

IN SUPPORT OF MASD THESIS REVIEW



A POST COVID-19
GREEN RECOVERY CONCEPT
FOR WOMAN-OWNED SMALL BUSINESSES

ASHLEY FRENCH

April 18, 2021



THESIS ADVISOR

Deann Garcia

COMMITTEE MEMBERS

Wendy Jedlička

Ashlyn Hochschild

THESIS COMMITTEE CHAIR

Denise DeLuca



ABSTRACT

A sunburst graphic consisting of several thin, radiating lines of varying lengths, centered above the word "ABSTRACT".

Small businesses make up the majority of companies in the United States, contributing a significant amount of jobs and economic value. Many small businesses have the desire to develop more sustainable businesses practices but are prevented from doing so due to a lack of time, knowledge, and resources - the COVID-19 pandemic has widened this barrier. Woman-owned companies in particular have been disproportionately affected by the COVID-19 pandemic. Women hold the unique leadership skills needed to lead the world's efforts towards adopting the United Nations Sustainable Development Goals (UN SDGs), and in order to accomplish this in the United States woman-owned small businesses must stay afloat to keep more women in the business arena. The proposed design solution is an e-book for woman-owned small businesses that, alongside the support of a sustainability consultant, helps small businesses work towards the UN SDGs as a means of staying in business and building resiliency to weather future unforeseen events. By helping woman-owned small businesses recover more efficiently from the post COVID-19 financial recession, the solution has the potential to make the U.S. economy stronger and more efficient than it's ever been. The e-book will be available in tandem with a consultant providing ongoing support. Metrics are set in place to measure the design solution's success and effectiveness over time. Systems Thinking, Design Thinking, and Biomimicry are key frameworks utilized to create a design proposal for the e-book.

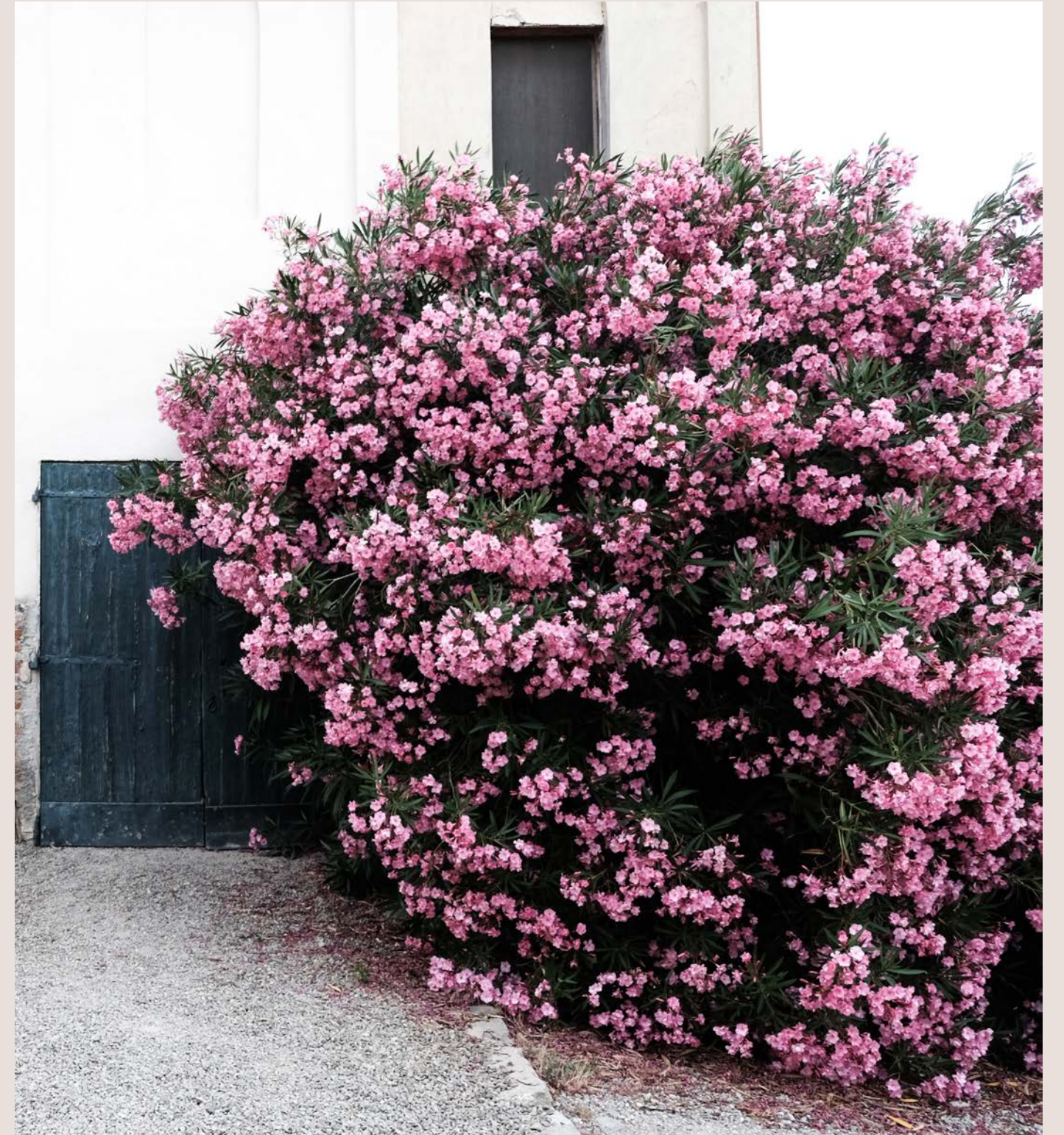


FIG 1



TABLE OF CONTENTS

INTRODUCTION

- Abstract (p.2)
- Table of Contents (p.3)
- Problem Statement (p.4)
- Sustainability Challenge (p.5)
- Thesis Statement (p.6)
- The Idea (p.6)
- Strategy (p.7)
- Scope of Project (p.7)

EXECUTION

- Objectives (p.8)
- UN Sustainable Development Goals (p.8)
- Proposed Process (p.9)
- Actual Process (p.9-11)
- Design Thinking (p.9-20)
- Systems Thinking (p.14-15)
- Biomimicry (p.17-18)
- Insights & Discoveries (p.21)

OUTCOME

- Final Outcome (p.22-30)
- Application of Frameworks (p.28-30)
- Functionality & Impact (p.31)
- Testing The Outcome (p.32)
- Case Studies (p.33-34)
- Project Conclusion & Next Steps (p.35)

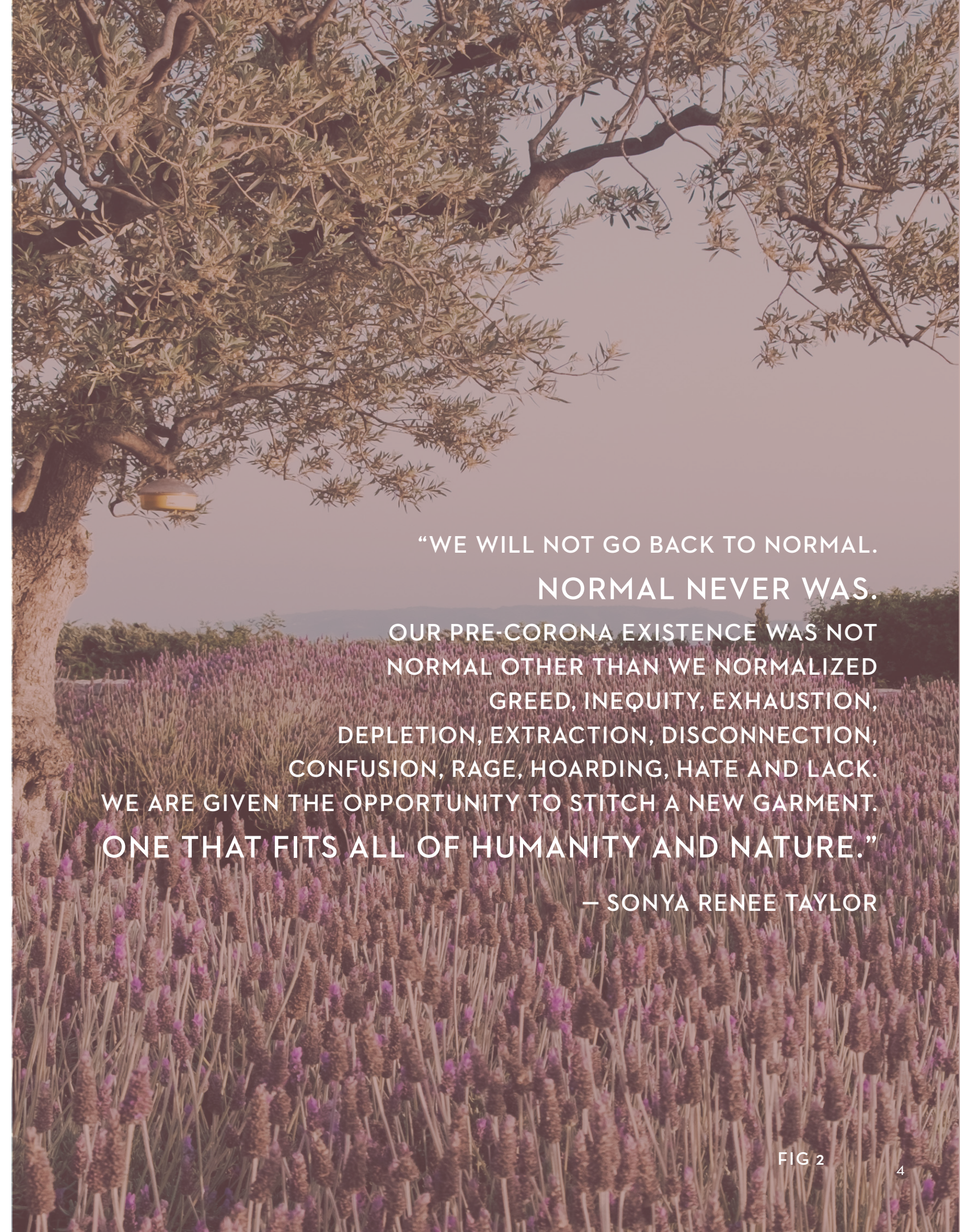
WORKS CITED (p.37-40)

APPENDICES (p.41-48)



PROBLEM STATEMENT

Small businesses often lack the time and knowledge needed to commit to incorporating sustainability into their business structure,¹ stunting global progress towards achieving the United Nations Sustainable Development Goals. The COVID-19 pandemic has rapidly advanced this problem.



“WE WILL NOT GO BACK TO NORMAL.
NORMAL NEVER WAS.
OUR PRE-CORONA EXISTENCE WAS NOT
NORMAL OTHER THAN WE NORMALIZED
GREED, INEQUITY, EXHAUSTION,
DEPLETION, EXTRACTION, DISCONNECTION,
CONFUSION, RAGE, HOARDING, HATE AND LACK.
WE ARE GIVEN THE OPPORTUNITY TO STITCH A NEW GARMENT.
ONE THAT FITS ALL OF HUMANITY AND NATURE.”

— SONYA RENEE TAYLOR



SUSTAINABILITY CHALLENGE

Small businesses, often referred to as small and medium enterprises (SMEs), make up 99% of all businesses in the United States.² Prior to the COVID-19 pandemic in 2020, SMEs alone contributed \$1.4 trillion in sales and employed over 8.4 million people in the U.S.³ They “make up the largest business sector in every economy in the world and produce the majority (up to 60%) of the world’s economic output.”⁴ While the full economic effects of the COVID-19 pandemic remain to be seen, its impact on small businesses has been detrimental.⁵ Many SMEs had limited cash savings towards the beginning of the pandemic, which required them to either cut costs, take on more debt, or declare bankruptcy.⁶ Employing almost 50% of all American workers, the importance of SMEs to the health of the economy is immense.⁷ Providing strategic support to small businesses as they rebuild from the COVID-19 pandemic could help them recover, and presents a unique opportunity to encourage the adoption of more sustainable business practices.

Companies who may not have previously shown interest in the adoption of sustainable business practices could perhaps be more easily convinced during this period of disruption, as companies look for new ways to thrive in a post COVID-19 economy. Sustainability is a key driver for today’s consumer. Younger generations are not only seeking out more sustainable products and companies that align with their values, they’re also willing to pay more for them.⁸ Yet, while some SMEs understand the importance of sustainability, “only 40% of businesses with 0-19 employees report they’ve actually transitioned to a sustainable future.”⁹ The push for sustainability in recent years poses a challenge for small businesses who don’t have the money needed to adapt to these new business realities.¹⁰ “For many business owners, sustainability can seem amorphous and even intimidating, with no clear guidelines for how to start working with it.”¹¹ Shifting business practices to be more environmentally-friendly can also require high up-front costs, which makes businesses averse to making necessary changes.¹²

It is crucial to consider the contribution of SMEs to sustainability because their aggregate environmental impact is greater than that of large businesses.¹³ This is in part because small businesses are generally unaware of their environmental impacts.¹⁴ Common things preventing SMEs from implementing more sustainable practices include resource constraints, misconceptions about environmental management systems, implementation concerns, and a lack of support and guidance.¹⁵

Not to mention, corporate social responsibility and environmental management practices are largely understood from the perspective of large businesses,¹⁶ failing to account for the unique demands and intricacies of a small business viewpoint. “Large businesses [also] have several advantages when looking to engage voluntarily in environmental management practices. They have more resources, greater ability to influence policy and regulations, they frequently use formal systems approaches to manage their activities and they have a greater ability to achieve benefits from these practices due to economies of scale.”¹⁷

While the impacts of COVID-19 have been variable by industry, “female-owned small businesses have been disproportionately affected by the [COVID-19] pandemic and corresponding economic crisis, and they are now less likely to expect future revenue, investment and staffing growth.”¹⁸ By September of 2020, 4 times more women had dropped out of the workforce than men,¹⁹ with lack of childcare being the largest contributing factor, as women had no choice but to stay home and care for their children.²⁰ A decrease in female business leadership in the workforce could not only undo years of progress on gender equality, it would also hinder environmental progress. A large reason for this is that “women bring more empathy and inclusiveness in their advocacy and problem-solving, which enhances their efficacy as sustainability leaders.”²¹

The Business and Sustainable Development Commission has laid out three convincing reasons why women should be the leaders of the UN SDGs. The first is that women are more likely to embrace the six key leadership principles required to advance progress: long-term thinking, innovation, collaboration, transparency, environmental management, and social inclusiveness.²² Without enough women leaders infusing these key traits into business decision making, we will continue to fall short of the goals laid out in the UN SDGs, and the brighter future that comes along with them. Ensuring the survival of female owned small businesses post COVID-19 is necessary to maintain the progress that’s been made and to continue moving forward.

Creating more resources to limit barriers that prevent women-owned SMEs from thriving can generate greater innovation and productivity, leading to an increase in jobs, wealth, and economic growth.²³



THESIS STATEMENT

If woman-owned small businesses receive support in working towards the United Nations Sustainable Development Goals they will be more likely to thrive in a post COVID-19 economy, leading to a greener economic recovery from the COVID-19 financial recession.

PROFESSIONAL GOALS

This project will establish the thesis candidate as a leader in the field of sustainability writing and content creation. It will set the stage and provide credibility for the candidate to become a sustainability consultant for woman-owned small businesses.

THE IDEA

The proposed design solution is an educational and action-based e-book that supports woman-owned small businesses in working towards contributing to the UN SDGs. Many larger companies have begun setting COVID-19 recovery measures into action, but their plans often aren't applicable to the specific needs and complexities of smaller businesses. Other sources have created simple guidelines for small business recovery that either don't make mention of sustainability²⁴, or whose suggestions can fit onto a single page without detailed instruction for realistic implementation.²⁵

This concept places a particular focus on microenterprises, defined by the World Bank as a company employing anywhere from 1 to 9 employees.²⁶ The e-book will be applicable to a variety of small business professions, and will prompt meaningful action by small business owners. Upon signing on to participate, the business owner will be assigned a consultant who helps on-board the company, does a company assessment and builds an action plan, and provides ongoing support through implementation and thereafter. As more small businesses incrementally implement the UN SDGs, they will see an increase in their resiliency while simultaneously having a greater positive impact on the economy and on their respective communities.

The e-book will afford more time to small business owners who, especially amid keeping their businesses afloat in a post COVID-19 economy, commonly lack the extra time needed to commit to educating themselves on the topic of sustainable business practices and to adopting the UN SDGs.



THE STRATEGY

A consultancy company will be created as a means of distributing the e-book to woman-owned small businesses and providing the support required to carry out the actions proposed. The consultancy company will partner with a variety of women's groups around the U.S. in order to effectively distribute the e-book to the target audience on a wide scale. Key women's groups to be targeted include: American Business Women's Association, Women's Business Enterprise National Council, The BOSS Network, U.S. Women's Chamber of Commerce, and Women's Venture Fund.²⁷

The consultancy will provide small businesses with a personal consultant to help them work towards contributing to the UN SDGs over time. The consultancy will partner with the company Instant Teams²⁸ to hire and train underemployed military spouses as consultants. Instant Teams is startup company helping underemployed military spouses and veterans secure remote jobs. Over 40% of military spouses hold a university degree, yet 90% are underemployed or overqualified for the jobs they hold. Those that do work earn an average of 38% less than their civilian counterparts. Primary contributors to this issue are the perception that military spouses make undependable employees due to frequent moves, and a lack of available job opportunities where many military bases are located (especially overseas).²⁹

To put the economic implications of this into perspective, "the unemployment that affects military spouses as a result of the military lifestyle costs the U.S. economy almost one billion dollars a year."³⁰ Working with companies such as Instant Teams is an example of how the consultancy company will work to have the greatest possible positive impact in all avenues of business, just as it encourages its clients to do so. Working with Instant Teams to hire its team members will allow the consultancy company to maximize its efforts; employing these women as sustainability consultants will work towards increasing female sustainability leadership while at the same time providing jobs and contributing to overall economic growth.

THE IMPACT

If implemented on a wide scale, the e-book and consultancy concept will lead to a stronger economy than ever before, and one in which the UN SDGs are a priority for the majority of small businesses. With more widespread adoption, UN SDGs are capable of increased equality, returning the environment to a healthy state, and increasing prosperity for all.

It will also result in woman-owned small businesses thriving financially, armed with a resiliency to weather future unforeseen events that present themselves - which are an inevitable reality due to the mounting negative effects of climate change on our planet.³¹

"According to the Census Bureau's latest Annual Survey of Entrepreneurs (2016), there [were] 1,118,863 women-owned businesses...in the United States." "After the 2008 financial recession, larger companies recovered to their pre-crisis contribution to GDP in an average of four years, while smaller ones took an average of six."³² The consultancy's ambitious aim is to reach .5% of woman-owned small businesses within five years - a target of 6,000 businesses.

