becoming an attraction factor for investors and other stakeholders, who see sustainable values as an indicator of a company's long-term performance (Porter & Kramer, 2011). Therefore, besides offering direct financial benefits, sustainability is key to building a positive corporate reputation and image (Arrive et al., 2019). Beyond the business realm, the public increasingly perceives companies as agents of social and environmental change, making sustainability an aspect that no company can overlook, regardless of its operational scale (Braccini & Margherita, 2018). Stakeholders, including consumers, now often associate their purchasing decisions with a company's social and environmental responsibility, indicating a strong economic incentive for sustainably-operating companies (Danciu, 2013). Studies also show that companies committed to sustainability tend to have higher employee engagement levels, promoting productivity, innovation, and talent retention (Dhiman & Marques, 2011). Thus, sustainability has become the new standard in business operations and a primary indicator of long-term competitiveness and success.

However, with the increasing demand to be more environmentally friendly, a need to reimagine and align business operations with the concept of entrepreneurship emerges. Over the past two decades, the trend of green entrepreneurship has gained significant attention, in line with growing awareness of the adverse effects of climate change on our ecological systems (e.g., Allen & Malin, 2008; Neumann et al., 2022; Tien et al., 2023). Critical voices, ranging from regulators, environmentalists, and policymakers to international conglomerates, emphasize the importance of this adaptation (Linnanen, 2002). Green entrepreneurship refers to entrepreneurs starting businesses based on sustainability principles (Neumann et al., 2022). They are often called ecopreneurs (Kirkwood and Walton, 2010). These businesses not only generate personal profits but also deliver significant societal impact.

Moreover, if they can expand their markets, they have the potential to transform entire industries towards sustainability (Kemper et al., 2019). Nikolaou et al. (2018) state that green entrepreneurs play a crucial role in the economy due to their significant contribution to job creation. Green entrepreneurship is no longer a fringe concept. Modern businesses, informed by global environmental challenges, are increasingly exploring sustainable alternatives. This has triggered a surge in demand for eco-friendly products and services (Gliedt & Parker, 2007). Recognizing and responding to this shift, many businesses are integrating sustainability into their core strategies, striving to strike a balance between commercial objectives and environmental sustainability (Allen & Malin, 2008). Hall et al. (2010) assert that sustainability has become a primary business strategy, and entrepreneurship is essential to a more sustainable society.

In addressing global environmental issues, many organizations have expanded their responsibility scope beyond merely reducing their environmental footprints

(Derev'yanko et al., 2020). They proactively launch comprehensive initiatives, including but not limited to community empowerment, creating significant employment opportunities, and introducing product solutions that are not only economically profitable but also committed to planetary well-being (Choi and Gray, 2008; Hoogendoorn et al., 2019; Ploum et al., 2018). In entrepreneurship increasingly focused on sustainability, the concept of Green Entrepreneurial Orientation (GEO) has emerged (e.g., Guo et al., 2020; Jiang et al., 2018; Pratono et al., 2019). This is a strategic approach that pursues business opportunities by involving economic profit and environmental sustainability aspects. Through Green Entrepreneurial Orientation, companies promote developing and launching products and services, prioritizing ecology and conservation (Gibbs & O'Neill, 2014). However, while many studies have explored the potential and benefits of green entrepreneurship (e.g., Guo et al., 2020; Jiang et al., 2018; Pratono et al., 2019), there's still room to understand further how Green Entrepreneurial Orientation can bridge environmental preservation objectives with optimal financial and non-financial performance achievement.

Discussion

1. The Concept of Sustainability and Sustainable Development

Sustainability has become a crucial topic of global discussion, especially in the last decade (e.g., Brennan et al., 2011; De Giacomo & Bleischwitz, 2020; McKinnon, 2010; Sharma et al., 2010). According to Sartori et al. (2014), sustainability is defined as the processes and mechanisms to achieve sustainable development goals. Conversely, Dovers & Handmer (1992) describe it as a process of "deliberate change and improvement." Sustainability itself refers to the ability of a system to function and persist over a long period. Sustainable development, as defined by the World Commission on Environment and Development in "Our Common Future" (Brundtland Commission, 1987), is the process that meets the needs of the present generation without compromising the ability of future generations to meet their needs. Although both focus on long-term conservation and balance, sustainable development is more complex, combining three pillars: economic growth, environmental protection, and social justice, seeking ways to achieve growth while considering social, economic, and environmental impacts (WCED, 1987). However, in practice, realizing this concept requires a comprehensive approach, especially in the business world, which often becomes a source of environmental and social problems.

Historically, businesses have been blamed as the main culprits for environmental degradation, ranging from greenhouse gas emissions to water pollution (Ajide et al., 2023). Many large-scale industries, such as mining, manufacturing, and conventional agriculture, have significant environmental footprints (Dean & McMullen, 2007). However, ironically, in the contemporary business landscape, some companies have

transitioned and become leaders in promoting sustainable practices. An interesting example of this phenomenon is the emergence of companies in the organic food sector (Ferrari et al., 2023). They have managed to avoid the negative impacts of conventional farming practices, such as the excessive use of pesticides and chemical fertilizers that can harm ecosystem balance. As emphasized by Jolink & Niesten (2015), these companies not only avoid the "disvalue" from externalities associated with conventional farming but also offer added value to consumers who have a high concern for environmental and social issues.

However, to truly understand the role of business in the context of sustainability, it's important to view it in a broader spectrum (Du et al., 2022). Not all companies have the ability to fully transition to a wholly sustainable business model quickly. Therefore, there is a need for companies to create sustainable transition strategies, allowing them to gradually integrate sustainability principles into their operations (Bansal & DesJardine, 2014). Furthermore, there is a need to redefine business success. So far, business success has often been measured solely by financial profit. However, in the era of sustainability, further considerations regarding the environmental and social impacts of business activities are needed (Lankoski, 2016). This requires a paradigm shift from business stakeholders, from shareholders, management, to consumers.

In line with this, in the business world, there are many theories discussing sustainability. One of them is the "Stakeholder Theory" introduced by Edward Freeman in 1984. This theory emphasizes that in conducting business, it's essential to consider the interests of all parties, not just shareholders, but also communities, the environment, and employees. Then there's the "Circular Economy," which differs from the traditional business model. While businesses typically focus on production, consumption, and disposal, the circular economy encourages recycling and reuse, aiming to reduce waste and utilize resources more efficiently. Additionally, there's the "Sustainable Value Chain" which underscores the importance of applying sustainability principles at every business stage, from sourcing raw materials to selling products to consumers. All these theoretical developments indicate optimism in the business world to start adopting the concept of sustainability.