"Many small businesses in the United States will need to make extreme changes to survive...Small businesses with slim margins have little room to invest in the business models and technologies that they will need to survive. It will take collaboration across the economy to keep them afloat."³³ The proposed e-book and consultancy concept is a step towards bridging the gap between what must be done in order to achieve the SDGs, and the barriers many small businesses face in achieving them.

SCOPE OF PROJECT

The thesis will create a blueprint for what the e-book will look like, how it will function, and what it will include. It will determine how best to distribute and manage the e-book for optimal effectiveness and adoption among the target audience.

Outside the scope of this thesis is a sustainable business plan for the consultancy business. Clients will be provided with a virtual sustainability consultant who will get to know the business and walk business owners through the process of integration and adoption, as well as provide ongoing support. Also outside the scope of this thesis is a web of data collection among program participants. Those who utilize the e-book and consultancy can allow their collected data to be viewed and analyzed by other small businesses in their community and shared industries in order to grow and work together towards a common goal.

OBJECTIVES

The objectives for this thesis are defined through the lens of the Triple Bottom Line, a sustainability-based accounting method reaching beyond financial performance to give equal priority to people, planet, and profit.³⁴

PEOPLE: See an increase in woman-owned microenterprises engaging in their local communities and prioritizing sustainable business practices.

PLANET: See an increase in woman-owned small businesses who have made a public commitment to working towards the UN SDGs.

To measure each of these two objectives, a test group will be formed from a sample of woman-owned microenterprises who are utilizing the e-book and working with a consultant. Through the use of surveys, their progress will be tracked and measured incrementally over time to gauge progress and overall efficacy of the e-book and consultancy company.

PROFIT: See an increase in woman-owned microenterprises that remain in business post COVID-19.

To measure this objective, an analysis will be performed on upcoming reports from the U.S. Census Bureau's Annual Business Survey.³⁵

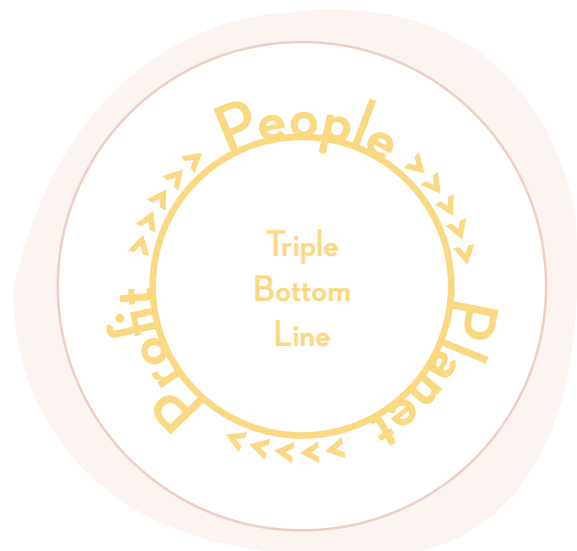


FIG 3

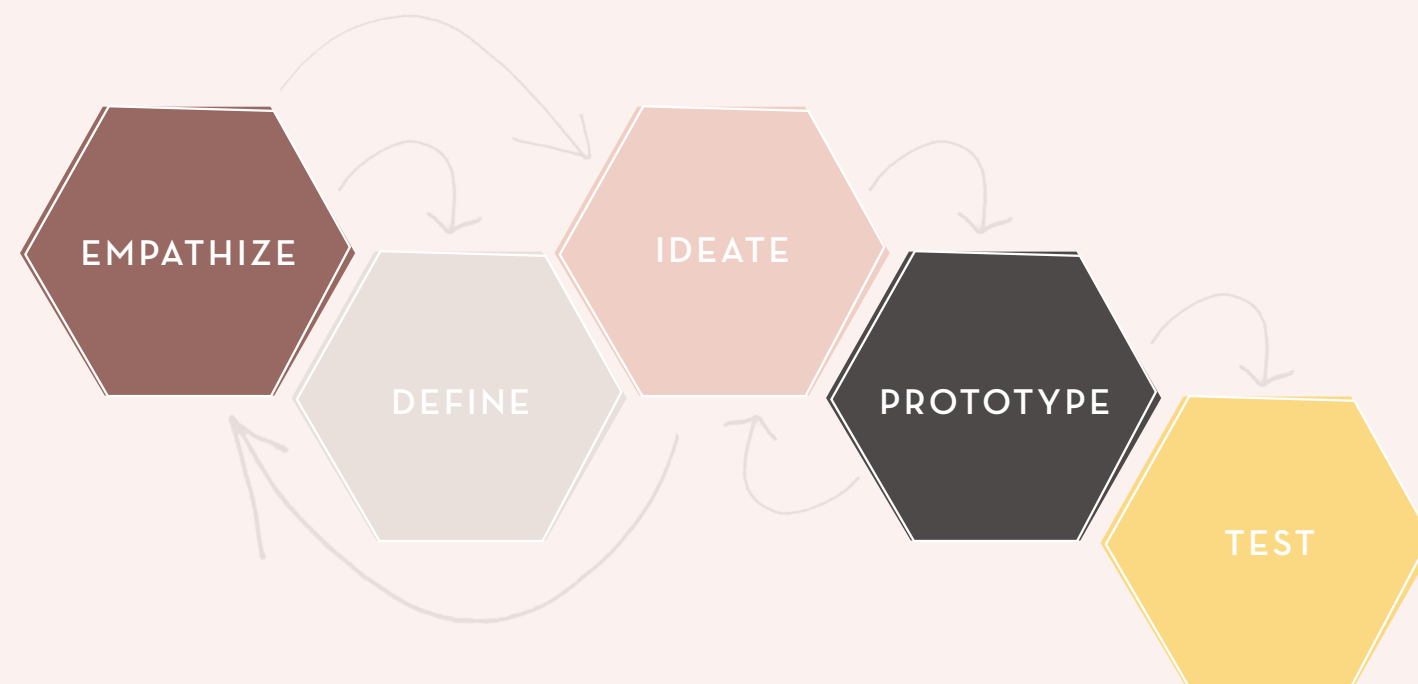
HOW CAN THE UN SDGs HELP SMEs?

The UN SDGs were created as an urgent call to action by the UN to provide “a shared blueprint for peace and prosperity for people and the planet, now and into the future,” and were adopted by all member states of the UN in 2015.³⁶ The UN SDGs take into consideration not just the impacts of climate change but also inequality, injustice, and poverty. A global framework for sustainability, they are currently being utilized as a road map for a post COVID-19 recovery by major world leaders³⁷ and are the chosen metric of progress for this thesis.

There are 17 total SDGs, and the e-book will assist small businesses in committing to up to three goals that align with their core business goals. Having a clear set of common goals allows for effective action and leads to more amplified impact. Partnerships create value, and small and large businesses alike have a crucial role to play in working together to make the UN SDGs a reality by 2030.

We’ve already begun to see the negative effects the COVID-19 pandemic has had on poverty and inequality at the global scale, “making achievement of UN SDGs even more urgent. Without urgent socio-economic responses, global suffering will escalate, jeopardizing lives and livelihoods for years to come.”³⁸

ROUND 1: COMPASS + FIELD GUIDE



Many women care about the environment but don't take sustainable action

Women are disconnected from nature

A compass and field guide that connect women to nature

Example pages for field guide

Compass design

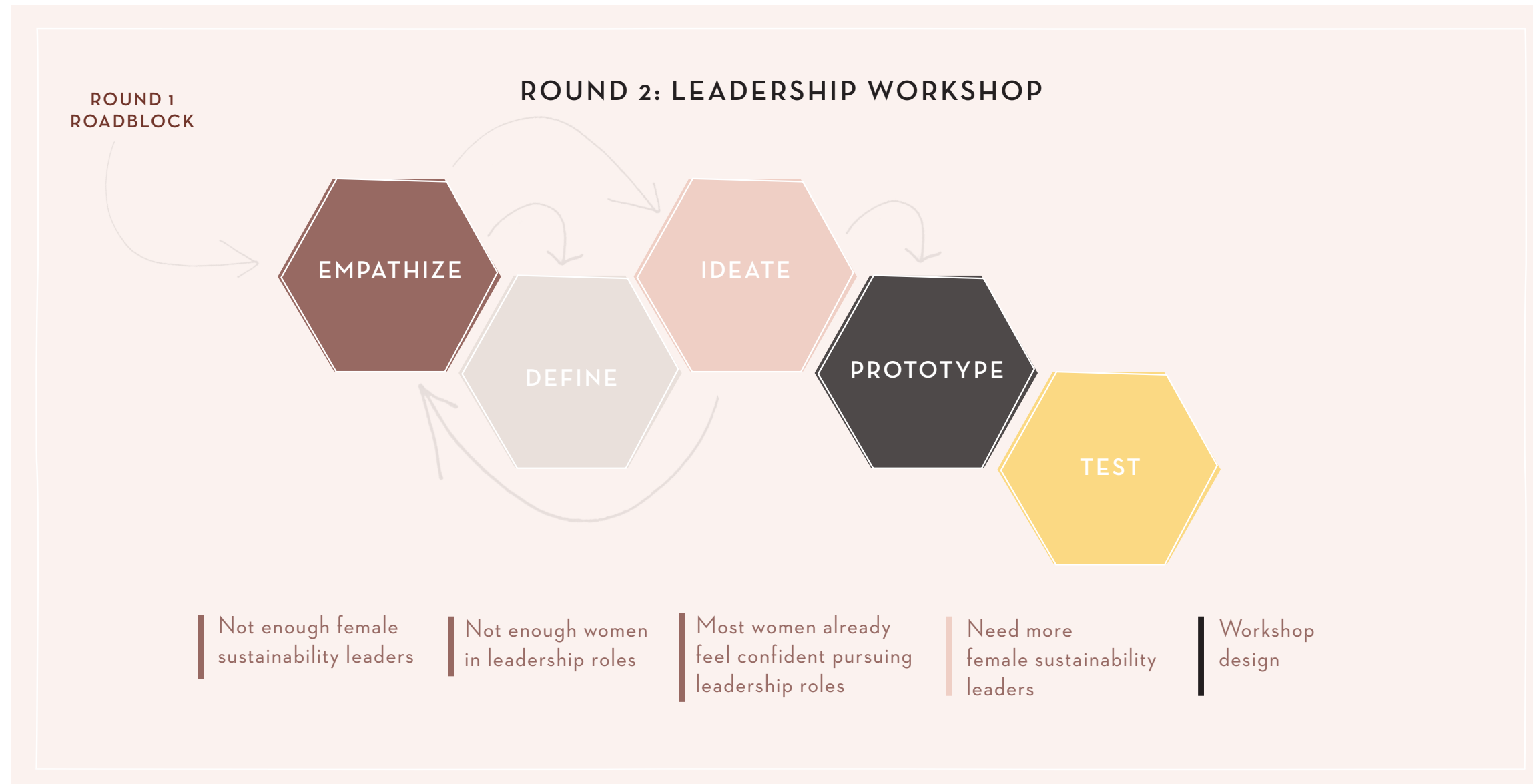
Time spent in nature doesn't equate to more sustainable action

DESIGN THINKING
ROUND 1

PROPOSED PROCESS

In the beginning, the design solution started by exploring ways to get more women outside and into nature. The theory was that if more women could connect with nature, they would be more likely to have a vested interest in taking climate action. This led to the ideation of a female-focused compass and field guide, intended to encourage women to go on expeditions in nature. The use of a physical product was intended to reach women on a consumerism level who have become conditioned to seeking deeper connection in this way.

Through the Design Thinking process, it could not be proven that more time spent in nature will lead to women taking more sustainable action in their personal or professional lives. This idea was laid aside and inspired the second phase of exploration.



DESIGN THINKING ROUND 2

If spending more time in nature doesn't lead to more women taking sustainable action, is there a way to specifically encourage women to take more sustainable action in the business world where the big decisions impacting sustainability are being made?

The second phase shifts to exploring ways of increasing female sustainability leadership. This leads to the ideation of a workbook and workshop concept targeting Millennial professional women, a focus chosen due to Millennial being the largest generation currently in the workforce.³⁹ The theory was that arming Millennial professional women with sustainability knowledge in addition to encouraging them to take on higher leadership and decision making roles would lead to more sustainable action taken by businesses overall.

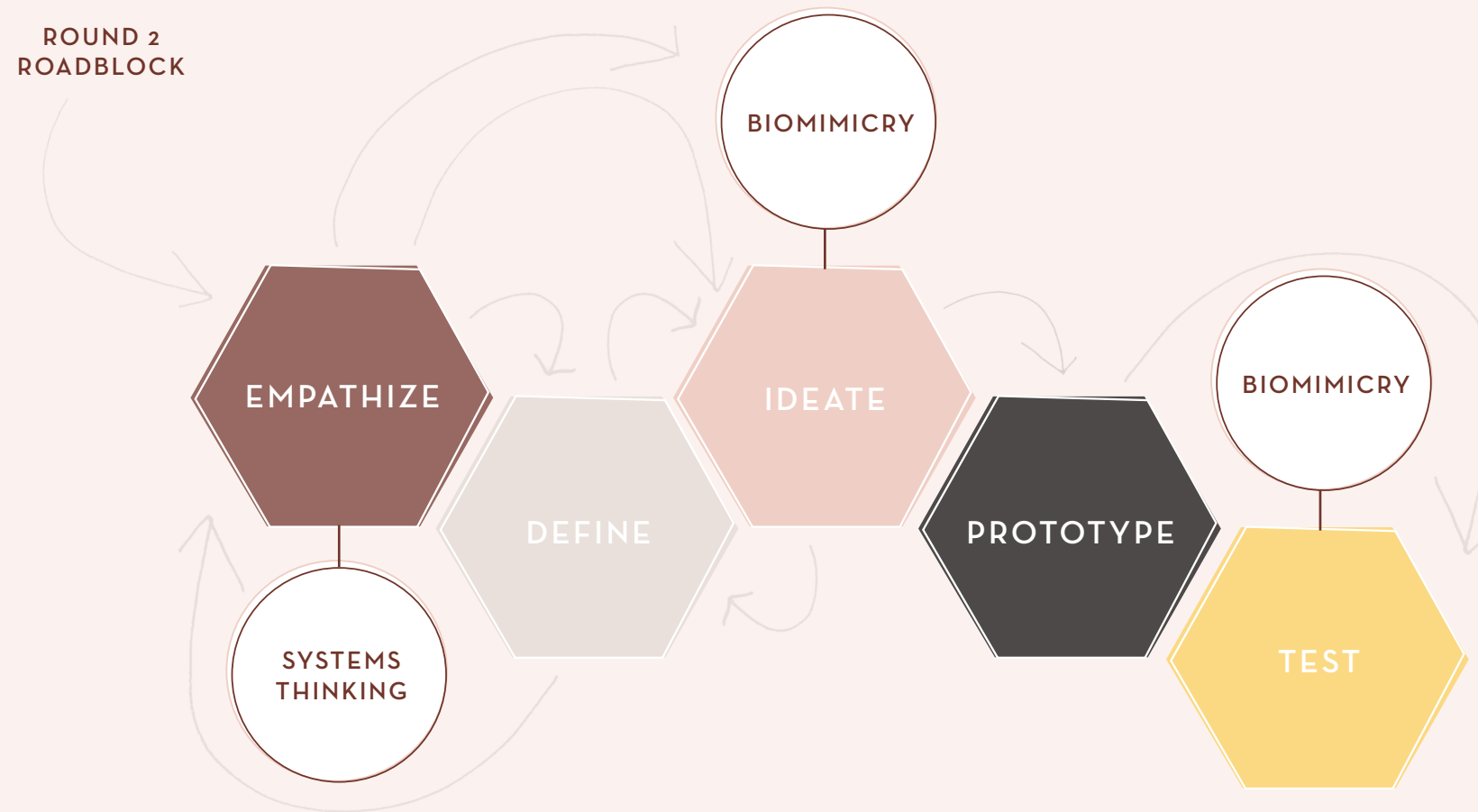
An online survey of Millennial professional women executed in the empathize phase leads to the discovery that most women already feel confident pursuing higher leadership roles and don't necessarily need encouragement to do so. This idea was laid aside and inspired the third and final phase of exploration.

DESIGN THINKING ROUND 3

Just as the Phase 2 idea was meeting a design roadblock, the COVID-19 pandemic had begun and the author of this thesis was completing a practicum project for a woman co-owned small business in Brooklyn, NY. The struggles the company and their community faced as a result were experienced first-hand. Could there be a way to support small businesses through their post COVID-19 recovery while also increasing sustainable action?

The third phase shifts to explore different ways of supporting woman-owned small businesses through a post COVID-19 recovery by adopting more sustainable business practices. More specifically, by working towards the UN SDGs.

ROUND 3: WOMEN-OWNED SMALL BUSINESS COVID-19 RECOVERY



Small businesses need help recovering from the COVID-19 pandemic

Woman-owned small businesses have been disproportionately affected by the COVID-19 pandemic

Small businesses care about sustainability but don't have the time to invest in adopting more sustainable business practices

Need more small businesses committed to sustainability initiatives

Need woman-owned businesses to stay afloat to maintain female leaders

Post COVID-19 recovery e-book and consulting for woman-owned small businesses

E-book sample cover

Evaluate against Life's Principles

ACTUAL PROCESS

Design Thinking is chosen as the overarching framework due to its strong human-centered and empathy driven approach.

Systems Thinking is utilized during the Empathize step of the Systems Thinking process in order to better understand the wider implications of the topic being explored and to seek areas of intervention.

Biomimicry is applied to the Ideate and Test steps of the Design Thinking process. In the Ideate step it assists in radical idea and solution brainstorming, and in the Test step, Life's Principles are applied to generating a test for the final outcome.

OBSERVE, ENGAGE, IMMERSE.

The Empathy phase of the Design Thinking process works to gain a better understanding of the target audience through a series of first-hand interactions, and by making new discoveries about the unique needs and challenges being faced. A considerable amount of time was spent in the Empathize phase in order to best understand the unique qualities, desires and motivations of the target audience - female small business owners. The author of this thesis presents with anecdotal observations from a career experience working for 5 different woman-owned small businesses, in addition to being raised by small business owners. The author also completed a practicum project for a woman co-owned small business over the course of the COVID-19 pandemic, engaging directly with the target audience and witnessing subsequent needs and problems first-hand.