2. Green Entrepreneurship

Traditionally, entrepreneurship has been synonymous with fostering economic growth, concentrating on generating self-employment opportunities to yield financial gains (Segal et al., 2005). These conventional models also perceived entrepreneurship as a conduit for job creation, predominantly framing it within the context of catalyzing economic expansion (Sarango-Lalangui et al., 2018). Regrettably, this stance glaringly omitted considerations for social and environmental factors (Álvarez-García et al., 2018; Sarango-Lalangui et al., 2018). Yet, the landscape of entrepreneurship is in flux. Mounting apprehensions concerning environmental challenges from various quarters, including

governmental bodies, non-governmental organizations (NGOs), and scholars, have prompted a seismic shift in this outlook (Aghelie et al., 2016). This transformation is further galvanized by the advent of the sustainable development paradigm (Kerlin, 2010). This shifting dynamic has compelled numerous scholars to contend that entrepreneurship's core essence must transcend the mere generation of wealth (Rodríguez-Espíndola et al., 2022; Schaltegger and Wagner, 2011; Terán-Yépez et al., 2020). Indeed, as highlighted by Dean & McMullen (2007) and Anand et al. (2021), entrepreneurship possesses the potential to be a formidable vehicle, steering economic domains toward the overarching objective of sustainable development.

In the present context, the concept of sustainability is assuming greater prominence, giving rise to an intensified scrutiny of green entrepreneurship (Trapp& Kanbach, 2021). A multitude of scholarly investigations has been undertaken to probe how the concept of Green Entrepreneurship (GE), exemplified by works like Demirel et al. (2019), is emblematic of environmental responsibility pursued without forsaking economic considerations. This notion, accentuating environmental sustainability, took root around the 1960s, an outcome of the realization of the detrimental repercussions of industrialization and the attendant imperative for environmental regulation (Thompson et al., 2011). In subsequent decades, diverse industries and nations have embraced and tailored this green entrepreneurial framework, underscoring its adaptability across various contexts, such as the wind energy sector in the USA (Sine & Lee, 2009) and the recycling industry in New Zealand (De Bruin & Lewis, 2016). This discourse posits that individuals who amalgamate environmental consciousness with entrepreneurial initiatives will be at the vanguard of steering the transition towards an eco-friendlier economy (Schaper, 2010). This burgeoning line of study predominantly germinates within the realm of management and business fields, albeit occasionally with limited engagement with the more established realms of entrepreneurship areas (Thompson, Kiefer & York, 2011).

This paradigm shift represents a significant departure from perspectives that perceive economic development and environmentalism as mutually exclusive (Welford & Jones, 2016). Instead, it posits that the burgeoning realm of green entrepreneurial activity will play an increasingly pivotal role in shaping future market success (Demirel et al., 2019). This concept hearkens back to the foundational notions of entrepreneurship, reminiscent of Schumpeter's vision, wherein entrepreneurial activity is characterized as a process of creative destruction (Muangmee et al., 2021). Within this framework, entrepreneurs introduce novel products, processes, and methodologies that challenge and overturn established norms. As innovation stands at the core of entrepreneurship, green entrepreneurs undertake the role of disruptors, dismantling prevailing production methods, products, market structures, and consumption patterns, only to replace them with environmentally superior alternatives (Silajdžić et al., 2015). This process is

instrumental in fostering the dynamics of environmental advancement (Schaltegger, 2002).

Green Entrepreneurship (GE) emerges as a subset of sustainable entrepreneurship, harmonizing economic, social, and environmental dimensions into its operational fabric (Cohen & Winn, 2007; Hockerts & Wüstenhagen, 2010; Lüdeke-Freund, 2020). These entrepreneurs, driven by the pursuit of profitability, emphasize the congruence between their ventures and ecological sustainability objectives (Hasan et al., 2019). Their strategic undertakings not only address environmental concerns but also strategically cultivate economic value through innovative resource utilization (Song et al., 2021). The trajectory to enduring business prosperity necessitates the fusion of inventive solutions with adept risk management strategies amidst the uncertain landscape (Zucchella & Previtali, 2018). In a world characterized by the constant evolution of governmental policies, shifting consumer behaviors, and the unrelenting challenges posed by global environmental exigencies, the role of green entrepreneurs assumes heightened significance. These innovators are compelled to maintain a stance of perpetual innovation, consistently devising sustainable solutions that align with the evolving demands of the times.

Scholarly literature substantiates the pivotal role of green entrepreneurship in creating environmental value, driven by motives transcending mere profit (Haldar, 2019; Hasan et al., 2019; Muangmee et al., 2021). Especially in developing and underdeveloped nations, green entrepreneurship has emerged as a vital instrument to confront environmental challenges (Muangmee et al., 2021). As advocated by Ebrahimi & Mirbargkar (2017), through a focus on environmentally friendly innovations and sustainable solutions, green entrepreneurship unites economic and ecological facets, culminating in a favorable impact on our planet. In adopting this approach, entrepreneurs aspire not solely to attain positive financial outcomes but also to diminish environmental footprints, stimulate prudent resource usage, and foster shifts in behavior toward more sustainable lifestyles (Le Loarne Lemaire et al., 2022). Aligning with this, Haldar (2019) posits that green entrepreneurs transcend the role of mere innovators of eco-conscious products and services; they function as harbingers of social change, augmenting public awareness about sustainability. Within local economies, these entrepreneurs assume a pivotal role by collaborating with local producers, advocating for sustainable agricultural methods, and creating job opportunities (Marjerison et al., 2021).

Green entrepreneurship assumes a significant mantle in the mitigation of environmental impact (Dean & McMullen, 2007). Their efforts to introduce sustainable products and services augment the array of choices available to consumers, prodding them towards environmentally conscientious decisions (Cohen & Winn, 2007). Moreover, they wield substantial influence in shaping policies by advocating for sustainability (Hockerts & Wüstenhagen, 2010). Many among them are fervently devoted to projects that enrich the quality of life for local communities, such as environmental education initiatives or ecosystem restoration

(Ardoin et al., 2020; Thompson et al., 2011). Collaborative engagement with diverse stakeholders, encompassing governments, NGOs, and other business sectors, ensures that sustainability endeavors have a more extensive and enduring impact (Gast et al., 2017). The overarching role of green entrepreneurship resounds as a testament to its significance in fashioning a more sustainable future (Lüdeke-Freund, 2020). Amidst the backdrop of intricate environmental challenges, green entrepreneurship radiates as a beacon of innovation and transformation, paving the way for the harmonization of economic progress and ecological well-being.

3. Strategies for Developing Sustainable Entrepreneurship

The prevailing demands of the modern economy have incited a call for change in the entrepreneurial sector. Schaltegger & Wagner (2011) argue for a holistic approach to entrepreneurship that not only pursues commercial goals but also addresses social and environmental concerns. This sentiment is further reinforced by Shepherd & Patzelt (2011), who believe that the secret to truly impactful and growth-oriented businesses lies in the integration of sustainability. Over the last decade, there's been a noticeable shift among businesses toward scrutinizing the ecological and societal consequences of their operations (Aghelie et al., 2016). This shift indicates a departure from the conventional business mindset, which was largely fixated on economic gains, towards a more encompassing model that factors in non-economic benefits (Urbaniec, 2018).

This reimagining of entrepreneurship has given rise to the idea of sustainable entrepreneurship (SE), also termed "sustainopreneurship," by several people (Munoz & Cohen, 2018; Aghelie et al., 2016). SE, rooted in the triple bottom line (TBL) principles, signifies a commitment to three essential pillars. It prioritizes environmental stewardship, ensuring minimal harmful footprints. Simultaneously, it highlights societal inclusivity, accounting for the needs of a broad spectrum of stakeholders. Furthermore, while profit-making remains an integral component, SE dictates that such endeavors shouldn't jeopardize environmental or social integrity (Aghelie et al., 2016; Urbaniec, 2018). In our ever-evolving business landscape, sustainable entrepreneurs are emerging as the torchbearers of this paradigm shift. Their role extends beyond mere profit generation; they are entrusted with balancing economic success with societal and environmental considerations (Belz & Binder, 2017).

Transitioning to sustainable entrepreneurship requires a strategic roadmap. Comprehensive self-evaluation, aligning operations with TBL principles, is the starting point (Munoz et al., 2018). Moreover, entrepreneurs stand to benefit immensely by actively engaging with stakeholders, thus enriching their sustainability-driven strategies (Terán-Yépez et al., 2020). As SE is a fluid concept, continuous learning is pivotal (Johnson & Schaltegger, 2020). Gleaning insights from industry stalwarts, benchmarking against best practices, and even learning from past

oversights can offer invaluable lessons (Bertello et al., 202). Embracing innovation, especially with an emphasis on sustainability, will not only meet present-day demands but also fortify businesses for the future (Ameer & Khan, 2022).

Another accelerant in this journey is collaboration. By joining hands with NGOs, government entities, or other businesses, sustainable initiatives can reach a wider audience and have a more pronounced impact (Bandell, 2017). Such synergies can pool resources, insights, and expertise, fostering an environment where sustainability becomes a communal objective (Knoppen & Knight, 2022). These collective ventures can set the stage for addressing pressing global challenges. In conclusion, the roadmap to sustainable entrepreneurship is intricate, requiring businesses to overhaul traditional approaches. But by intertwining economic ambitions with ecological and social responsibilities, businesses can not only leave a lasting positive imprint but also ensure their longevity in a capricious market. With perseverance, ingenuity, and teamwork, sustainable entrepreneurship can redefine the bond between commerce and our world, promising a brighter future for all (Knoppen & Knight, 2022).

4. Role of Government and Policies

Indonesia, with its unparalleled biodiversity, has recognized the urgent need to transition to a more sustainable development model (Rahma et al., 2019). In line with global awareness of the importance of sustainable development, Indonesia has adopted a series of laws and policies supporting green entrepreneurship. The Law Number 32 of 2009 on Environmental Protection and Management serves as a cornerstone for environmental protection initiatives in the country. This requires companies to operate under environmentally friendly principles. Additionally, the Law No. 25 of 2007 on Investment, though focusing on investment aspects, emphasizes commitment to social and environmental responsibility for both local and foreign companies.

In the energy sector, the Presidential Regulation on New and Renewable Energy reflects Indonesia's ambition to transition to cleaner energy sources. The government provides incentives for businesses in this sector. Energy efficiency also becomes a priority, with policies designed to drive emission reduction initiatives across various industries. In 2019, Indonesia demonstrated a strong commitment to the green economy by joining the P4G, oriented towards green growth. This alignment is further strengthened with Indonesia's leadership in the G-20 meeting presidency in 2022, embodying the spirit of “Recover Together, Recover Stronger”. However, while these efforts are commendable, there is criticism regarding the government's execution and implementation of policies. Many observers believe that there's still a gap between policy rhetoric and its real-world application. At times, overlapping policies from different governmental bodies can create confusion for entrepreneurs. Bureaucratic obstacles and a lack of coordination often hinder the implementation of

green entrepreneurship. Funding availability and resources for training and development are also often insufficient.

To ensure industry players receive full support, the government has set fiscal and non-fiscal incentives for those committed to sustainable business practices. However, beyond the tangible, the government's role in shaping mindsets cannot be underestimated. Forums, conventions, and business events have birthed a community of green entrepreneurs, fostering a spirit of collective responsibility and collaboration. The evolving green entrepreneurship ecosystem, further bolstered by the nation's favorable stance towards impact investments, promises not just economic prosperity but also harmonious coexistence with nature. Nevertheless, as environmental dynamics and business needs change, regulations and the government's role in Indonesia regarding sustainability must continue to evolve positively. This is to ensure that green entrepreneurship continues to receive the necessary impetus to grow and adapt in an ever-changing scenario.

5. Overcoming Barriers and Future Outlook

Sustainable entrepreneurship, recognized as a transformative approach to business, has not been without its challenges. Funding constraints, often cited as a significant obstacle, have hindered the scalability of green initiatives (Neuman, 2022). Yet, proactive measures from financial institutions, including the provision of special grants and low-interest loans, present promising solutions to this funding gap (Cervelló-Royo et al., 2020). Additionally, the importance of integrating sustainability into traditional business education cannot be overstated. As observed by Munawar et al. (2023), there is a dire need for educational curricula that incorporate sustainable business practices, ensuring future entrepreneurs are equipped with the necessary knowledge.