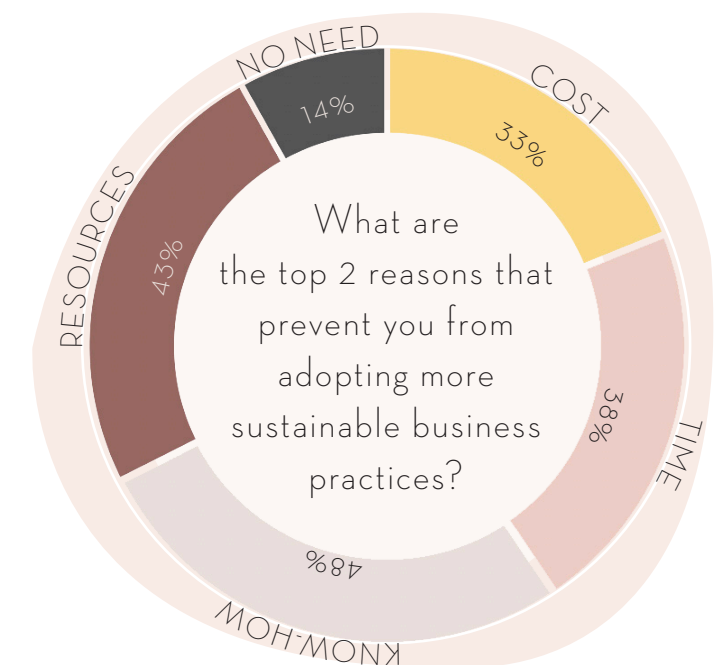
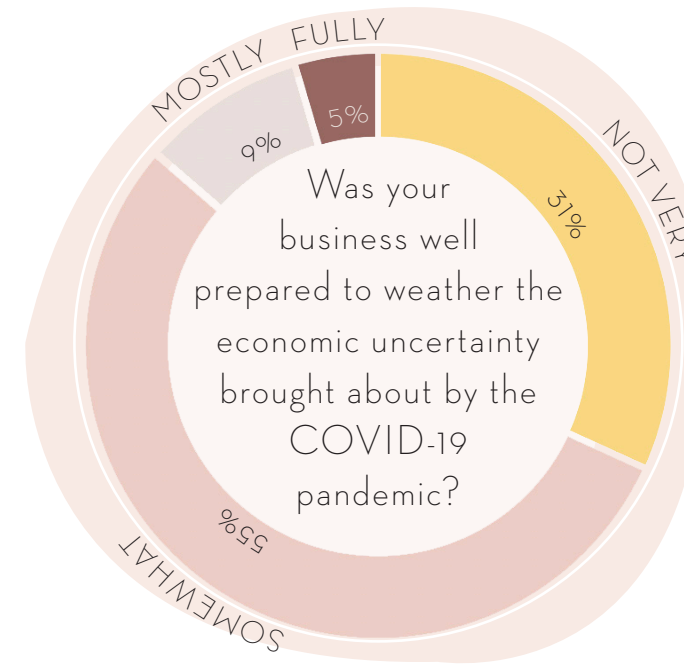
An online survey of small business owners is conducted to gain further insight into the user's world and mind. Two subsequent one-on-one interviews are then conducted with small business owners in order to gain a deeper empathetic understanding of their points of view.

KEY FINDINGS

- Few small businesses felt prepared to take on the economic hardship brought on by the COVID-19 pandemic
- Many small businesses lack a full understanding of what sustainability means from a business perspective
- Most small businesses want to be doing more but don't know where to start and lack adequate resources
- Many small businesses wish they were more involved in their local communities and having a positive impact

SURVEY RESULTS

An online survey is crafted and sent to small business owners in order to better understand how the COVID-19 pandemic has impacted them, as well as how sustainability is or is not a part of their existing business structure. The full survey and results can be viewed in Appendix A.



EMPATHY MAP

This empathy map is the result of an empathy exercise from the Creative Commons “bootcamp bootleg” guide by Stanford University’s d.school.⁴⁰ It is chosen to assist in forming a deeper understanding of the person the intended design is being created for. Insights from the conducted survey, as well as one-on-one interviews with small business owners, are used to create the map.

USER NEEDS:

Engage, Care, Belong, Learn

INSIGHTS:

The user needs a more in-depth understanding of sustainability and how it can be applied to business. The user needs to feel a sense of connection to the community they aim to support.



WHAT IS THE USER'S EXPERIENCE?

A Venn diagram is also created as the result of empathy exercises by the Creative Commons “bootcamp bootleg” guide by Stanford University’s d.school.⁴¹

This exercise assists in forming a deeper understanding of the specific person the intended design is being created for. Insights from the previously conducted survey and one-on-one interviews done with small business owners, are used to create the map.

WHAT 3 CORE AREAS SHOULD THE E-BOOK FOCUS ON?

1. LEADING THROUGH CHANGE

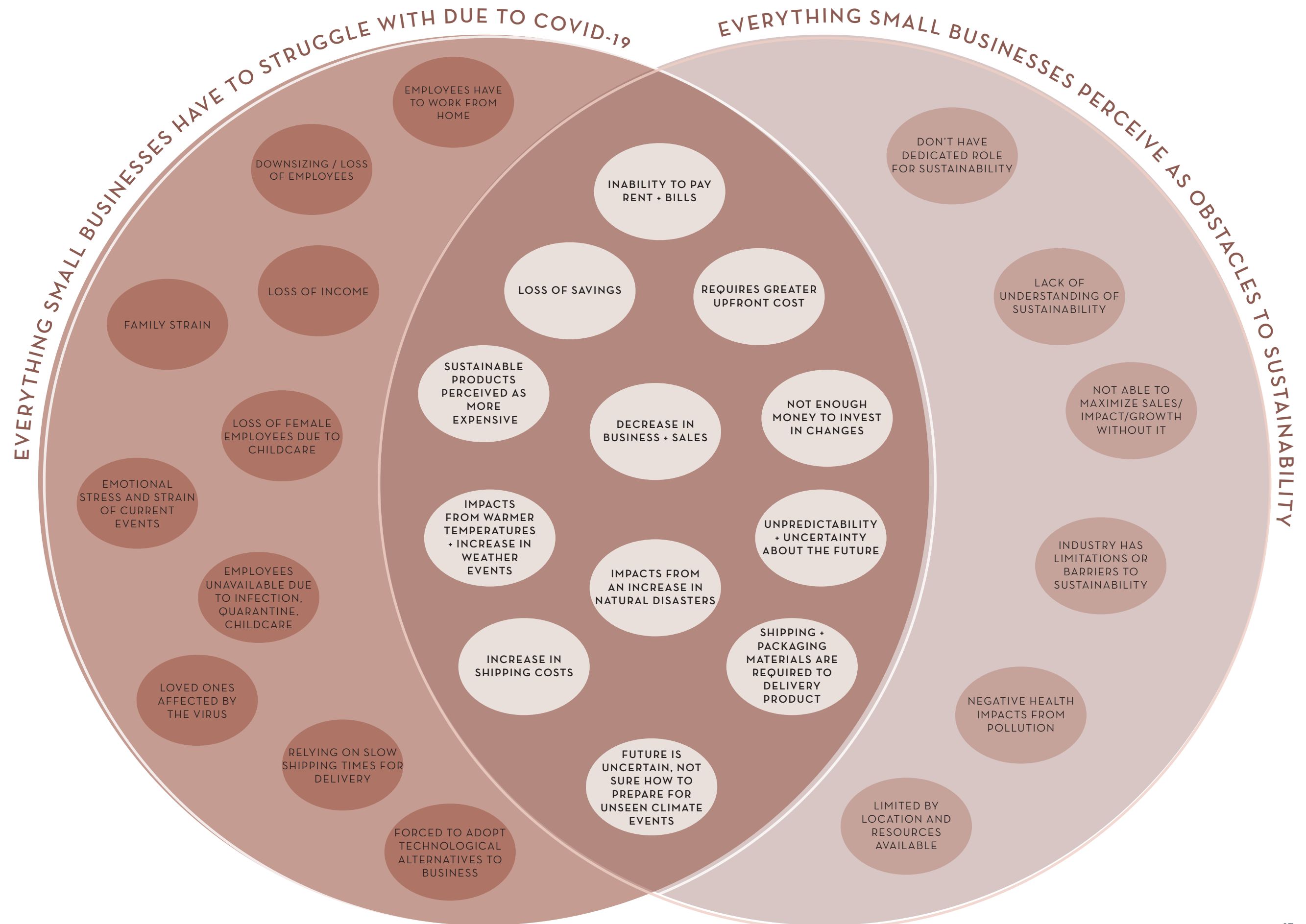
- People focused
- Feminine leadership models

2. FINANCIAL SECURITY

- Uncertainty leads to inaction
- Resiliency comes from having a safety net

3. SUPPLY CHAIN

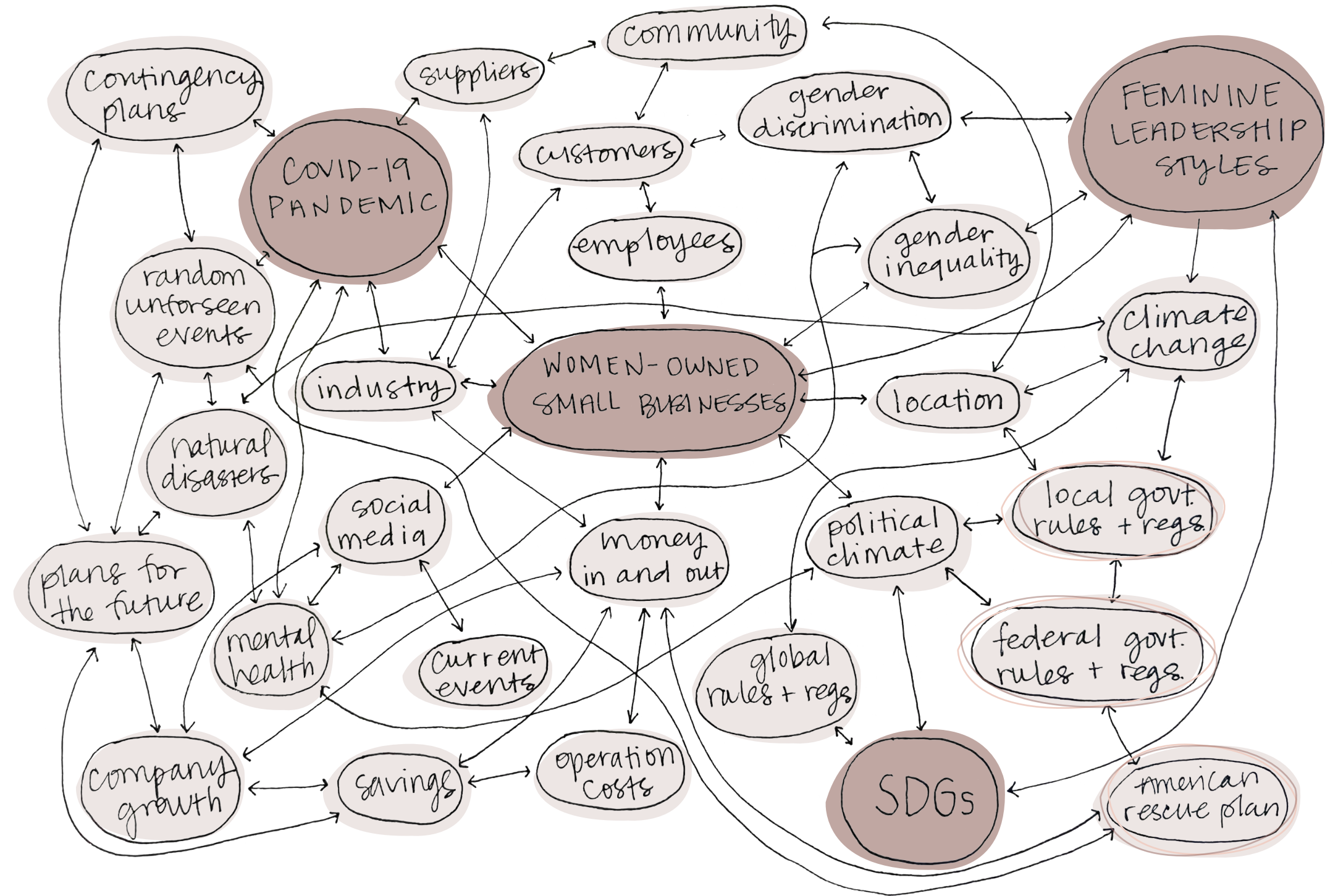
- Shipping, packaging
- Brand identity, marketing
- Physical objects, products



MIND MAP

Systems Thinking is utilized during the Empathize phase of Design Thinking in order to gain a more holistic view of the small business system from the target audience's perspective. By creating an initial mind map, a few key leverage points are discovered. Feminine leadership styles and the SDGs each have a disconnect from local and federal governments and the COVID-19 Stimulus Package (American Rescue Plan). While the American Rescue Plan addresses some environmental issues, it lacks the comprehensive approach that the SDGs offer. The COVID-19 pandemic is a major disruption affecting all of these areas and presents a unique opportunity for intervention.

Instead of focusing on the negative effecting the COVID-19 pandemic has had on each of these areas, it can be seen as the thread that connects them and holds the opportunity for strengthening the connection between them moving forward.

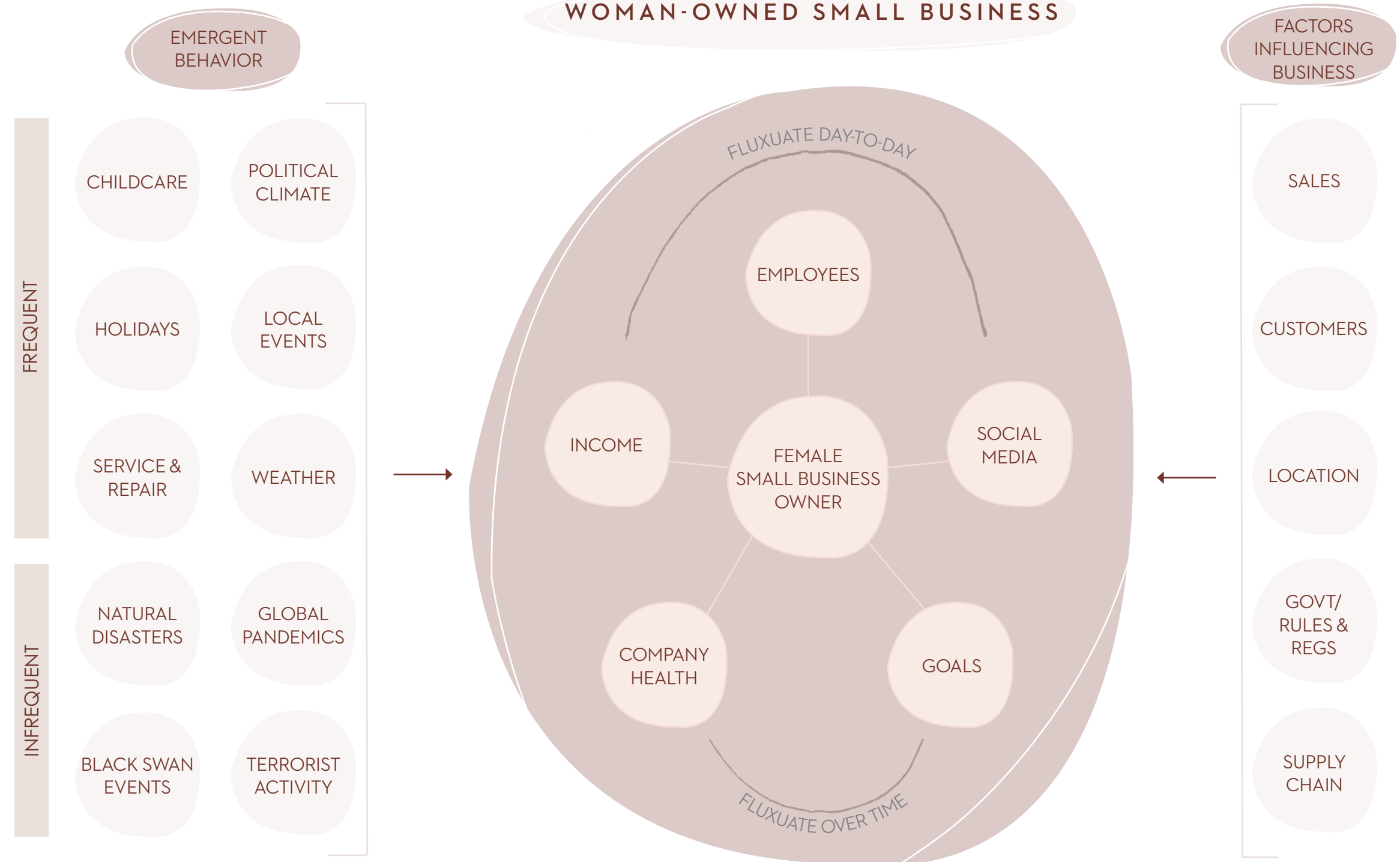


SYSTEMS MAP: COMPLEX ADAPTIVE SYSTEM

System boundary: U.S. Economy
Agents: Female small business owners

A complex adaptive system map is created in order to better understand predictable and unpredictable influences over the target audience. Doing so assists the design outcome by understanding the influences that affect a woman owned small business - ones that both can and cannot be controlled or anticipated. The design outcome uses the learnings from this system to make woman-owned small businesses more resilient to disturbances.

The identified emergent behaviors show influences that are difficult to predict. This map distinguishes between two variations of emergent behavior, frequent and infrequent. The infrequent emergent behaviors are truly unpredictable and unforeseen. More frequent emergent behaviors, while still unpredictable, happen more often and typically as surprising.



DEFINE

IN THE DEFINE STEP, DISCOVERIES MADE DURING THE EMPATHIZE PHASE ARE USED TO NARROW DOWN A KEY ACTIONABLE PROBLEM STATEMENT AND ESTABLISH A SET OF DESIGN CRITERIA AND MANDATORY CONSTRAINTS FOR THE DESIGN.

POINT-OF-VIEW

FEMALE SMALL BUSINESS OWNERS CARE DEEPLY ABOUT THE IMPACTS THEY HAVE ON THEIR COMMUNITIES AND ENVIRONMENT AND WANT MAKE A DIFFERENCE BUT DON'T KNOW WHERE TO START.

DESIGN CRITERIA

- Provide a basic understanding and background knowledge on the topics of sustainability and the UN SDGs
- Provide guidance in choosing and committing to a select number of SDGs
- Provide guidance on how best to collect and utilize company data in order to increase and maximize sustainability efforts
 - Provide guidance on how to effectively lead through change
- Provide guidance on how to achieve financial security for resiliency
 - Portray a tone of optimism and hope
 - Encourage community involvement

MANDATORY CONSTRAINTS

- Must be in digital format
- Must use text and images to convey information
 - Will exist in a post COVID-19 economy
 - Intended for female users

DESIGN THINKING FUELED BY BIOMIMICRY

Multiple rounds of the Biomimicry Design Spiral are used to inspire key functions that the final e-book design intends to carry out. The first step is to **identify** which functions should be replicated. An initial set of “How Might We” questions is made to initiate brainstorming. Three key questions are selected to be **translated** into biological terms and used to assist in the **discovery** of specific ways nature approaches relatable challenges. **Abstract** patterns are found and applied to the **emulation** of the final design concept. Finally, the design idea is **evaluated** against Life’s Principles in order to determine which parts of the design can stand to be improved upon. Pending what improvements need to be made, more laps are taken around the spiral until the design meets all of Life’s Principles and is complete.

THE BIOMIMICRY DESIGN SPIRAL

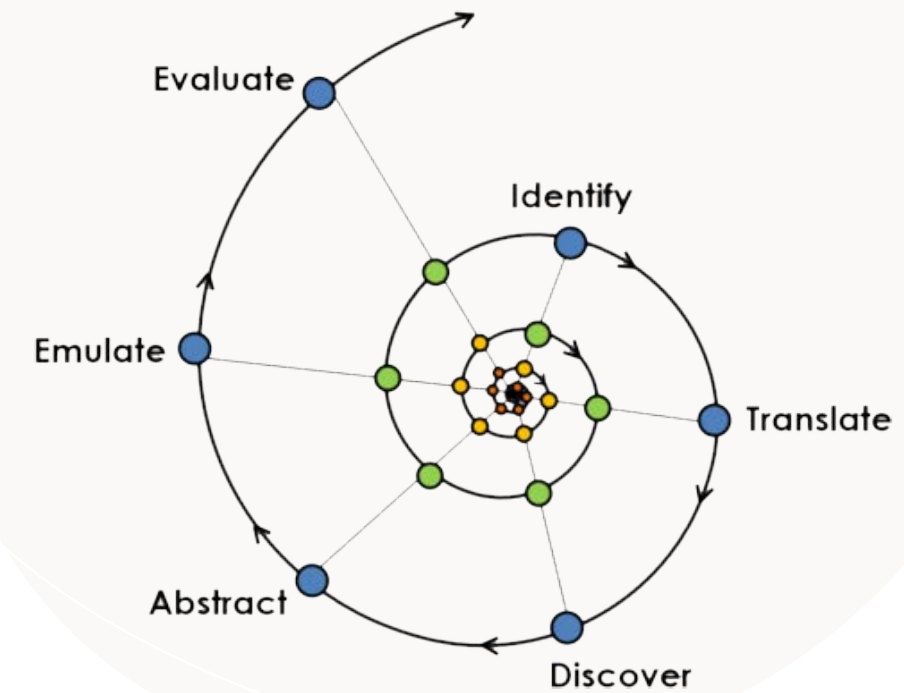
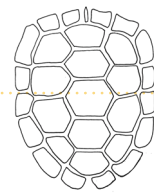
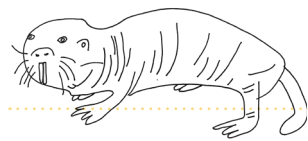


FIG 4

HOW MIGHT WE?

- How might we empower female small business owners to play a more invested role in their communities?
- How might we make female voices more heard in the business world?
- How might we help small businesses foster strength and resilience?
- How might we take advantage of an economic recovery?
- How might we educate more women on sustainable business practices?
- How might we get more companies to adopt sustainable business practices?
- How might we present information to small business owners in a way that's easy to navigate?



ASK NATURE

- How does nature share responsibility in a nutrient poor environment?
Naked mole-rats ensure colony survival by dividing work and supporting a single breeding queen. Their motto is “cooperation above competition.”⁴²
- How do organisms exhibit strength in nature in a nutrient poor environment?
“The tortoise shell offers an example of how a combination of shapes and materials can be used to build structures that would normally be vulnerable to breakage.”⁴³
- How does nature navigate in a nutrient poor environment?
“A snake's legless locomotion is possible because of its muscular body. To move, different parts of the body are at rest while others are lifted and pulled. Different locomotions are used to move on different surfaces.”⁴⁴

DESIGN THINKING FUELED BY BIOMIMICRY

The naked mole rat, the tortoise shell, and the concertina locomotion of a snake are the individual Biomimicry Design Spiral outcomes for the three different challenges posed to nature. Additional laps around the Design Spiral produced further discoveries from biology that help contribute to achieving the intended outcome - the mangrove tree, and additional snake movement patterns.

BIOLOGY IN ACTION

The tortoise shell combines different shapes to create resiliency and prevent cracking under pressure.⁴⁵ This structure pattern inspires a business building framework which is presented in the e-book. It assists companies in creating a business structure that can withstand change and unforeseen events. Within this framework is a plan for community building, which draws its inspiration from the discovery of the naked mole rat's unique collaboration efforts to support the breeding queen.⁴⁶

Another unique trait of the tortoise shell is its use of a sponge-like second layer that absorbs force. The mangrove tree is also a complex, multi-layered system and uses its unique root shapes to create friction.⁴⁷ This layered approach is also applied to the outcome's tortoise shell business framework as a means of building a business's resiliency by surrounding itself with multiple layers of protection.

Snakes utilize friction through their accordion-style concertina locomotion to navigate through narrow tunnels.⁴⁸ This inspired the design outcome's approach to leveraging disturbances as opportunities for growth and forward movement. Additional laps around the design spiral led to further snake movements being added to this concept, as each utilize friction in uniquely different ways to generate forward movement.

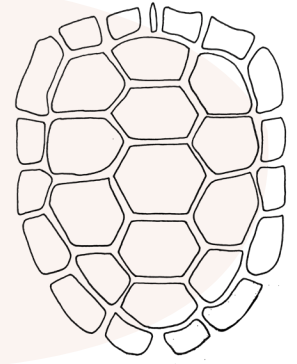


NAKED MOLE RAT

- Community supports a single queen
- Collaboration and teamwork are essential for survival
- Babysitters watch queen's offspring

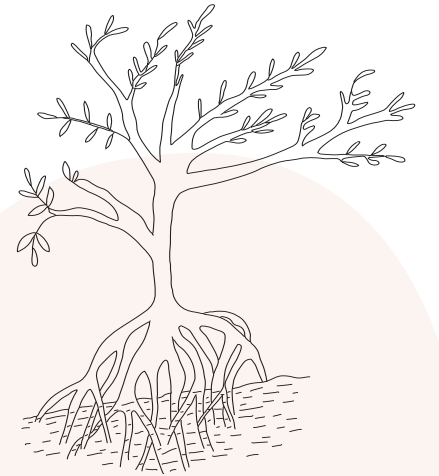
TORTOISE SHELL

- A structure resilient to breakage
- Combines different shapes + materials
- A group of tortoises = a "creep"
- Durability from sponge-like second layer



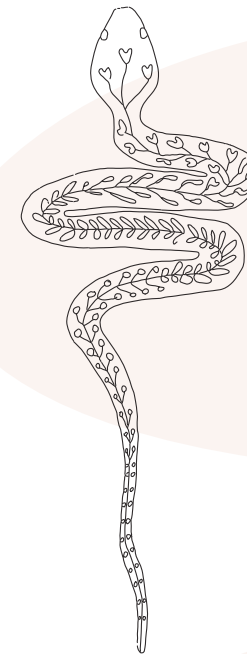
RECTILINEAR LOCOMOTION

- Static friction
- Individual scales pull body forward
- Moves in a straight line



MANGROVE TREES

- Multi-layered system
- Absorb energy from waves
- Protect coastal shorelines
- Unique root shapes create friction



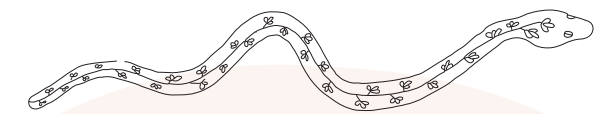
CONCERTINA LOCOMOTION

- Body alternates pulling into bends and straightening
- Static friction is critical
- Used to move through narrow tunnels
- Blocks of muscles activated simultaneously



SIDEWINDING MOTION

- Used on smooth/slippery surfaces
- Static friction
- Some sections of body lift while others remain in contact with the ground



LATERAL UNDULATION

- Sliding friction
- Waves of lateral bending
- Exerts force against objects to move around them
- Muscles active unilaterally in each bend

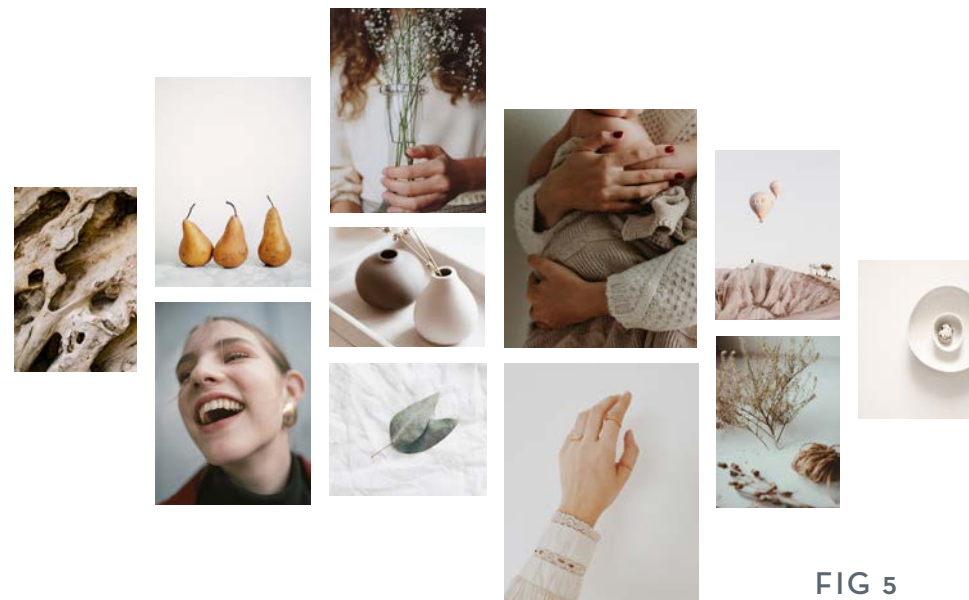


FIG 5

PROTOTYPE BUILDING

Each of the findings and discoveries made during the Empathize, Define, and Ideate steps feed into the creation of a prototype. A poem and mood board are each made as initial, tangible building blocks for the prototype and expressions of the overall feeling the design seeks to elicit.

THE PROTOTYPE

The prototype is a design for the front cover of the e-book. The prototype's goal is to aid in telling the deeper, empathetic story of the target audience. It is the first time the design solution begins to take physical form. Doing so provides a new angle from which to view, discuss, and explore the design.

The prototyped e-book front cover has a light, feminine feel intended to counteract the notion of male dominance in the business world. The logo design shows a fist with flowers growing inside to represent strength and regrowth. The rays above the fist represent the dawning of a new day.

WILD WOMAN

Deep in the hard minerals
and marrow of her bones
lies her truest, wild self.

The tides of her cells ebb and flow
with the wisdom of the wild women
who have come before her.

The world works tirelessly
to dull her colors
and mold her pliable existence
into a predictable, lifeless shape.

They don't know what she's made of.

When drifting down a conforming path
she closes her eyes
and goes back to the place
where calcium and collagen
collide.



HOW WILL THE DESIGN MEASURE UP?

For the test phase, a written test is created in order to measure the success of the design outcome. A standard linear numeric scale is used to assess and measure how closely the e-book's design brief performs each desired function identified during the Prototype phase. A number of Life's Principles are also applied to the test questions. Please see Appendix E to view a list of Life's Principles.

Each question is graded on a scale from 1-5, with 5 meaning it fully performs the function and 1 meaning it fails to perform the function.

Results of the test are provided on page 33.

TEST

1 The e-book promotes cooperation among community members to accomplish a common goal.

1 2 3 4 5

2 The e-book is comprised of individual parts that move together strategically to create forward movement.

1 2 3 4 5

3 The e-book has a layered system of protection against disturbances.

1 2 3 4 5

4 The e-book has the ability to use different methods of navigation according to the demands of the environment

1 2 3 4 5

5 The e-book has a strong foundational core that can withstand external pressure.

1 2 3 4 5

6 The e-book utilizes disturbances as opportunities for growth.

1 2 3 4 5

7 The e-book is resource efficient.

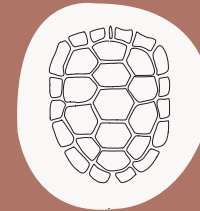
1 2 3 4 5

8 The e-book can adapt to changing conditions.

1 2 3 4 5

KEY INSIGHTS & DISCOVERIES THAT FEED INTO THE DESIGN OUTCOME

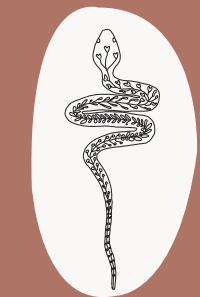
- The COVID-19 pandemic begins in March of 2020 and exacerbates all problems previously being explored
- It's observed during the thesis candidate's practicum project, completed for a woman-owned small business in the summer of 2020, that microenterprises have a strong desire to engage in more sustainable business practices but lack the knowledge required to implement them, and don't have the extra time or resources needed to commit to the task
- A missing link is discovered between government and the SDGs and it presents a key opportunity for intervention - plans are made for the final outcome to maximize on opportunities presented by this weak link by putting a focus on SDGs
- The e-book will focus on three core areas: leading through change, financial security, and supply chain
- It's discovered that a core, deeper feeling among woman-owned small business owners is a strong sense of responsibility for the impacts their businesses have on the environment, but frustration of not knowing where to start



- The tortoise shell's unique structure and combination of shapes prevent it from cracking under pressure and impact - a framework is created for this natural structure to be applied to a business structure in order to build resiliency



- Tortoise shells utilize layers of spongy material underneath their hard exterior shell for an added ability to absorb shock, and mangrove trees similarly utilize a layering system to absorb energy - the combination of these layering concepts are applied to small businesses in order to absorb the effects of change and not succumb to pressure as easily



- Snake's utilize different means of movement based on the type of surface they encounter, and friction plays a major role in their ability to generate forward movement regardless of obstacles present - these discoveries are applied to the ways small businesses pivot when presented with different scenarios and encounter "friction" points



- The naked mole rat builds its community around a single breeding queen - their unique methods of operating as a community unit are applied to ways in which woman-owned small businesses can better foster community and create an effective support system

THE OUTCOME: AN E-BOOK DESIGN PROPOSAL

Sample pages are created to provide a visual display of the e-book's intended design and contents. The logo created during the prototype phase graces the front cover and influences the look and feel for the remaining pages. The e-book intentionally uses a soft design and color pallet to appeal to its female target audience, and as a mark of opposition to masculine dominance.

FRONT COVER DESIGN SAMPLE

THE FUTURE IS FEMININE⁵⁰



A POST COVID-19 GREEN
RECOVERY GUIDE FOR WOMAN-
OWNED SMALL BUSINESSES

TABLE OF CONTENTS SAMPLE PAGE

TABLE OF CONTENTS

1. Introduction
2. Leading Through Change
3. Financial Security
4. Supply Chain
5. The Snake: Embracing Friction
6. The Tortoise Shell: Taking Action

INTRODUCTION

The e-book begins with an introduction section that provides background information on: the current state of sustainability, sustainable business practices, the UN SDGs and the UN Global Compact, and how each of these are of relevance to small businesses. Readers are introduced to the Feminine Economy framework, as introduced by Jennifer Armbrust in her book *Proposals For The Feminine Economy*.⁵¹ The book's "12 Principles For Prototyping A Feminist Business" are presented as an overarching theme for the e-book's content.

12 Principles For Prototyping A Feminist Business

1. You have a body
2. You are connected with the earth, the plants, and all living beings
3. Integrate!
4. Institutionalize empathy: build frameworks that support feelings
5. Embody your values
6. Reclaim happiness: new definitions of success
7. Consider everything an experiment
8. Free yourself from the myth of meritocracy
9. Tell the truth
10. Cultivate abundance consciousness
11. A business can be a healing for yourself & others
12. A business can be a model for a new social & economic order

INTRODUCTION SAMPLE PAGE

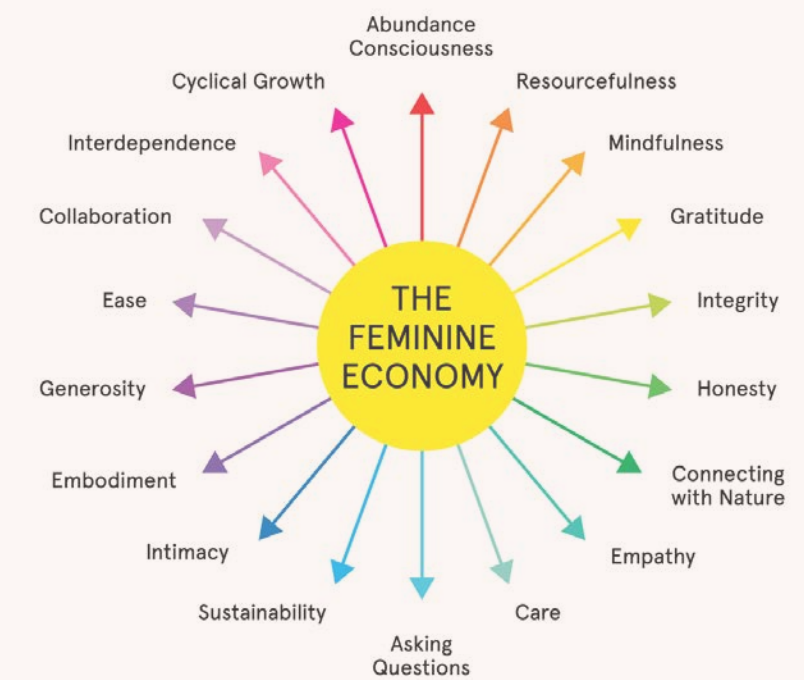
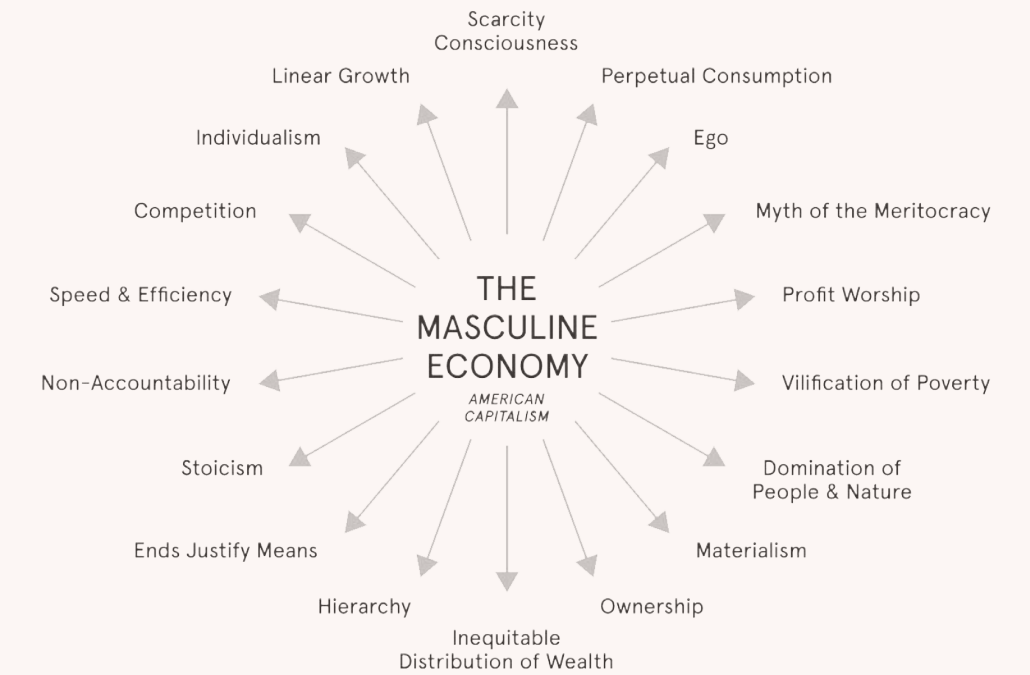


FIG 6,7

THE UN SDGs & THE UN GLOBAL COMPACT⁵²

Readers will receive a full overview of the UN SDGs along with examples of how each can be applied through the lens of a small business. After a foundation of understanding is formed, readers will then be led through various exercises in order to determine which SDGs they feel the most connected to, and ultimately which ones will be the best choice for their business to make a commitment to achieving. Businesses will select between one and three UN SDGs to commit to.