Regulations play a pivotal role in shaping the trajectory of sustainable ventures. Governments have the potential to accelerate the growth of green businesses by offering clear sustainability guidelines, tax incentives, and streamlined bureaucratic processes (Hwang et al., 2017). Public awareness and consumer attitudes are equally influential. However, infrastructure remains a pressing concern, especially in emerging economies. The lack of efficient transportation or renewable energy sources can be formidable barriers, underlining the importance of infrastructural investments. Collaborative efforts could be the linchpin in advancing sustainable entrepreneurship. Partnerships bridging businesses, NGOs, and governments foster a synergy that could amplify sustainability efforts.

Looking ahead, there's a palpable optimism surrounding sustainable entrepreneurship. Increasing global environmental consciousness is spurring a demand surge for green products and services (Lin & Chang, 2012). This demand, combined with the relentless march of innovation, positions sustainable businesses at the cusp of an innovation renaissance. The interplay between sustainability and

emerging technologies, such as AI and IoT, will redefine business operations, optimizing resources and enhancing efficiency (Xue et al., 2022). Furthermore, investment trends pivoting towards sustainability signify a broader global shift in economic priorities. Global collaborations, an inevitable evolution, will be characterized by shared resources and knowledge exchange, boosting sustainable practices (Liu & Liu, 2011). Policy evolution remains a constant, and with international pressure from climate accords and sustainability objectives, one can anticipate a regulatory environment increasingly conducive to green businesses. In essence, while sustainable entrepreneurship faces a myriad of challenges, its future, undergirded by proactive measures and global trends, appears luminous.

CONCLUSION

Green entrepreneurship has gained significant attention in recent years as a way to align economic development with sustainability principles. Entrepreneurs are now increasingly recognized for their role in spurring innovation, creating job opportunities, and enlivening economic dynamics while also addressing environmental and social concerns. Many executives and leading companies have committed to sustainability principles and environmental impact reduction, reflecting a growing consensus that sustainability is not just a moral obligation but a business imperative.

Sustainability in business operations has proven to yield efficiencies in production and consumption processes, reducing costs and boosting profitability. It is also becoming an attraction factor for investors and other stakeholders who see sustainable values as an indicator of a company's long-term performance. Beyond financial benefits, sustainability is crucial for building a positive corporate reputation and image. Stakeholders, including consumers, increasingly associate their purchasing decisions with a company's social and environmental responsibility, creating a strong economic incentive for sustainably-operating companies. Additionally, companies committed to sustainability tend to have higher levels of employee engagement, promoting productivity, innovation, and talent retention.

Green entrepreneurship, which involves starting businesses based on sustainability principles, has become a significant driver of change. These eco-conscious entrepreneurs, often referred to as ecopreneurs, not only generate profits but also deliver significant societal and environmental impact. They have the potential to transform entire industries towards sustainability and contribute to job creation and community empowerment. Green Entrepreneurial Orientation (GEO) is a strategic approach that pursues business opportunities by involving economic profit and environmental sustainability. Through GEO, companies prioritize developing and launching products and services that prioritize ecology and conservation. While there has been significant research on the potential and benefits of green entrepreneurship, there is still room to understand further how GEO can bridge environmental

preservation objectives with optimal financial and non-financial performance achievement. Sustainability is a complex and multifaceted concept that includes economic growth, environmental protection, and social justice. Achieving sustainability, especially in the business world, requires a comprehensive approach and a shift in the way business success is defined. Stakeholder theory, circular economy principles, and sustainable value chains are some of the theories and frameworks that guide businesses toward sustainability.

In conclusion, the current global context underscores the urgency of addressing climate change and integrating sustainability principles into all aspects of business and entrepreneurship. Green entrepreneurship has emerged as a powerful force for positive change, with the potential to drive innovation, create jobs, and transform industries while addressing environmental and social challenges. Governments and policies play a crucial role in supporting and incentivizing sustainable entrepreneurship. Overcoming barriers, including funding constraints and regulatory challenges, is essential for the continued growth of sustainable entrepreneurship. Despite the challenges, there is optimism that sustainable entrepreneurship will play a pivotal role in shaping a more sustainable and prosperous future for both businesses and the planet.

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16 SOCIAL ENTREPRENEUR AS AGENT OF CHANGE FOR SUSTAINABLE DEVELOPMENT

Edlyn Khurotul Aini, Eliana Sandy Yuliaji, and Layyin Nafisa

Abstract

In the evolving panorama of societal progress, social entrepreneurship stands as a beacon of transformative change, embodying a nexus of innovation and altruism that galvanizes holistic development. Beginning with an in-depth examination of the Concept and Relevance of Social Entrepreneurship, we unveiled its unique positioning as a nexus where economic viability coexists with societal and environmental betterment. As we navigated through the Intersection of Social Entrepreneurship and Sustainable Development, a promising landscape emerged, portraying a harmonious synergy of economic, social, and environmental stewardship that beckons a shift toward more inclusive growth narratives. Highlighting the role of Social Entrepreneurs as Catalysts for Change, the discourse illuminated their instrumental role in fostering social cohesion and economic revitalization, facilitating vital dialogues between communities and governance structures, and spearheading collaborative initiatives that fuel sustainable growth. Further, the dialogue delved into Community Empowerment, showcasing how social entrepreneurs foster vibrant platforms where communities actively steer their development trajectories. Nonetheless, the path is not without its hurdles, as encapsulated in the section discussing the Key Challenges in the Implementation of Social Entrepreneurship, a segment echoing the necessity for nuanced strategies to overcome barriers to scalability and impact. Peering into the horizon, the Future Direction of Social Entrepreneurship unfurls a canvas of opportunities, suggesting a promising alliance of technological advancements and altruistic pursuits, advocating for a future centered on universal prosperity and well-being. In conclusion, this exploration substantiates the significant imprint of social entrepreneurship in crafting a future where progress resonates with inclusivity, empathy, and sustainability, forging pathways towards a more harmonious and prosperous world.