The e-book will also include an overview of the Ten Principles of the UN Global Compact with details about how they are linked to the UN SDGs. Providing this background will help the business better form their own goals and think differently about the achievements they'd like to strive for.

THE TEN PRINCIPLES OF THE UN GLOBAL COMPACT

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Labor

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labor;

Principle 5: the effective abolition of child labor; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

LEADING THROUGH CHANGE

The SCARF Model is the chosen focus for helping readers learn how to more effectively lead through change, as continued change and disruption are an inevitable part of our world. The SCARF model is based on neuroscience research and implies that humans have five social domains which activate the same threat and reward responses in the brain, and these are each needed for physical survival. These five key domains influence human behavior in social settings.⁵³

The five domains of human social experience are: Status, Certainty, Autonomy, Relatedness, and Fairness.

The e-book provides information on each domain and the reader completes a variety of SCARF exercises which assist them in formulating a plan for dealing with potential situations of change and threat.

THE SCARF MODEL

SCARF MODEL

SCARF Model for Dealing with Change Resistance and Threat

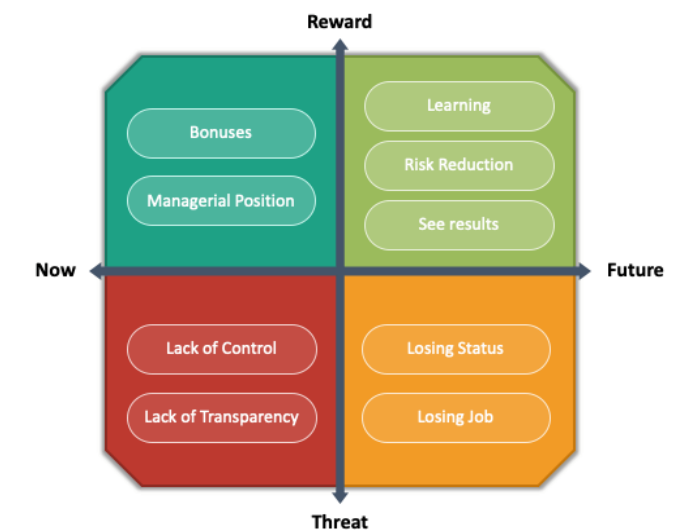
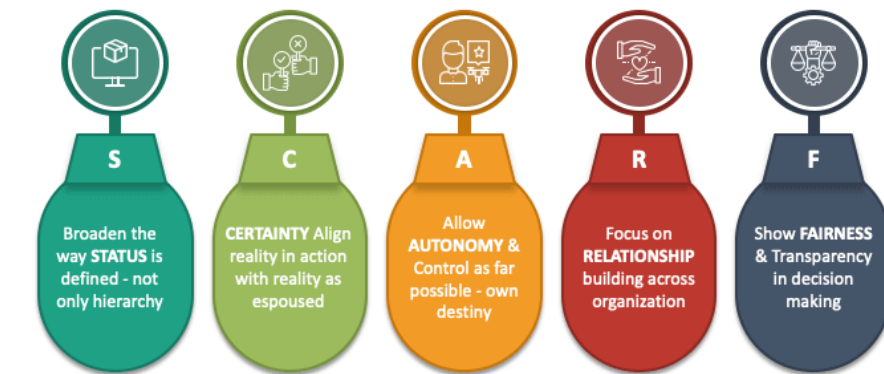


FIG 8, 9

FINANCIAL SECURITY

“The art of making change involves developing a project that gets humans to do things that make measurable change.”⁵⁴ Katie Patrick’s book *How To Save The World* is used as a key part of the e-books strategy on financial security. Data can hold immense power when it’s collected effectively, but it’s often not being taken advantage of. Discovering unique and outside-the-box ways of harnessing business data in order to track useful information, and learning how to analyze that data and apply it to a business, is a hidden key for building greater resiliency within a small business.

The e-book will be the reader’s impetus for a deeper examination of how data is being leveraged within their company, and discovering areas of their business that hold an opportunity for a strategic collection of data, but where no collection is currently underway. It will also outline key resources for which to measure different types of data and make it readily accessible for analysis and application. Assistance in executing these techniques is provided by the sustainability consultant, should the small business owner decide to take that step.

While data collection has the power to impact many areas of the business, the focus here will specifically be on using it in ways that leverage financial security.

FINANCIAL SECURITY SAMPLE PAGE

BUILDING FINANCIAL SECURITY WITH DATA

“THE FIRST STEP IN CHANGING THE WORLD IS TO BRING THE MEASUREMENT OF WHAT YOU WANT TO CHANGE INTO THE CENTER OF YOUR UNIVERSE.”⁵⁵

– KATIE PATRICK

SUPPLY CHAIN

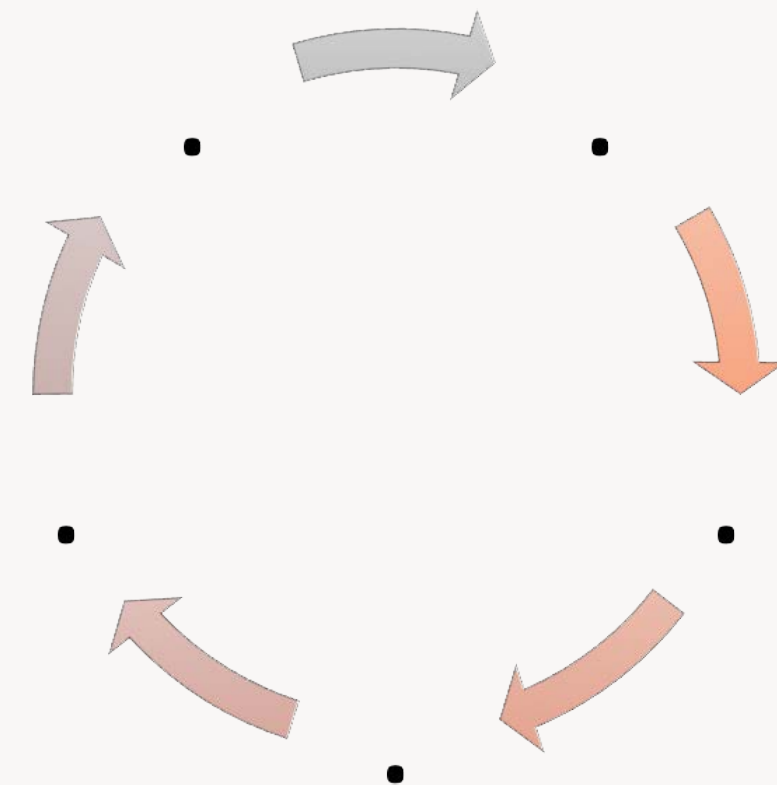
From physical objects being sold to the objects being used around the office, supply chains are an inevitable and monumental aspect of modern business - every thing comes from somewhere. This section of the e-book helps the reader better understand the wider implications that supply chain choices have, and tactics for increasing sustainability within their supply chains.

The next step is examining all physical product(s) that the small businesses is currently selling. Topics to cover include shipping and packaging as well as brand identity, marketing, and social media presence. The concept of life cycle analysis will be introduced, and the following books will be key resources for building this section of the e-book.

- *Cradle to Cradle* by Michael Braungart and William McDonough
- *Packaging Sustainability* by Wendy Jedlička

SUPPLY CHAIN SAMPLE PAGE

EXAMINING YOUR SUPPLY CHAIN





THE SNAKE: EMBRACING FRICTION

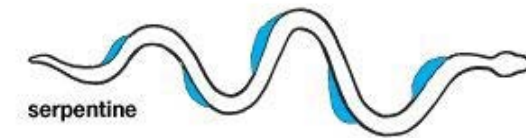
Snakes are able to navigate all different types of terrain with their strategic movements. For example, when a snake meets an obstacle, such as a rock, it forms its body around the rock in order to maximize friction, which it utilizes to continue generating forward movement when the obstacle has passed. Friction is an essential part of a snake's ability to move. By studying the snake's unique movement tactics, small businesses can learn new ways of thinking about problem solving and how to approach obstacles. The e-book, through a variety of brainstorming exercises, assists the reader in coming up with ways in which these strategies can be applied to their specific business.

Snake Sample Page

Snake locomotion



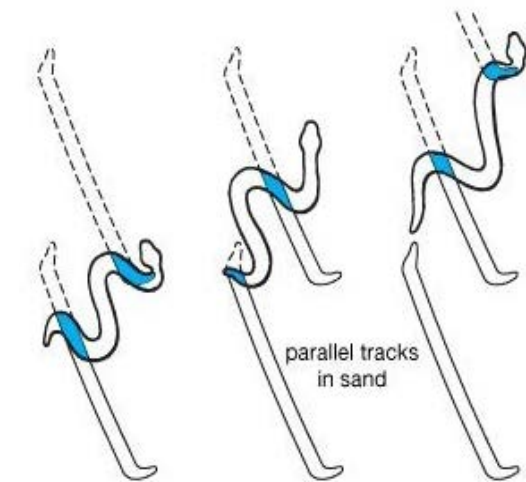
rectilinear



serpentine



concertina



sidewinding

parallel tracks
in sand

FIG 10



THE TORTOISE SHELL: TAKING ACTION

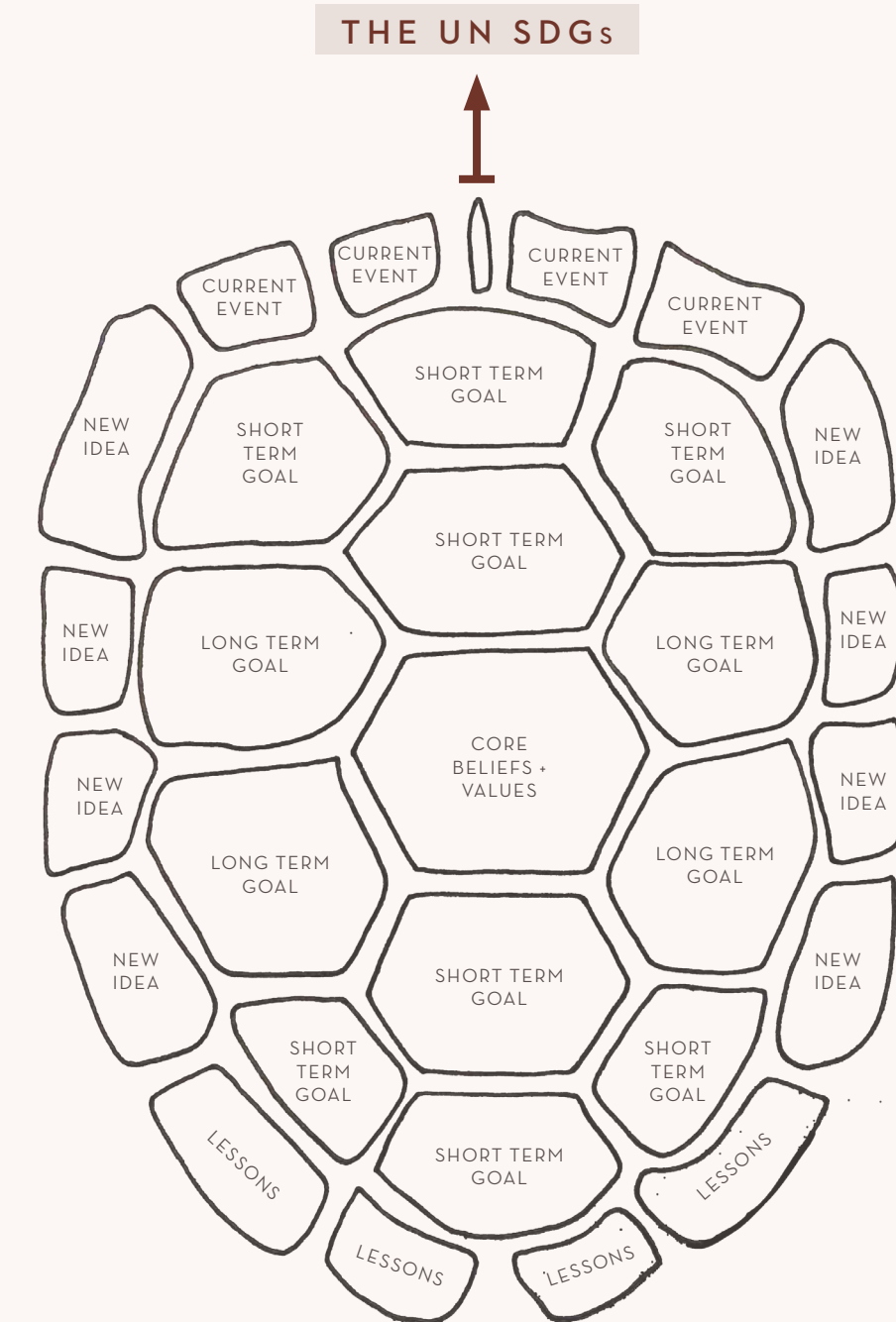
The final chapter of the book brings the tortoise shell to life in the form of a framework for businesses to follow in order to continue making forward motion towards their chosen UN SDGs. A tortoise is an ideal metaphor because it stands as a reminder to not rush the process, and that forward progress is what's ultimately most important as opposed to the speed at which that progress is made. Focusing on speed falls into the masculine model of thinking. Allowing the process to shape itself as it moves along and go at its own pace will lead to a more natural, easeful result.

First, brainstorming exercises assist the company in determining its core beliefs and values which sit at the very heart of the work they do. These rest in the very center of the shell and are the strongest point from which the remaining structure draws its stability. Directly surrounding the core beliefs and values are four different long term goals. The next layer includes a variety of short term goals. The outer ring of smaller plates are filled with new ideas, current events, and lessons learned from the past.

Much like the tortoise shell, each of these different components are needed to maintain the integrity of the shell and resist breakage.

TORTOISE SHELL SAMPLE PAGE

BUILD YOUR TORTOISE SHELL



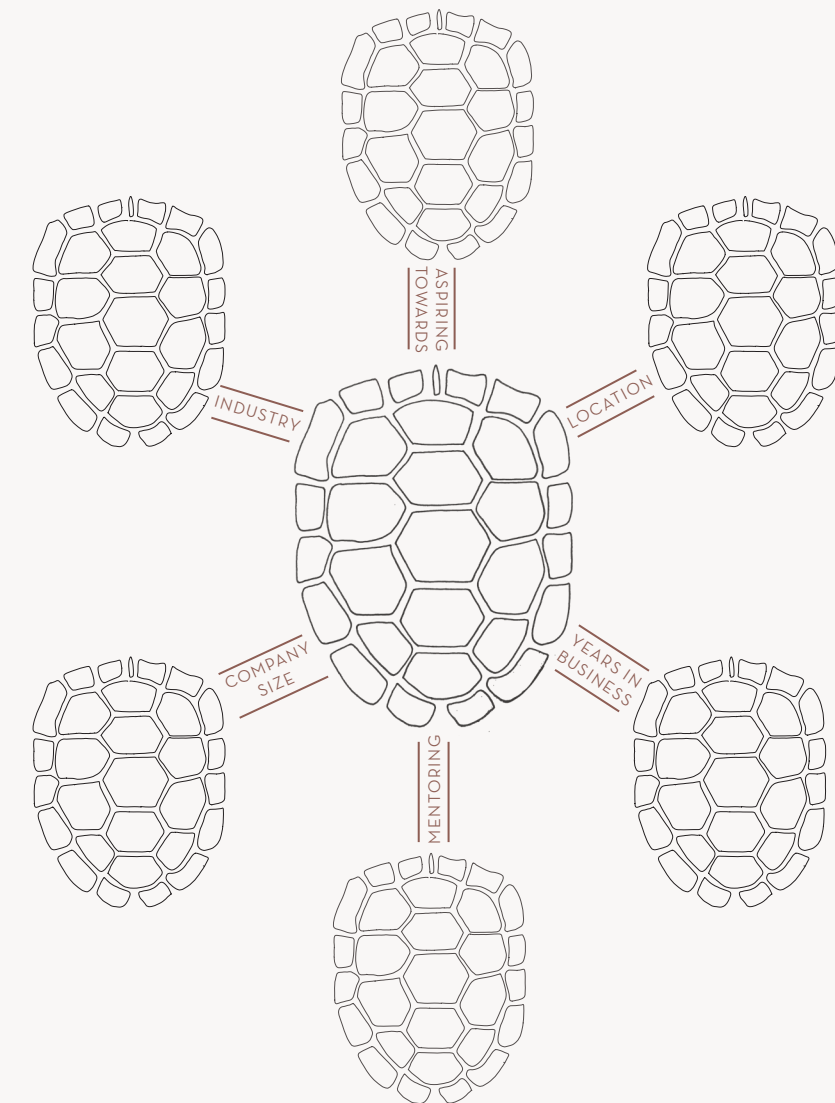
FORMING A TORTOISE CREEP

Underneath the tortoise’s hard shell are layers of cartilage that absorb shock - a protection mechanism to keep the outer shell from breaking. This same idea is applied to the proposed tortoise business framework. The “layers” which protect the outer shell of one woman-owned small business are partnerships of other woman-owned small businesses. This idea is visually displayed in the form of a creep, the name for a group of tortoises.