Keywords: *Social Entrepreneur, Social entrepreneurship, environmental challenges, environmental sustainability*

E. K. Aini · E. S. Yuliaji · L. Nafisa
Department of Business Administration, Faculty of Administrative Science,
Brawijaya University, Malang, Indonesia
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INTRODUCTION

In an era of unprecedented challenges and complexities, the role of entrepreneurship as a harbinger of innovation and economic growth cannot be overstated (Rosário et al., 2022; Saxton & Wang, 2014). Entrepreneurs, with their knack for identifying opportunities and pioneering novel solutions, have long been recognized as vital cogs in the wheel of economic progression, facilitating job creation and nourishing livelihoods on a substantial scale (Frederick et al., 2018; Schumpeter, 2000). However, Kamaludin et al. (2021) show that the evolving dynamics of our global society necessitate a shift from conventional entrepreneurial endeavors to a more inclusive, empathetic, and sustainable approach. Herein, lies the profound potential of social entrepreneurship. Social entrepreneurship, an amalgamation of business acumen with social welfare objectives, has emerged as a powerful tool in addressing some of the most pressing issues of our time including poverty, wealth inequality, and fostering a standard of living that is harmonious with societal well-being (Al-Qudah et, al., 2022; Brooks, 2008). The trajectory of entrepreneurship is evolving, challenging individuals to take a step beyond economic gains and leverage their influence for the collective good, thereby amplifying the impact towards greater societal well-being (Mair & Marti, 2006).

As we navigate through a period where the call for social responsibility reverberates louder than ever, social entrepreneurs find themselves at the forefront of a movement that seeks to redefine the boundaries of business and philanthropy (Porter & Kramer, 2011). These innovative leaders are characterized by their relentless pursuit to integrate every segment of society into a framework where opportunities are not privileges but a norm and where improved living standards are not aspirations but realities (Gupta et al., 2020; Nicholls, 2006). Nevertheless, this journey is not devoid of hurdles. Bozhikin et al. (2019) shows social entrepreneurs often find themselves navigating complex terrains marked by financial constraints, policy restrictions, and societal norms that sometimes resist change. These challenges, however, are not insurmountable. Through ingenuity, collaboration, and a deep-seated commitment to fostering inclusivity and sustainability, social entrepreneurs are carving paths that hold the promise of a brighter, more equitable future (Kickul & Lyons, 2020; Méndez-Picazo et al., 2021)

In this chapter, we delve deeper into the nuances of social entrepreneurship, shedding light on the transformative role they play as agents of change in the sustainable development landscape. Through analytical discourse and real-world case studies, we aim to paint a comprehensive picture of the opportunities and challenges that lie ahead and the paths being forged by these modern-day trailblazers in ushering in an era of positive social change and sustainable development.

DISCUSSION

The Concept and Relevance of Social Entrepreneurship

In recent years, the global landscape of entrepreneurship has undergone a pivotal paradigm shift, transitioning from an exclusive emphasis on economic prosperity to a more inclusive and empathic approach that harmonizes financial stability with societal welfare (Dees, 1998). Emerging prominently as a transformative agent, social entrepreneurship presents itself as a potent force with the capacity to mold a future where business endeavors are in synergy with societal advancement (Bacq & Alt, 2018; Dwivedi & Weerawardena, 2018). This chapter undertakes a meticulous exploration of this burgeoning field, shedding light on the complex dimensions of social entrepreneurship and its consequential roles in nurturing sustainable development. Nevertheless, it is pertinent to acknowledge that the term "social entrepreneurship" encompasses various nuances and has been distinctly characterized by different scholars. Dees (1998) delineates social entrepreneurs as change catalysts within the social sector, individuals who actively seek opportunities to fulfill their mission, while constantly adapting and learning. They operate in the social sector with the overarching goal to create and sustain social value. Parallelly, Martin & Osberg (2007) perceive social entrepreneurship as the process of identifying and diligently pursuing opportunities to generate social value by inciting social change or facilitating social enhancements. Furthermore, Mair & Marti (2006) assert that social entrepreneurship embodies a process that involves the innovative utilization and amalgamation of resources to exploit opportunities that catalyze social change and/or address social necessities. Complementing these perspectives, Yunus, Moingeon & Lehmann-Ortega (2010) argue that social entrepreneurship fuses innovation, resourcefulness, and opportunity recognition with a profound dedication to social change, fostering the creation of new products, services, and models that facilitate societal betterment.

As we delve deeper into the world of social entrepreneurship, it becomes evident that it encapsulates a diverse range of endeavors and motivations (Mair & Marti, 2006). These scholarly perspectives collectively paint a picture of social entrepreneurship as a dynamic and multifaceted field, unified by a steadfast commitment to fostering social change and promoting sustainable development (Austin, Stevenson & Wei-Skillern, 2006; Yunus, 2010; Dees, 1998; Nicholls, 2006). At the heart of social entrepreneurship lies the figure of the social entrepreneur: an archetype of innovation (Drucker, 1985), resourcefulness (Alvord, Brown & Letts, 2004), and altruism (Bornstein, 2004). These individuals harness business opportunities not solely for economic gains but utilize them as conduits to engender positive social change (Martin & Osberg, 2007). They navigate through the complexities of today's world with an enlightened perspective, embedding solutions to social issues within their business models (Lasisi, 2023).

To unravel the complexities of the evolving phenomenon of social entrepreneurship, it is imperative to dissect the various typologies that delineate its sphere. Firstly, the Community Social Entrepreneur focuses predominantly within a

localized geographic scope, keenly crafting strategies that resonate profoundly with the local populace, fostering an environment that melds financial sustainability with societal upliftment, thereby promoting communal growth and prosperity through initiatives like job creation and establishment of community centers (Alvord et al., 2004). Secondly, Non-profit Social Entrepreneur distinguishes themselves by fervently dedicating their efforts towards social betterment, often collaborating with well-established organizations to orchestrate initiatives that foster a more equitable society, veering away from the traditional profit-driven motives that hallmark mainstream entrepreneurship (Bornstein, 2004). In a similar vein, Transformational Social Entrepreneurs emerge as a potent force within society, adopting proactive approaches to address persistent social issues often overlooked by existing entities, thereby facilitating collaborations with governmental bodies to develop strategies that catalyze broad-scale societal advancements (Christensen et al., 2006). Lastly, the Global Social Entrepreneur operates on a vast international scale, orchestrating sweeping reforms across various sectors, supported by substantial resources and network connections, they aspire to reshape global social structures, nurturing a more inclusive world society through initiatives encompassing education healthcare and environmental conservation, thereby paving the way for a future characterized by universal accessibility and sustainable progress (Schoar, 2010). This analytical delineation serves as a foundational framework to fathom the depth and breadth of social entrepreneurship, highlighting its multifaceted nature and pivotal role in fostering societal transformation and global unity.