In this model, each tortoise shell represents a small business. Each individual company forms a partnership with six other companies: one with which it shares an industry, one with which it shares a company size, one with which it shares location, one with which it shares years in business, one with which it aspires to, and one in which it mentors.

This model accomplishes a number of things. It builds resiliency by forming tight bonds and relationships over shared experiences. It also makes community the focal point of the business approach. In addition, it encourages working together instead of seeing others as a threat or strictly competition.

HOW TO FORM YOUR TORTOISE CREEP



FUNCTIONALITY

The e-book will be easily accessible online and available for reading on a wide variety of electronic devices. Humans are known to inherently value things based on how much they pay for them,⁵⁶ so the e-book will be available for a fee as opposed to being offered free of cost. The fee structure will be determined in the next steps phase when creating a sustainable business plan for the consultancy company.

The e-book will be highly interactive and engaging, and have many live links throughout its pages. By making the e-book available online, links can continue to be kept updated as new information emerges, allowing the e-book to stay relevant over time.

IMPACT

If implemented, the impacts of the e-book would be far reaching. The unique community-centered aspect of the e-book's proposed business structure would assist the book in reaching a greater audience and impacting the way business communities operate.

With more small businesses working toward the UN SDGs, more progress could be made in achieving them, and at a faster rate. It would also assist woman-owned small businesses in their post COVID-19 recovery, and help to give them a leg up as sustainability becomes an essential aspect of modern business.



PUTTING THE DESIGN TO THE TEST

1. The Tortoise Creep design for stronger community engagement of woman-owned small businesses promotes cooperation among community members to accomplish a common goal.
2. The Tortoise Shell business framework design is comprised of different parts of varying shapes that move together strategically to create forward movement.
3. The Tortoise Creep design builds resiliency within a company by forming a layer of support around it, in the form of other woman-owned businesses and community partners.
4. The use of different snake movement techniques provide an example to business owners for different strategies they can use to embrace friction (negative or unforeseen experiences). However, the means of application is uncertain and can stand to be improved.
5. The Tortoise Shell business framework design has a central hexagon shell shape, representing a company's core beliefs and values.
6. The use of different snake movements helps businesses turn friction points into opportunities for growth and forward progress.
7. The e-book functions solely online and doesn't lean on a physical product, thereby making it resource efficient.
8. By being interactive and solely online, the links in the e-book are able to be updated and the content adapted as needed.

TEST

1 The e-book promotes cooperation among community members to accomplish a common goal.

1 2 3 4 5

2 The e-book is comprised of individual parts that move together strategically to create forward movement.

1 2 3 4 5

3 The e-book has a layered system of protection against disturbances.

1 2 3 4 5

4 The e-book has the ability to use different methods of navigation according to the demands of the environment

1 2 3 4 5

5 The e-book has a strong foundational core that can withstand external pressure.

1 2 3 4 5

6 The e-book utilizes disturbances as opportunities for growth.

1 2 3 4 5

7 The e-book is resource efficient.

1 2 3 4 5

8 The e-book can adapt to changing conditions.

1 2 3 4 5

OUTCOME

Two different microenterprises are highlighted to showcase the design solution in action. A set number of UN SDGs are selected as the company's key focus, and the tortoise shell exercise is completed to layout how steady forward progress can be made given the many individual considerations applicable to each company.

CASE STUDY I

JAM ARCHITECTURE

9 Employees
8 Years in business
Brooklyn, NY



FIG 11

3 UN SDGs OF FOCUS

#6 - Clean Water & Sanitation

Ensure availability and sustainable management of water and sanitation for all.⁵⁸

- Prioritize water efficiency in company office and on all projects
- Prohibit use of chemicals that harm water quality
- Educate employees on water quality as it applies to company's most common job sites and location types

#7 - Affordable & Clean Energy

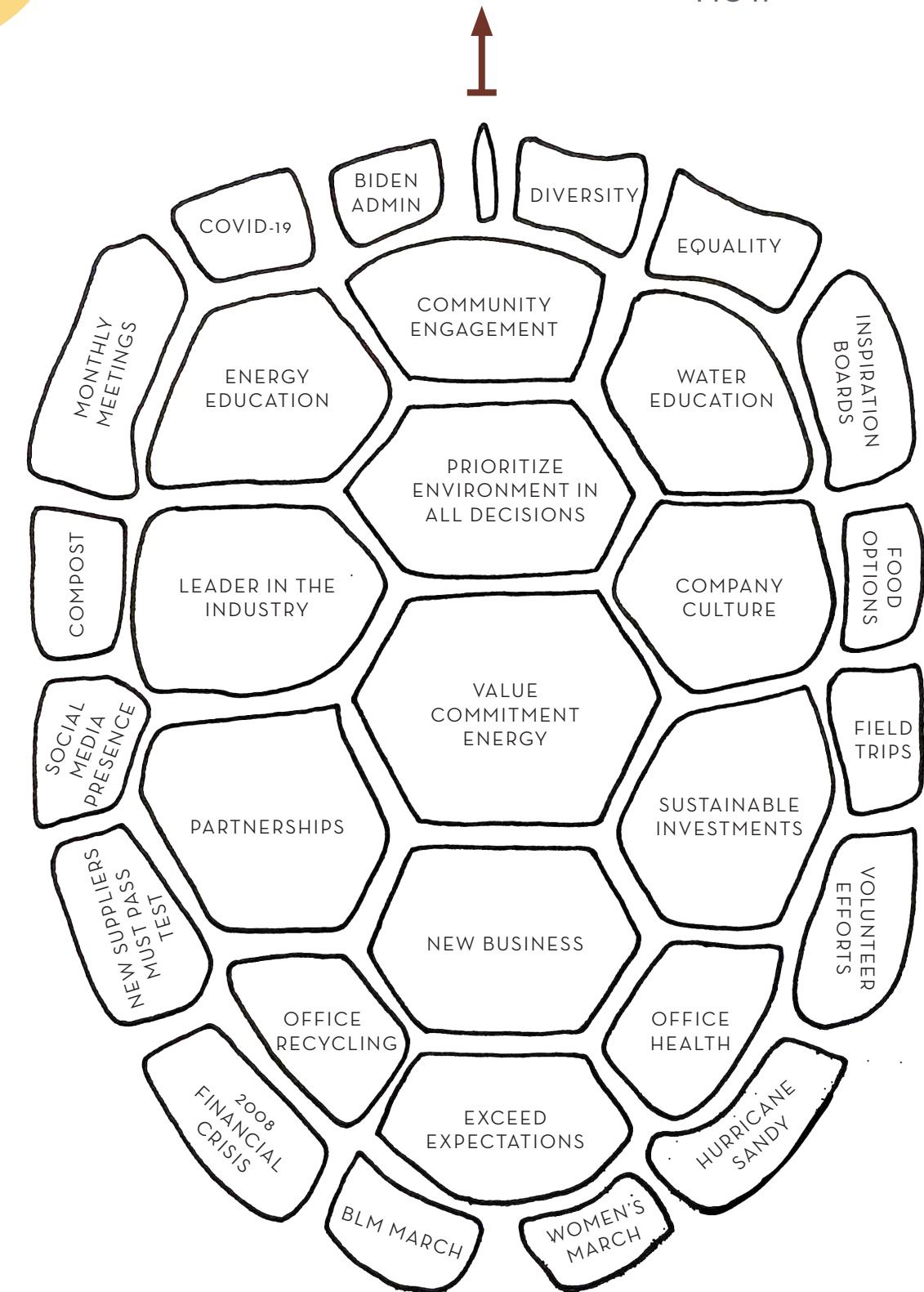
Ensure access to affordable, reliable, sustainable and modern energy for all.⁵⁹

- Prioritize energy efficiency across all operations
- Pursue certifications for energy efficiency
- Invest in employee skills development for clean technology adoption

#11 - Sustainable Cities & Communities

Make cities and human settlements inclusive, safe, resilient and sustainable.⁶⁰

- Foster and lead sustainability efforts within local community
- Discover new business opportunities in key areas: office sharing, public transportation, smart metering and energy efficient buildings
- Commit to a volunteer effort that builds collective resiliency





CASE STUDY II

ANNIE'S OVEN

1 Employee
2 Years in business
Macon, GA

2 UN SDGs OF FOCUS

#2 - Zero Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture.⁶¹

- Source food supplies from local, small-scale farmers
- Incorporate nutrition education and awareness into business model
- Provide total supply chain transparency
- Follow a strict no-food-waste plan

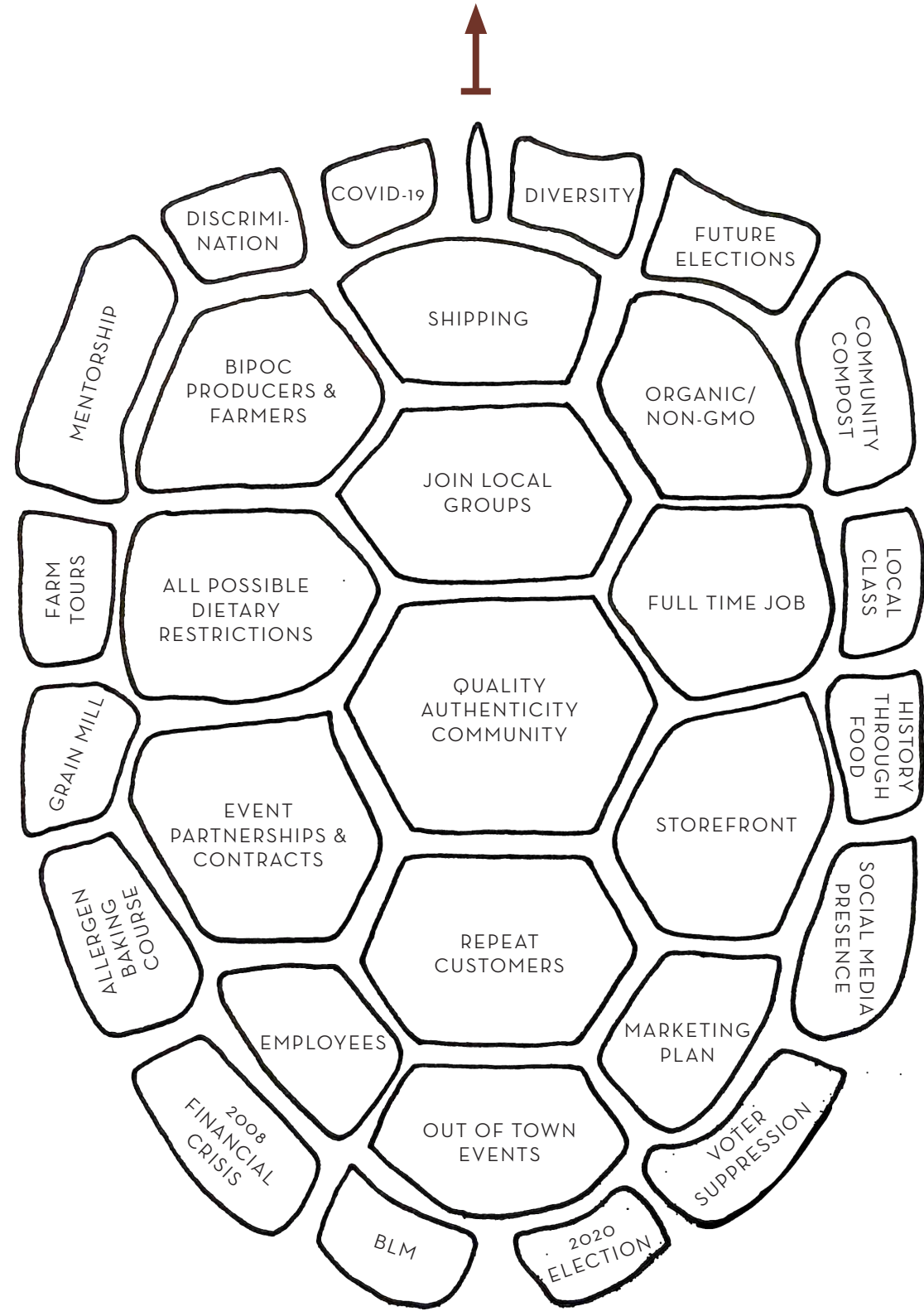
#12 - Responsible Consumption & Production

Ensure sustainable consumption and production patterns.⁶²

- Conduct sustainability reporting
- Adopt sustainable business practices where realistic possibility exists
- Formulate a recycling and upcycling plan and utilize post consumer materials for packaging and marketing materials
- Devise a plan for organic waste collection
- Complete an impact reduction assessment



FIG 12



CONCLUSION

Based on the outcome of the Design Thinking process and the test score the final outcome received, it's reasonable to conclude that the proposed design solution is viable and worthy of pursuing. Within the project's scope, it makes reasonable progress towards its intended objectives for people, planet, and profit.

If put into action, it would be on target to accomplish its objectives:

- More woman-owned small businesses engaged in their local communities and prioritizing sustainable business practices
- More woman-owned small businesses making a concerted effort in working towards achieving the UN SDGs
- More woman-owned small businesses remaining in business post COVID-19

NEXT STEPS

1. Complete e-book
2. Conduct further research on how to best serve woman minority owned small businesses. Determine target number of these small businesses to be reached.
3. Develop a sustainable business plan for the e-book and consultancy concept
4. Launch e-book and consultancy with a single employee
5. Partner with Instant Teams and develop other partnerships to grow business
6. Continue growing business into other avenues:
 - Workshops
 - Focus on other minority groups
 - Instagram Account
 - Podcast
 - More e-books written



STRONGER TOGETHER

women have been starved of space for so long that
when one of us finally makes it into the arena
we're made to feel there isn't
enough room for all of us
that if we're not careful another woman
might come along and take our spot
but space doesn't work like that
look at all the men in the arena
getting stronger as their numbers multiply
**more women in the arena means
more room for all of us to rise**

RUPI KAUR

WORKS CITED

- 1 The Institute of Leadership & Management, “Small business: the big challenges of sustainability,” The Institute of Leadership & Management, Accessed on April 2, 2021, <https://www.institutelm.com/static/969e4ffa-d4ab-4fcb-9d5c8cac32422e19/Small-business-the-big-challenges-of-sustainability-FINAL.pdf>
- 2 Small Business Trends, “Small Business Statistics,” Small Business Trends, March 24, 2020, <https://smallbiztrends.com/small-business-statistics>
- 3 U.S. Small Business Administration, “Small Business Facts: Spotlight On Women-Owned Employer Businesses,” SBA, March 2019, <https://cdn.advocacy.sba.gov/wp-content/uploads/2019/03/22170128/Small-Business-Facts-Spotlight-on-Women-Owned-Employer-Businesses.pdf>
- 4 Janice Redmond, Elizabeth Walker, Calvin Wang, Mike Simpson and Craig Parker, “The Impact Of Small Business On The Environment,” Accessed February 12, 2021, ECU Publications.
- 5 Annie Pilon, “SCORE Looks at Impact of COVID-19 on Small Business in the US,” Small Business Trends, December 8, 2020, <https://smallbiztrends.com/2020/12/score-survey-covid-impact-small-business.html>
- 6 Alexander W. Bartik, Marianne Bertrand, Zoe Cullen, Edward L. Glaeser, Michael Luca, and Christopher Stanton, “The Impact of COVID-19 on Small Business Outcomes and Expectations,” PNAS, July 28, 2020, <https://www.pnas.org/content/117/30/17656#sec-9>
- 7 Alexander W. Bartik, Marianne Bertrand, Zoe Cullen, Edward L. Glaeser, Michael Luca, and Christopher Stanton, “The Impact of COVID-19 on Small Business Outcomes and Expectations,” PNAS, July 28, 2020, <https://www.pnas.org/content/117/30/17656#sec-9>
- 8 Greg Petro, “Sustainable Retail, How Gen Z Is Leading The Pack,” Forbes, January 31, 2020, <https://www.forbes.com/sites/gregpetro/2020/01/31/sustainable-retail-how-gen-z-is-leading-the-pack/?sh=229cb20e2ca3>
- 9 Open Insights, “Small Business Owners, What You Need To Know About Sustainability,” Open Insights, June 10, 2020, <https://insights.nordea.com/en/business/small-business-owners-what-you-need-to-know-about-sustainability/>
- 10 Leora Klapper and Natascha Beinker, “Smaller businesses lack the financing to be sustainable. Here’s how we can help,” World Economic Forum, November 8, 2017, <https://www.weforum.org/agenda/2017/11/smes-need-financing-to-improve-their-sustainability-practices-here-s-how-we-can-help/>
- 11 Open Insights, “Small Business Owners, What You Need To Know About Sustainability,” Open Insights, June 10, 2020, <https://insights.nordea.com/en/business/small-business-owners-what-you-need-to-know-about-sustainability/>
- 12 Gretchen Frazee, “4 Reasons It’s Hard To Become A Sustainable Business,” PBS News Hour, September 23, 2019, <https://www.pbs.org/newshour/economy/making-sense/4-reasons-its-hard-to-become-a-sustainable-business>
- 13 Talk Business, “SMEs cannot afford to ignore their environmental impacts,” Talk Business, Accessed on February 11, 2021, <https://www.talk-business.co.uk/2018/12/07/smes-cannot-afford-to-ignore-their-environmental-impacts/>
- 14 Miemie Struwig and Riyaadh Lillah, “How small businesses can manage their impact on the environment,” The Conversation, June 9, 2016, <https://theconversation.com/how-small-businesses-can-manage-their-impact-on-the-environment-60484>
- 15 Miemie Struwig and Riyaadh Lillah, “How small businesses can manage their impact on the environment,” The Conversation, June 9, 2016, <https://theconversation.com/how-small-businesses-can-manage-their-impact-on-the-environment-60484>
- 16 Janice Redmond, Elizabeth Walker, Calvin Wang, Mike Simpson and Craig Parker, “The Impact Of Small Business On The Environment,” Institute for Small Business & Entrepreneurship, Accessed February 12, 2021, ECU Publications.
- 17 Janice Redmond, Elizabeth Walker, Calvin Wang, Mike Simpson and Craig Parker, “The Impact Of Small Business On The Environment,” Accessed February 12, 2021, ECU Publications.
- 18 U.S. Chamber of Commerce, “Coronavirus pandemic disproportionately affecting female-owned small businesses, according to new U.S. Chamber poll,” U.S. Chamber of Commerce, August 26, 2020, <https://www.uschamber.com/press-release/coronavirus-pandemic-disproportionately-affecting-female-owned-small-businesses>
- 19 Julie Kashen, Sarah Jane Glynn, and Amanda Novello, “How COVID-19 Sent Women’s Workforce Progress Backward,” Center for American Progress, October 30, 2020. <https://www.americanprogress.org/issues/women/reports/2020/10/30/492582/covid-19-sent-womens-workforce-progress-backward/>
- 20 Alicia Sasser Modestino, “Coronavirus child-care crisis will set women back a generation,” The Washington Post, July 29, 2020, <https://www.washingtonpost.com/us-policy/2020/07/29/childcare-remote-learning-women-employment/>
- 21 Vaishali Sinha, “We can solve climate change – if we involve women,” World Economic Forum, September 16, 2019, <https://www.weforum.org/agenda/2019/09/why-women-cannot-be-spectators-in-the-climate-change-battle/>
- 22 Lauren Noël and Christie Hunter Arscott, “Be The Company Millennial Women Want To Work For,” Thinkers 50, Accessed on October 31, 2019, <https://thinkers50.com/blog/millennial-women/>