In conclusion, the evolving landscape of social entrepreneurship presents an avenue of hope and transformation in a world grappling with multifaceted challenges. These entrepreneurs emerge as agents of substantial change, carving out a future where business transcends mere financial gain to embody a potent force for societal upliftment and sustainable development. As stewards of this transformative wave, social entrepreneurs are fostering a future that harmoniously blends economic growth with societal prosperity, heralding a new era of inclusivity and equity (Yunus et al., 2010; Nicholls, 2006).

The Intersection of Social Entrepreneurship and Sustainable Development

A sustainable development agenda cannot be easily achieved by relying on one party only (United Nations, 2015). The role of government, decision-makers, business players, education institutions, healthcare providers, research and development centers, and the public is equally important (Meadows, Randers & Meadows, 2004). From an economic perspective, social entrepreneurship plays a crucial role in creating value and delivering opportunities as one of the biggest issues addressed in sustainable development (Littlewood et al., 2018). The damage and crisis faced globally have threatened humanity and life standards (World Health Organization, 2020). As awareness of the importance of social entrepreneurship is raised globally,

world attention from stakeholders such as government, investors, educators, and the public shifts towards a more inclusive and sustainable economy, environment, and living standard (Nicholls, 2006). Sustainable development is achieved through the balance of environmental and socio-economic establishments. Supportive policies and collaboration between organizations and policymakers for sustainable development foster an atmosphere where social entrepreneurs could flourish the project (Sachs, 2015). The ability of social entrepreneurs to diversify networking and digital technology, as well as a new market direction during situational crisis, has been quantifiably proven (Kulkova et al., 2021).

In the contemporary era, the burgeoning field of social entrepreneurship stands as a vibrant testament to the innovative solutions and strategies it brings to the global effort of sustainable development. The literature extensively acknowledges the pivotal role social entrepreneurs play as agents of transformative change, actively redefining the manner in which business intersects with societal and environmental progress (Dees, 1998; Mair & Martí, 2006). Central to this dynamic intersection are social entrepreneurs, visionary agents fostering a resilient and inclusive future. Their innovative and proactive approaches have been recognized for effectively addressing pressing global challenges, blending profitability with societal betterment and environmental conservation (Nicholls, 2006). These entrepreneurs are noted for their alignment with the United Nations Sustainable Development Goals, orchestrating ventures that holistically tackle poverty, inequality, and environmental degradation (Rosca et, al., 2020; Yunus, 2007). The role they play in promoting sustainable development is manifold and significant. Primarily, they introduce forward-thinking business models that emphasize community engagement and environmental conservation, fostering a symbiotic relationship between economic growth and the welfare of communities and the environment (Elkington, 1997; 2006). This nuanced approach paves the way for a future where business activities are harmonized with social and environmental well-being, a radical shift advocated by many scholars in the field (Porter & Kramer, 2011). Furthermore, social entrepreneurs broaden their impact through collaborations and partnerships, nurturing a rich ecosystem of sustainable practices that integrate economic advancements seamlessly with broader societal and environmental objectives (Austin, Stevenson & Wei-Skillern, 2006). This approach, which has roots in localized solutions with global scalability potential, encourages a pervasive culture of sustainability and inclusivity.

In today's complex and rapidly evolving world, the role of social entrepreneurs as catalysts for positive change has gained considerable traction (Drayton, 2002; Rawhouser et, al., 2019; Richter, 2019). They transcend traditional business paradigms, crafting strategies that stimulate a series of positive transformations within society. Beyond merely filling gaps left by governmental and private sectors, they are constructing empowering systems that bolster community well-being and inclusivity, a crucial venture in the pursuit of a sustainable future (Johnson & Schaltegger, 2020; Mair & Martí, 2006). Moreover, social entrepreneurs are pivotal in fostering economic

resilience (Bansal et al., 2019). Their grassroots initiatives foster employment and economic growth opportunities, particularly within marginalized communities, thereby cultivating a sense of ownership and self-determination (Bornstein, 2004). This empowering approach facilitates active participation in sustainable development, a cornerstone in the building of resilient and inclusive societies. As the world grapples with unprecedented challenges, social entrepreneurs emerge as torchbearers of a new era where business operates as a force for good (Seelos & Mair, 2005a; 2005b; 2005c). Their efforts underscore a belief in the transformative power of business, heralding a time where profit-making and societal progress coalesce harmoniously (Seelos et al., 2011). Through relentless innovation and commitment, social entrepreneurs are sketching a blueprint for a future where business endeavors contribute substantially towards forging a more just, equitable, and sustainable trajectory (Santos, 2012).

Social Entrepreneurs as Catalysts for Change

In the dynamic field of social entrepreneurship, the concept of "Catalyst for Change" represents a transformative force that pioneers systemic shifts toward sustainability and equity within society (Christensen et al., 2006). Essentially, it underscores a proactive stance in instigating change rather than reactive responses to existing social predicaments (Anand et al., 2021). Social entrepreneurs embody this concept as they venture to create innovative solutions that preemptively address social issues, fostering environments that spur community development and holistic growth (Hummels & Argyrou, 2021; Mair & Martí, 2006). As catalysts for change, social entrepreneurs play a pivotal role in orchestrating shifts that have a far-reaching impact. At the nucleus of their approach lies the ability to perceive societal gaps and fabricate solutions not just as mere interventions but as sustainable, long-term strategies that facilitate systemic change (Dees, 1998; Maksum et, al., 2020). Moreover, their ventures are characterized by a relentless pursuit of innovation, driven by a commitment to inclusivity and equity. In doing so, they pave avenues for communities to be self-sufficient, nurturing a generation of individuals who are empowered, informed, and capable of contributing positively to societal development (Yunus, 2010).