- 23 American Express, Rep. *The 2019 State of Women-Owned Business Report*. American Express, 2019, https://s1.q4cdn.com/692158879/files/doc_library/file/2019-state-of-women-owned-businesses-report.pdf
- 24 Deloitte Perspectives, “Business recovery from COVID-19: A Guide for Board Members,” Deloitte, Accessed on February 27, 2021, <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/covid-19/business-recovery-from-covid-19.html>
- 25 Rebecca Lake, “6 Ways To Rebuild Your Small Business After COVID-19,” Forbes, April 30, 2020, <https://www.forbes.com/sites/advisor/2020/04/30/6-ways-to-rebuild-your-small-business-after-covid-19/?sh=57e545416cc5>
- 26 The World Bank, “Micro, Small and Medium Enterprises (Number),” The World Bank, October 26, 2020, <https://datacatalog.worldbank.org/micro-small-and-medium-enterprises-number>
- 27 Alyssa Gregory, “Online Resources for Female Small Business Owners,” The Balance Small Business, November 20, 2019, <https://www.thebalancesmb.com/online-resources-for-women-2951858>
- 28 Instant Teams, Accessed on February 24, 2021, <https://instantteams.com/>
- 29 Jon Younger, “Instant Teams: Bringing Remote and Freelance Opportunity To Military Spouses All Over The World,” Forbes, April 15, 2020, <https://www.forbes.com/sites/jonyounger/2020/04/15/instant-teams-bringing-remote-and-freelance-opportunity-to-military-spouses-all-over-the-world/?sh=765de9ef75e7>
- 30 Blue Star Families, “Milspouse Employment Study,” Blue Star Families, April 5, 2016, <https://bluestarfam.org/milspouse-employment/>
- 31 Iberdrola, “The Economic Impacts of Climate Change,” Iberdrola, Accessed on March 7, 2021, <https://www.iberdrola.com/environment/impacts-of-climate-change>
- 32 Kathryn Kobe and Richard Schwinn, *Small Business GDP: 1998–2014*, US Small Business Administration Office of Advocacy, December 2018, advocacy.sba.gov
- 33 André Dua, Deepa Mahajan, Lucienne Oyer, and Sree Ramaswamy, “US small-business recovery after the COVID-19 crisis,” McKinsey & Company, July 7, 2020, <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/us-small-business-recovery-after-the-covid-19-crisis#>
- 34 Paula Fernandes, “What Is The Triple Bottom Line?,” Business.com, April 10, 2020, <https://www.business.com/articles/triple-bottom-line-defined/>
- 35 United States Census Bureau, “Annual Business Survey Release Provides Data on Minority-Owned, Veteran-Owned and Women-Owned Businesses,” United States Census Bureau, January 28, 2021, <https://www.census.gov/newsroom/press-releases/2021/annual-business-survey.html>
- 36 United Nations, “The 17 Goals,” United Nations, Accessed March 12, 2021, <https://sdgs.un.org/goals>
- 37 Homi Kharas and John McArthur, “Sustainable Development Goals: How Can They Be A Handrail For Recovery?,” Brookings, November 17, 2020, <https://www.brookings.edu/research/sustainable-development-goals-how-can-they-be-a-handrail-for-recovery/>
- 38 United Nations, “A UN framework for the immediate socio-economic response to COVID-19,” United Nations, April 2020, <https://unsdg.un.org/sites/default/files/2020-04/UN-framework-for-the-immediate-socio-economic-response-to-COVID-19.pdf>
- 39 Lauren Noël and Christie Hunter Arcott, “Be The Company Millennial Women Want To Work For,” Thinkers 50, accessed on October 31, 2019, <https://thinkers50.com/blog/millennial-women/>
- 40 D.School, “Design Thinking Bootleg,” Creative Commons, Accessed March 31, 2021, <https://dschool.stanford.edu/resources/design-thinking-bootleg>
- 41 D.School, “Design Thinking Bootleg,” Creative Commons, Accessed March 31, 2021, <https://dschool.stanford.edu/resources/design-thinking-bootleg>
- 42 Ask Nature, “Naked Mole-rat Queens Hire Babysitters to Care for Young,” Ask Nature, September 10, 2020, <https://asknature.org/strategy/naked-mole-rat-queens-hire-babysitters-to-care-for-young/>
- 43 Ask Nature, “Shell Geometry and Materials Resist Cracking,” Ask Nature, March 8, 2021, <https://asknature.org/strategy/shapes-cover-curved-surfaces-efficiently/>
- 44 Dickinson County Conservation Board, “Creepy But Cool: How Snakes Can Move Without Legs,” Dickinson County Conservation Board, February 26, 2018, <https://dickinsoncountyconservationboard.com/2018/02/26/creepy-but-cool-how-snakes-can-move-without-legs/>
- 45 Ask Nature, “Shell Geometry and Materials Resist Cracking,” Ask Nature, March 8, 2021, <https://asknature.org/strategy/shapes-cover-curved-surfaces-efficiently/>
- 46 Ask Nature, “Naked Mole-rat Queens Hire Babysitters to Care for Young,” Ask Nature, September 10, 2020, <https://asknature.org/strategy/naked-mole-rat-queens-hire-babysitters-to-care-for-young/>

- 47 Ask Nature, “Mangrove Forests Calm Coastal Waters,” Ask Nature, July 2, 2020, <https://asknature.org/strategy/mangrove-forests-calm-coastal-waters/>
- 48 Ask Nature, “Accordion Technique Allows Controlled Movement Through Narrow Channels,” Ask Nature, February 14, 2021, <https://asknature.org/strategy/accordion-movement-propels-snakes-through-narrow-channels/>
- 49 Jennifer Armbrust, *Proposals For The Feminine Economy*, Topanga, CA: The Fourth Wave, 2018.
- 50 Jennifer Armbrust, *Proposals For The Feminine Economy*, Topanga, CA: The Fourth Wave, 2018.
- 51 Jennifer Armbrust, *Proposals For The Feminine Economy*, Topanga, CA: The Fourth Wave, 2018.
- 52 United Nations, “The Ten Principles of the UN Global Compact,” United Nations, Accessed April 4, 2020, <https://www.unglobalcompact.org/what-is-gc/mission/principles>
- 53 Mind Tools, “David Rock’s SCARF Model,”
- 54 Katie Patrick, *How To Save The World*, San Francisco, CA: Hello World Labs, 2019.
- 55 Katie Patrick, *How To Save The World*, San Francisco, CA: Hello World Labs, 2019.
- 56 Dimitri Akhrin, “Why You Shouldn’t Give Away Your Products For Free,” Forbes, October 20, 2020, <https://www.forbes.com/sites/forbesbusinesscouncil/2020/10/20/why-you-shouldnt-give-away-your-product-for-free/?sh=7fc7ba4b3604>
- 57 The Institute of Leadership & Management, “Small business: the big challenges of sustainability,” The Institute of Leadership & Management, Accessed on April 2, 2021, <https://www.institutelm.com/static/969e4ffa-d4ab-4fcb-9d5c8cac32422e19/Small-business-the-big-challenges-of-sustainability-FINAL.pdf>
- 58 UN DESA, “Micro-, Small, and Medium- sized Enterprises (MSMEs) and their role in achieving the Sustainable Development Goals,” United Nations Department of Economic and Social Affairs, Accessed on January 5, 2021, https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf
- 59 UN DESA, “Micro-, Small, and Medium- sized Enterprises (MSMEs) and their role in achieving the Sustainable Development Goals,” United Nations Department of Economic and Social Affairs, Accessed on January 5, 2021, https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf
- 60 UN DESA, “Micro-, Small, and Medium- sized Enterprises (MSMEs) and their role in achieving the Sustainable Development Goals,” United Nations Department of Economic and Social Affairs, Accessed on January 5, 2021, https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf
- 61 UN DESA, “Micro-, Small, and Medium- sized Enterprises (MSMEs) and their role in achieving the Sustainable Development Goals,” United Nations Department of Economic and Social Affairs, Accessed on January 5, 2021, https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf
- 62 UN DESA, “Micro-, Small, and Medium- sized Enterprises (MSMEs) and their role in achieving the Sustainable Development Goals,” United Nations Department of Economic and Social Affairs, Accessed on January 5, 2021, https://sustainabledevelopment.un.org/content/documents/26073MSMEs_and_SDGs.pdf

IMAGES

Cover Page - Fist logo design; hand drawing – Drawing inspired by “International Women’s Day Single Element,” Canva, <https://www.canva.com/media/MADRdyQInfk>

Cover Page - Fist logo design; floral drawings – Drawings inspired by “Greenery branches time lapse,” Studio Boan, <https://www.studioboan.com/>

Figure 1 - Pink flowers photograph by Allison Keener, Keener, <https://allisonkeener.com/>

Figure 2 - Lavender field photography by Allison Keener, Keener, <https://allisonkeener.com/>

Figure 3 – United Nations, United Nations Sustainable Development Goals, United Nations, Accessed March 6, 2021, <https://www.un.org/sustainabledevelopment/news/communications-material/>

Figure 4 - Biomimicry Design Spiral <https://biomimicry.org/biomimicry-design-spiral/>

Figure 5 - Collection of images sourced from Canva.com free image library

Figure 6 - Jennifer Armbrust, “Proposals For The Feminine Economy,” Sister, Accessed March 22, 2021, <https://sister.is/proposals-for-the-feminine-economy>

Figure 7 - Jennifer Armbrust, “Proposals For The Feminine Economy,” Sister, Accessed March 22, 2021, <https://sister.is/proposals-for-the-feminine-economy>

Figure 8 - Sketch Bubble, “SCARF Model,” <https://www.sketchbubble.com/en/presentation-scarf-model.html>

Figure 9 - Sketch Bubble, “SCARF Model,” <https://www.sketchbubble.com/en/presentation-scarf-model.html>

Figure 10 - Encyclopedia Britannica Kids , Snake Locomotion, Encyclopedia Britannica Kids, Accessed on April 4, 2021, <https://kids.britannica.com/students/assembly/view/171904>

Figure 11 - United Nations, United Nations Sustainable Development Goals, United Nations, Accessed March 6, 2021, <https://www.un.org/sustainabledevelopment/news/communications-material/>

Figure 12 - United Nations, United Nations Sustainable Development Goals, United Nations, Accessed March 6, 2021, <https://www.un.org/sustainabledevelopment/news/communications-material/>

Figure 13 - Blue Star Families, “Challenges Facing Our Military Families,” Blue Star Families, April 5, 2016, <https://bluestarfam.org/milspouse-employment/>

Figure 14- Ask Nature, “Biomimicry Taxonomy,” Ask Nature, Accessed April 1, 2021, <https://asknature.org/resource/biomimicry-taxonomy/>

Figure 15 - Biomimicry 3.8, “Life’s Principles,” Creative Commons, https://glbiomimicry.org/Education/Lifes_Principles_Handout_FINAL.pdf/

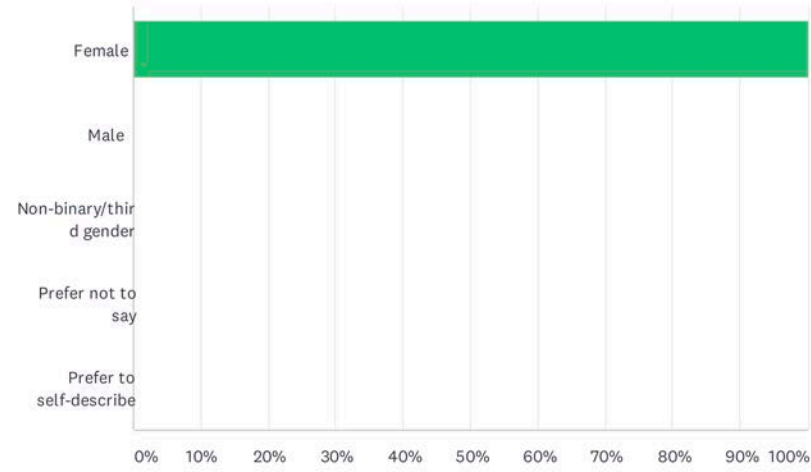
Figure 16 - Biomimicry 3.8, “Life’s Principles,” Creative Commons, https://glbiomimicry.org/Education/Lifes_Principles_Handout_FINAL.pdf/

Presentation design support by Keener.

keener.
KEENERCOLLECTIVE.COM
@KEENER.CO

Q1 What is your gender?

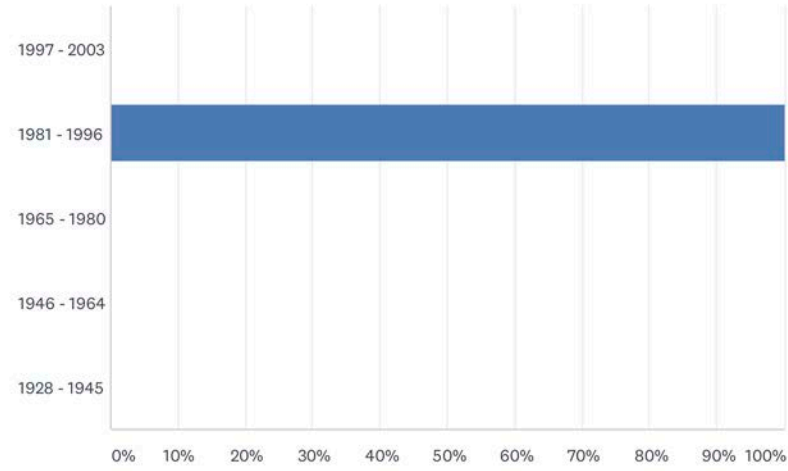
Answered: 112 Skipped: 0



ANSWER CHOICES	RESPONSES	
Female	100.00%	112
Male	0.00%	0
Non-binary/third gender	0.00%	0
Prefer not to say	0.00%	0
Prefer to self-describe	0.00%	0
TOTAL		112

Q2 In which year range were you born?

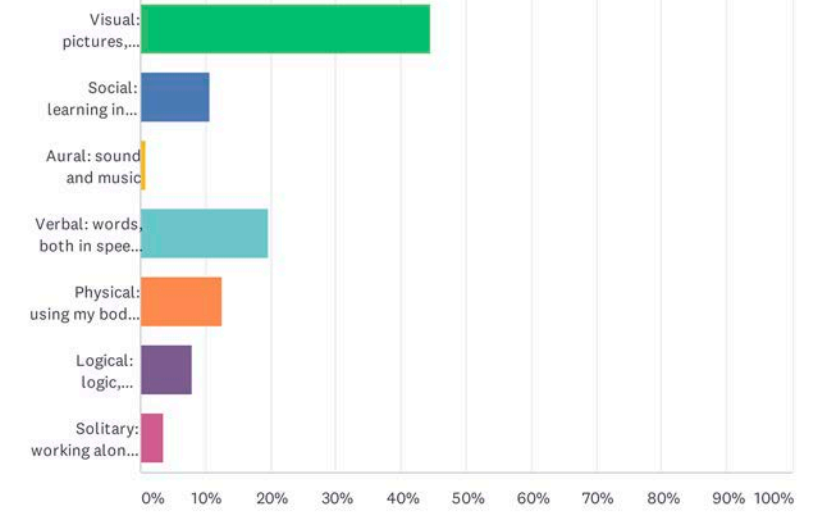
Answered: 112 Skipped: 0



ANSWER CHOICES	RESPONSES	
1997 - 2003	0.00%	0
1981 - 1996	100.00%	112
1965 - 1980	0.00%	0
1946 - 1964	0.00%	0
1928 - 1945	0.00%	0
TOTAL		112

Q3 My preferred learning method is:

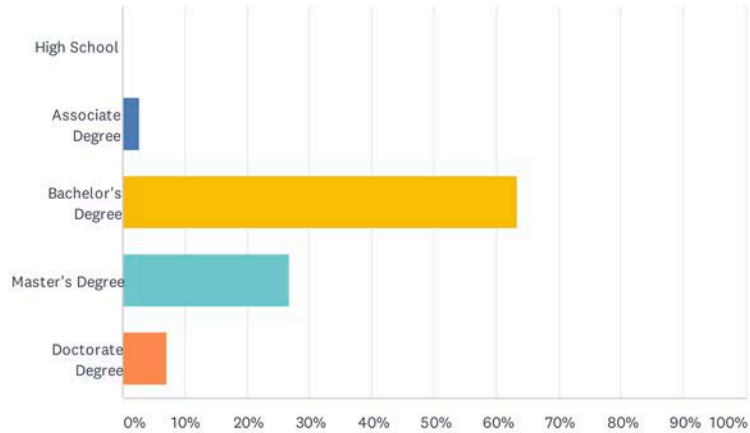
Answered: 112 Skipped: 0



ANSWER CHOICES	RESPONSES	
Visual: pictures, images, spatial understanding	44.64%	50
Social: learning in groups or with other people	10.71%	12
Aural: sound and music	0.89%	1
Verbal: words, both in speech and writing	19.64%	22
Physical: using my body, hands, sense of touch	12.50%	14
Logical: logic, reasoning, systems	8.04%	9
Solitary: working alone and self-study	3.57%	4
TOTAL		112

Q4 What's the highest level of education you've completed?