Initially, the economic impacts of social entrepreneurship cannot be overlooked (Mair & Martí, 2006). More than just creating job opportunities, they significantly contribute to reducing poverty and unemployment rates by offering growth opportunities for marginalized communities (Yunus, Moingeon & Lehmann-Ortega, 2010). Through their initiatives, a more equitable redistribution of wealth is fostered, aiming to bridge the gap between the rich and the poor and, in the long run, build a more fair and egalitarian society (Borzaga & Defourny, 2001). Furthermore, social entrepreneurship promotes social cohesion and community development (Westley & Antadze, 2010). Amid initiatives rooted in empathy and community engagement,

social entrepreneurs focus on addressing pressing social issues. The networks of trust and cooperation they develop not only strengthen relationships between individuals but also build vital social capital, resulting in stronger and interconnected communities (Putnam, 2000). In this context, programs or initiatives that have successfully built social capital can serve as compelling case studies to further explore.

In the realm of policy and governance, social entrepreneurs function as critical intermediaries between communities and governments, bringing community issues to the forefront of policy discussions and facilitating more participatory and inclusive dialogues (Nicholls, 2006; Bornstein, 2007). Through this advocacy role, they contribute to the formation of new, more inclusive, and participatory governance models, facilitating better dialogue between governments and their citizens and in some cases, driving policy reforms that more accurately reflect the needs and aspirations of the broader society (Dees, 2001). Then, in terms of collaborations and partnerships, social entrepreneurs build bridges between the public, private, and non-profit sectors, creating synergies that enhance the impact of their initiatives (Austin et al., 2006). Specific examples of cross-sector collaborations that have created revolutionary solutions could bring more depth to this discussion, showcasing the true power of these partnerships.

Furthermore, social entrepreneurs also play a significant role in environmental sustainability (Schaltegger et al., 2012). They often integrate sustainable practices into their business models, promoting circular economies and minimizing waste (Stahel, 2016). Through their projects or initiatives, they have made significant contributions to ecological conservation, creating a profound impact in efforts to build a more harmonious relationship between humans and nature (Bocken et, al., 2014). To conclude, the role of social entrepreneurship as a catalyst for change highlights a new trajectory in societal evolution, one characterized by inclusivity, sustainability, and progress (Zahra et, al., 2009). As they continue to weave a tapestry of change, they are scripting a new narrative, a testament to the transformative power of entrepreneurship developed for the greater good of society (Martin & Osberg, 2007).

Community Empowerment

Community Empowerment and Participation stand as pivotal segments in the wheel of social entrepreneurship (Dees, 2001). The philosophy that underpins this approach is deeply rooted in the belief that communities themselves house the most potent solutions to their issues (Yunus et al., 2010; Bornstein, 2007; Mair & Martí, 2006; Westley & Antadze, 2010). Social entrepreneurs act as facilitators in this regard, fostering an environment where community members are empowered to take an active part in decision-making processes and implementation (Nicholls, 2006). Community empowerment and participation, therefore, become instrumental in fostering self-reliance and resilience among communities (Putnam, 2000). Through this approach, individuals are not merely passive recipients of aid but active participants in shaping their destinies. By encouraging local communities to be at the forefront of development initiatives, social entrepreneurs inadvertently promote the

nurturing of local leadership and the development of skills and knowledge that remain within the community (Bocken et al., 2014). Furthermore, this participatory approach transcends conventional methodologies by fostering a sense of ownership among community members. When individuals are actively involved in the development process, it instills a sense of pride and responsibility, promoting sustained growth and development (Austin et al., 2006). Moreover, this symbiotic relationship between social entrepreneurs and communities cultivates a culture of mutual respect and understanding, fostering collaborations that are based on trust and shared objectives.

Moreover, the ripple effects of community empowerment are observed in the holistic development it facilitates (Zahra et al., 2009; Borzaga & Defourny, 2001; Dees, 2001; Schaltegger et al., 2012). It fosters social inclusivity, where voices often unheard get a platform to be articulated and respected. It facilitates the formation of community networks and alliances, enhancing the community's capacity to advocate for their needs and rights more effectively (Stahel, 2016). Furthermore, the significance of community empowerment and participation goes beyond immediate project outcomes, as it contributes to the creation of a virtuous cycle of positive change (Martin & Osberg, 2007). When community members are actively engaged in decision-making and implementation, they are more likely to feel a sense of ownership and responsibility for the outcomes. This sense of ownership encourages them to invest not only their time and effort but also their creativity and innovation into finding solutions that are tailored to their unique context (Bornstein, 2007). Additionally, community empowerment enhances the overall well-being and quality of life of individuals within the community (Westley & Antadze, 2010; Nicholls, 2006; Dees, 2001; Bocken et al., 2014). As they gain the skills, knowledge, and confidence to address their own challenges, they also experience an increase in self-esteem and a stronger sense of agency (Putnam, 2000). This, in turn, leads to improved social cohesion and a greater sense of unity within the community.

The participatory approach also has the potential to create a positive feedback loop (Yunus et al., 2010; Borzaga & Defourny, 2001; Austin et al., 2006). When community members witness the tangible benefits of active involvement in development processes, they are more likely to continue participating and contributing to future initiatives (Zahra et al., 2009). This sustained engagement not only ensures the continued growth of the community but also creates a reservoir of local expertise and leadership that can guide future endeavors (Mair & Martí, 2006). Furthermore, the emphasis on community empowerment aligns with the principles of sustainable development (Schaltegger et al., 2012). By prioritizing the empowerment of local communities, social entrepreneurship promotes solutions that are not only effective in the short term but also have the potential to create lasting impact. Rather than imposing external solutions, this approach taps into the collective wisdom and resources of the community, leading to solutions that are contextually relevant and sustainable over time. In conclusion, community empowerment and

participation are cornerstones of social entrepreneurship that go beyond their immediate impact. They foster a sense of ownership, enhance well-being, and create a positive feedback loop of sustained engagement. By embracing this approach, social entrepreneurs contribute to the long-term development of communities while fostering a sense of unity, self-reliance, and resilience that can drive positive change for years to come. This approach not only transforms the lives of individuals within the community but also contributes to the broader goal of creating a more inclusive, equitable, and participatory society.

Key Challenges in the Implementation of Social Entrepreneurship

In the realm of social entrepreneurship, entrepreneurs often face a series of significant challenges. One of the primary hurdles they encounter is the financial resource dilemma. According to Mair & Martí (2006), constructing a business model that accommodates financial sustainability without sacrificing their social mission is frequently a substantial challenge. Besides, scaling and measuring social impact becomes another obstacle to overcome. Nicholls (2006) emphasized that developing methods to accurately measure social impact is a complex yet vital task. Furthermore, social entrepreneurs often experience a shortage of competent workforce. In a study by Perrini and Vurro (2006), it was found that finding and retaining employees with high dedication and appropriate skills can be a significant barrier to achieving their social mission. On the other hand, they also have to face challenges in the form of regulations and policies that are often unsupportive. Navigating through complex government policies can be a time-consuming and resource-draining process (Austin et al., 2006).

Competing with conventional companies also poses its own set of challenges. Social entrepreneurs must find ways to compete in an increasingly competitive business environment while maintaining their focus on their social goals (Cohen & Winn, 2007). In addition to this, building strategic partnerships with various stakeholders can also be a winding challenge. However, these partnerships are vital to strengthening the impact and achieving more ambitious goals (Putnam, 2000). Moreover, they must be prepared to face high levels of uncertainty and risk, common characteristics of all forms of entrepreneurship. This uncertainty requires a high level of resilience and adaptability (Dees, 1998). Furthermore, creating and implementing innovations, although core to social entrepreneurship, often proves to be a significant challenge due to existing resource and infrastructure limitations (Mair et al., 2006). In facing these challenges, social entrepreneurs must maintain a clear vision and possess the ability to adapt and learn from experiences. Thus, they can hope to achieve their goals and bring about significant social change. This affirms that social entrepreneurship is indeed a journey filled with challenges, yet with the potential to influence profound positive changes in society.

Future Direction of Social Entrepreneurship

In contemplating the horizon that lays ahead for social entrepreneurship, several promising avenues delineate a roadmap filled with opportunities and potential transformations. Foremost, there is a growing recognition that the synergy between technological advancements and social entrepreneurship can pave the way for more sustainable and inclusive solutions (Mair & Marti, 2006). Innovations in digital platforms, artificial intelligence, and big data analytics could equip social entrepreneurs with the tools to harness deeper insights, enhance efficiency, and foster greater global access to underserved communities (Nambisan, 2017). Moreover, the evolving landscape will witness an augmentation of collaborative approaches, where social entrepreneurs will increasingly partner with governmental agencies, corporations, and civil society, weaving a rich tapestry of interconnected efforts aimed at ameliorating pressing global issues (Seelos & Mair, 2005). These partnerships are anticipated to engender policies that support social entrepreneurship and foster environments that facilitate scalability and sustainable impact. Education and capacity-building will emerge as pivotal axes, cultivating a new generation of social entrepreneurs endowed with the skills, knowledge, and innovative thinking necessary to navigate the complex challenges of the 21st century (Drayton, 2002). Furthermore, the global community is expected to witness a seismic shift in the financial ecosystem surrounding social entrepreneurship, with more flexible funding models and investment mechanisms that prioritize social and environmental returns alongside economic gains (Nicholls, 2010). In essence, the future directions of social entrepreneurship herald a paradigm where altruism meets innovation, steering humanity toward a future that embraces inclusivity, sustainability, and holistic prosperity.

Case Study 1: Evoware - Leading the Charge for Sustainable Development in Indonesia

In the vibrant landscapes of Indonesia, where picturesque beaches often bear the brunt of plastic waste, a young and dynamic startup named Evoware has embarked on a journey to revolutionize the notion of sustainable development. The company was established by a group of concerned individuals who were disheartened by the escalating issues of plastic pollution and its adverse impact on marine life and the environment at large. Evoware envisions a world where the boundaries between societal growth and environmental sustainability blur, fostering a habitat where development coexists with nature harmoniously. Their mission is to mitigate the plastic waste menace by introducing biodegradable alternatives that are not only environment-friendly but also promote the welfare of the local communities. At the core of Evoware's strategy is the utilization of seaweed as a primary resource to develop eco-friendly products. This not only helps in reducing plastic waste but also stimulates the local economy by empowering seaweed farmers in Indonesia. The

social entrepreneurs at Evoware understood that to foster sustainable development, the community's participation and empowerment are pivotal.

They collaborated with local seaweed farmers, providing them with the necessary training and resources to enhance their production quality and capacity. This approach has led to a win-win scenario, where the community enjoys economic upliftment, while simultaneously contributing to an initiative that curtails environmental degradation. Since its inception, Evoware has made significant strides in promoting sustainable development. Their products, which range from edible food wrappers to biodegradable packaging materials, have garnered widespread acclaim and adoption, showcasing a viable alternative to plastic usage. Furthermore, by placing the community at the center of their operations, Evoware has fostered a sense of ownership and pride among the local populace. The farmers are not merely suppliers but active stakeholders in a movement that seeks to redefine the paradigms of development and sustainability. Through their initiatives, Evoware has managed to create a ripple effect in the community, fostering an environment where individuals are more conscious of their choices and their implications on the environment. Moreover, the company has facilitated the creation of numerous jobs in the locality, thus promoting economic growth and stability.

CONCLUSION

In conclusion, the world of social entrepreneurship is undergoing a profound transformation, marked by a shift from profit-centric models to those that prioritize societal welfare and sustainable development. Social entrepreneurs are emerging as catalysts for this change, driving innovation, community empowerment, and positive impact. Their role in bridging the gap between business and social change is pivotal and multifaceted. The intersection of social entrepreneurship and sustainable development is evident in their alignment with the United Nations Sustainable Development Goals and their focus on economic, social, and environmental well-being. Social entrepreneurs are creating innovative solutions that address pressing global challenges and promote a harmonious relationship between business, society, and the environment.

Community empowerment and participation are at the heart of social entrepreneurship, fostering self-reliance, resilience, and inclusivity within communities. This approach not only transforms individual lives but also contributes to the broader goal of creating a more equitable and participatory society. However, social entrepreneurship faces several challenges, including financial sustainability, measuring social impact, workforce development, regulatory hurdles, and competition with traditional businesses. Overcoming these challenges requires resilience, adaptability, and strategic partnerships.

Looking ahead, the future of social entrepreneurship holds promise. Technological advancements, collaborative approaches, education and capacity-

building, and evolving financial ecosystems are expected to shape the field. Social entrepreneurship is poised to play a crucial role in creating a future characterized by inclusivity, sustainability, and holistic prosperity, redefining the way business and society interact for the betterment of all.

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