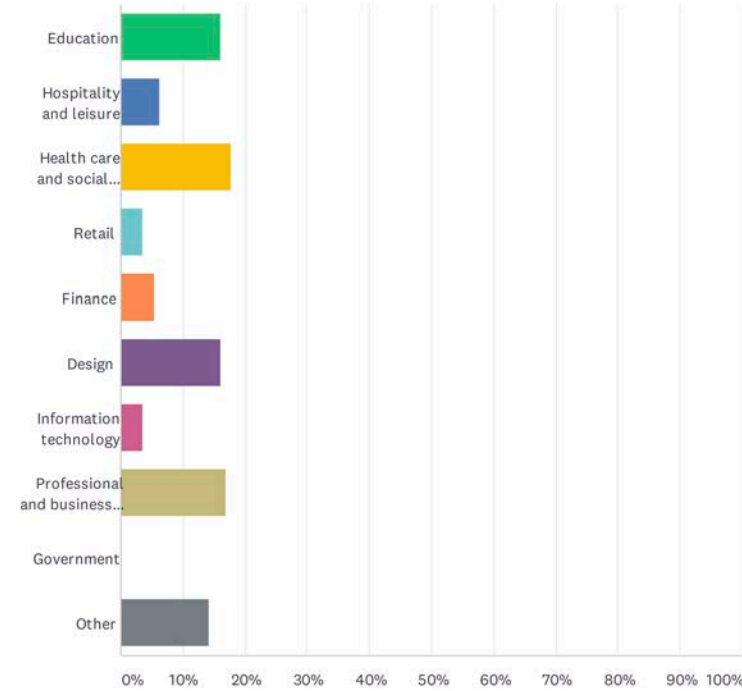
Answered: 112 Skipped: 0



ANSWER CHOICES	RESPONSES	
High School	0.00%	0
Associate Degree	2.68%	3
Bachelor's Degree	63.39%	71
Master's Degree	26.79%	30
Doctorate Degree	7.14%	8
TOTAL		112

Q5 Which of the following best describes your current or most recent field of work?

Answered: 112 Skipped: 0



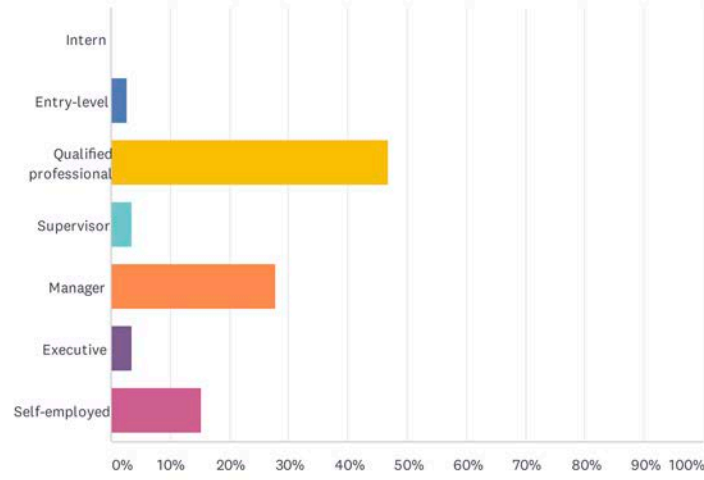
Q5 Which of the following best describes your current or most recent field of work?

ANSWER CHOICES	RESPONSES	
Education	16.07%	18
Hospitality and leisure	6.25%	7
Health care and social assistance	17.86%	20
Retail	3.57%	4
Finance	5.36%	6
Design	16.07%	18
Information technology	3.57%	4
Professional and business services	16.96%	19
Government	0.00%	0
Other	14.29%	16
TOTAL		112

APPENDIX A - SURVEY 1 RESULTS

Q6 Which of the following best describes your current position within your organization?

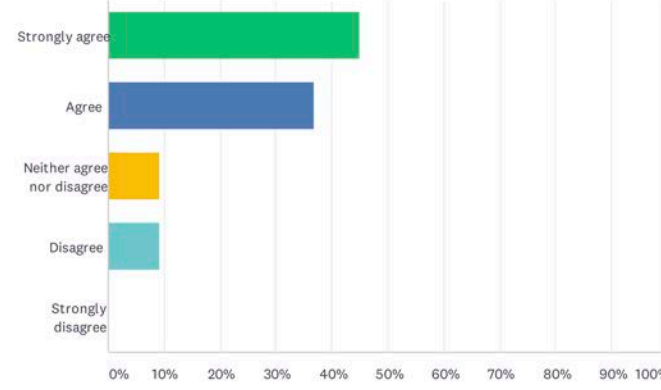
Answered: 111 Skipped: 1



ANSWER CHOICES	RESPONSES	
Intern	0.00%	0
Entry-level	2.70%	3
Qualified professional	46.85%	52
Supervisor	3.60%	4
Manager	27.93%	31
Executive	3.60%	4
Self-employed	15.32%	17
TOTAL		111

Q7 I'd feel comfortable pursuing a leadership role at my organization.

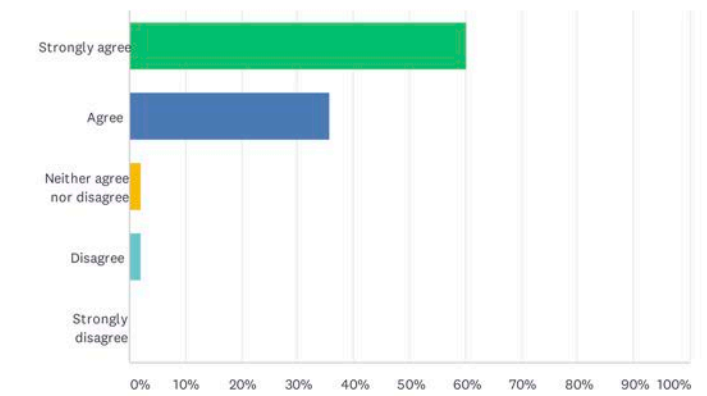
Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	44.90%	44
Agree	36.73%	36
Neither agree nor disagree	9.18%	9
Disagree	9.18%	9
Strongly disagree	0.00%	0
TOTAL		98

Q8 When I'm well-informed on a topic, I feel comfortable advocating my perspective in the workplace.

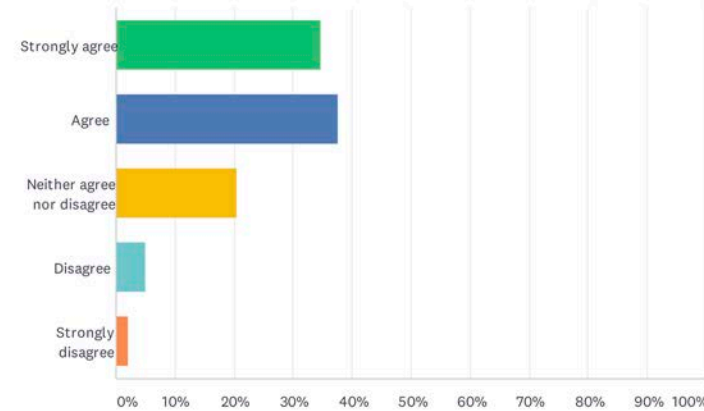
Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	60.20%	59
Agree	35.71%	35
Neither agree nor disagree	2.04%	2
Disagree	2.04%	2
Strongly disagree	0.00%	0
TOTAL		98

Q9 I'm likely to be promoted at my organization if I have extensive knowledge of a subject matter which could support the company.

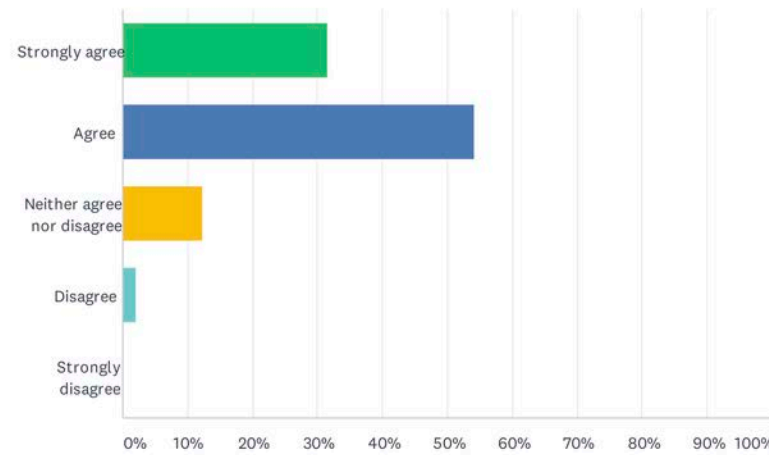
Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	34.69%	34
Agree	37.76%	37
Neither agree nor disagree	20.41%	20
Disagree	5.10%	5
Strongly disagree	2.04%	2
TOTAL		98

Q10 I feel a strong confidence in myself and my skills in the workplace.

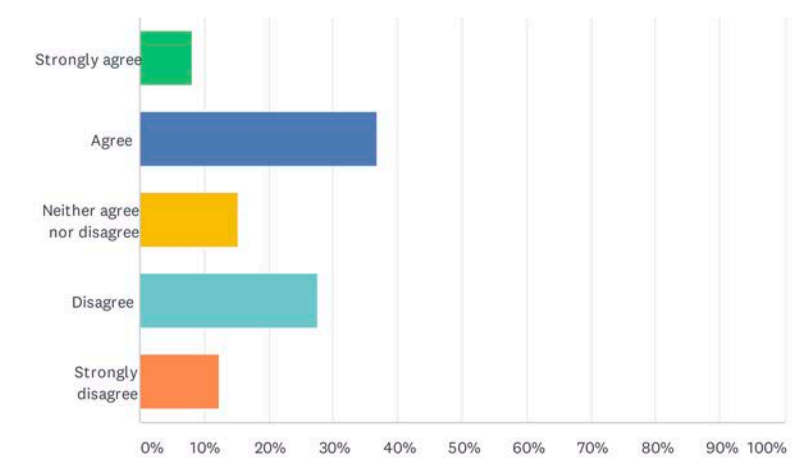
Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	31.63%	31
Agree	54.08%	53
Neither agree nor disagree	12.24%	12
Disagree	2.04%	2
Strongly disagree	0.00%	0
TOTAL		98

Q11 I have been discriminated against in the workplace based on my gender.

Answered: 98 Skipped: 14

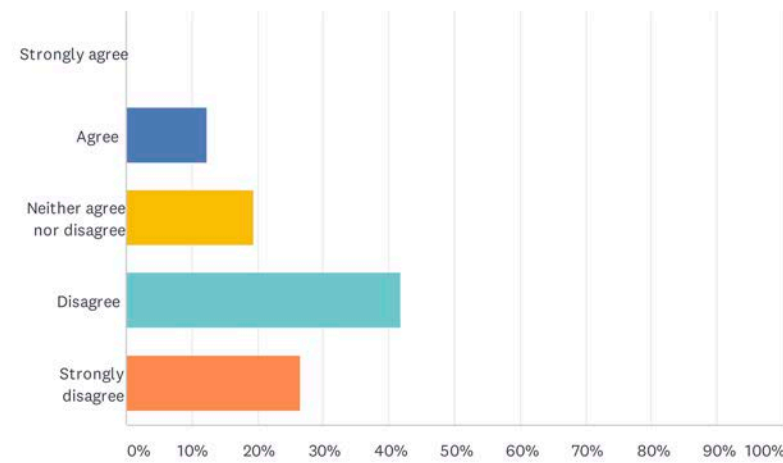


ANSWER CHOICES	RESPONSES	
Strongly agree	8.16%	8
Agree	36.73%	36
Neither agree nor disagree	15.31%	15
Disagree	27.55%	27
Strongly disagree	12.24%	12
TOTAL		98

APPENDIX A - SURVEY 1 RESULTS

Q12 Discrimination based on my gender prevents me from pursuing a higher position at my organization.

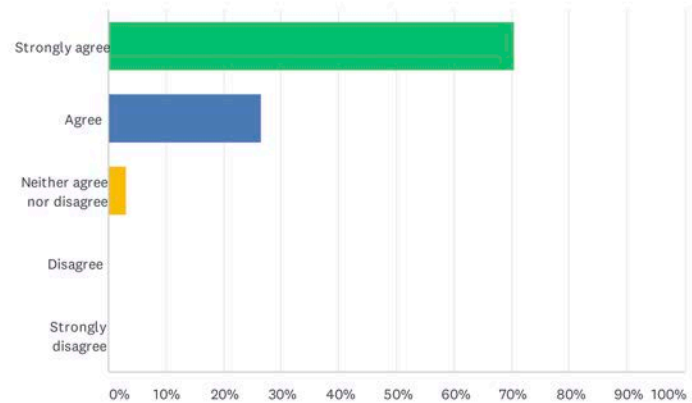
Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	0.00%	0
Agree	12.24%	12
Neither agree nor disagree	19.39%	19
Disagree	41.84%	41
Strongly disagree	26.53%	26
TOTAL		98

Q14 It's important for more companies to invest in sustainability.

Answered: 98 Skipped: 14



ANSWER CHOICES	RESPONSES	
Strongly agree	70.41%	69
Agree	26.53%	26
Neither agree nor disagree	3.06%	3
Disagree	0.00%	0
Strongly disagree	0.00%	0
TOTAL		98

Q13 In your own words, define sustainability in one sentence.

Answered: 83 Skipped: 29

Graduate Research Survey - Workplace Study

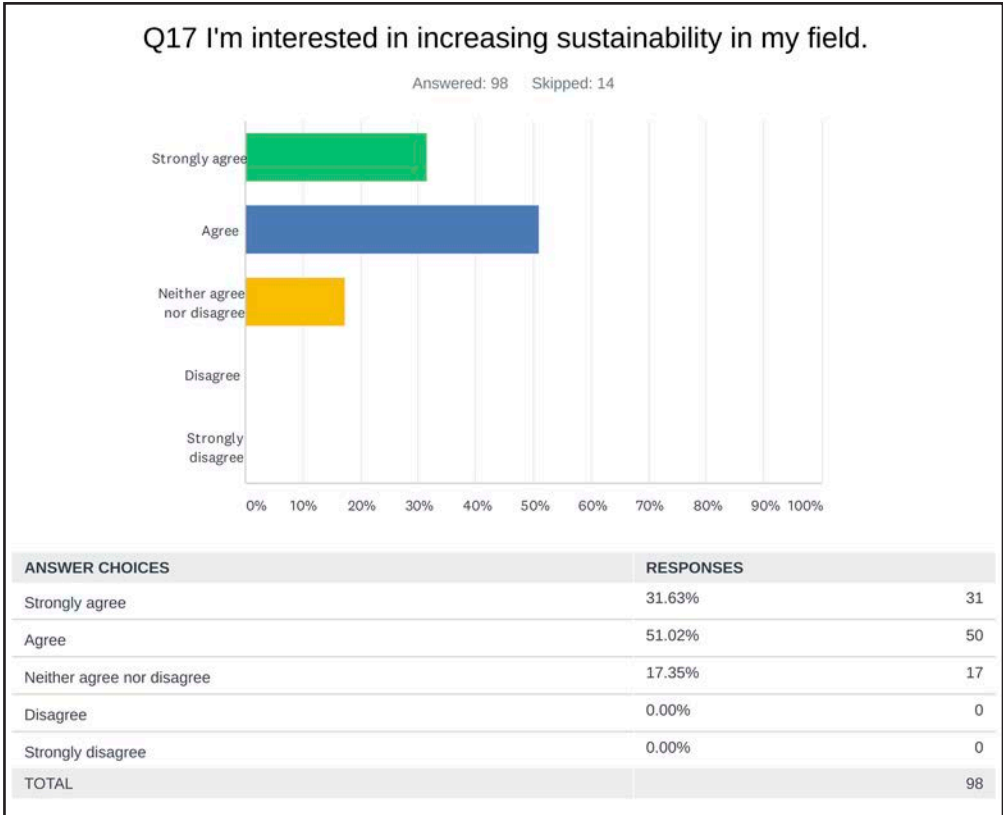
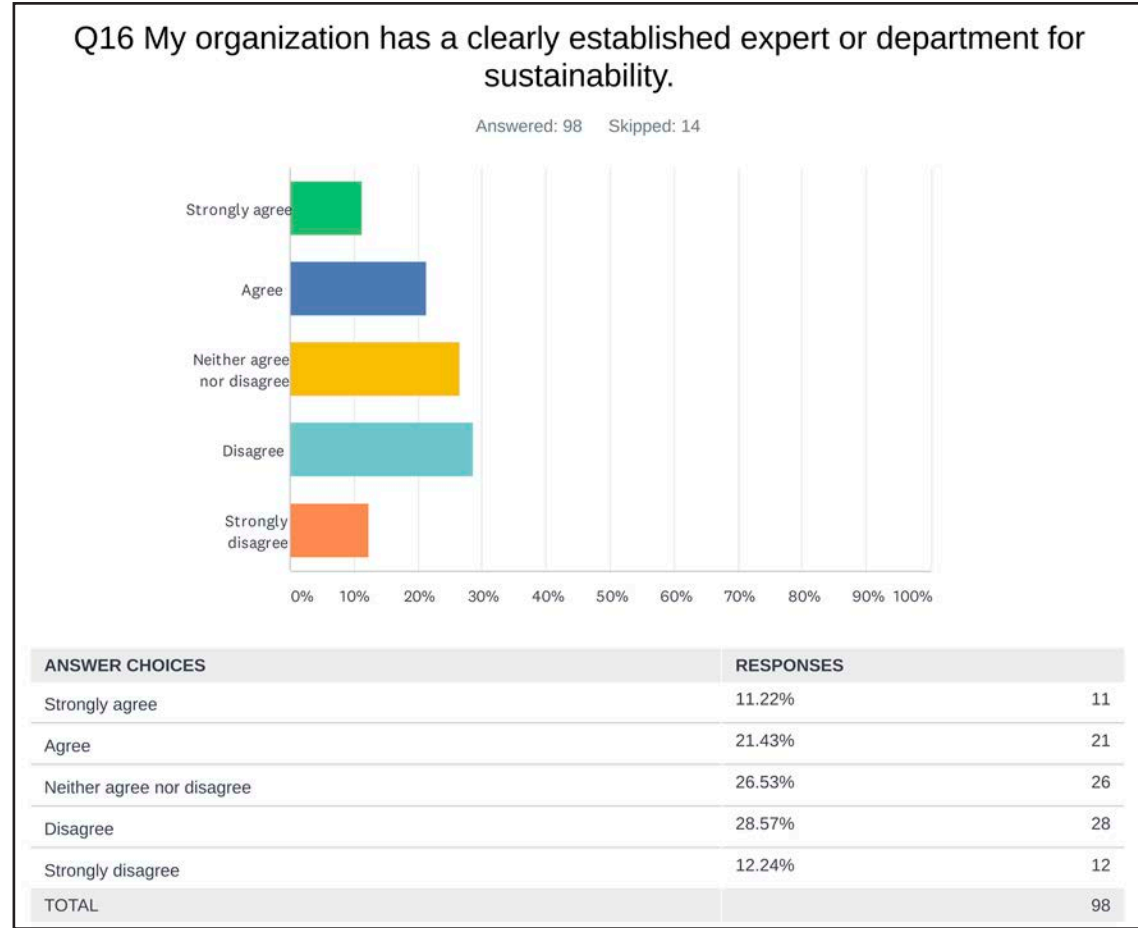
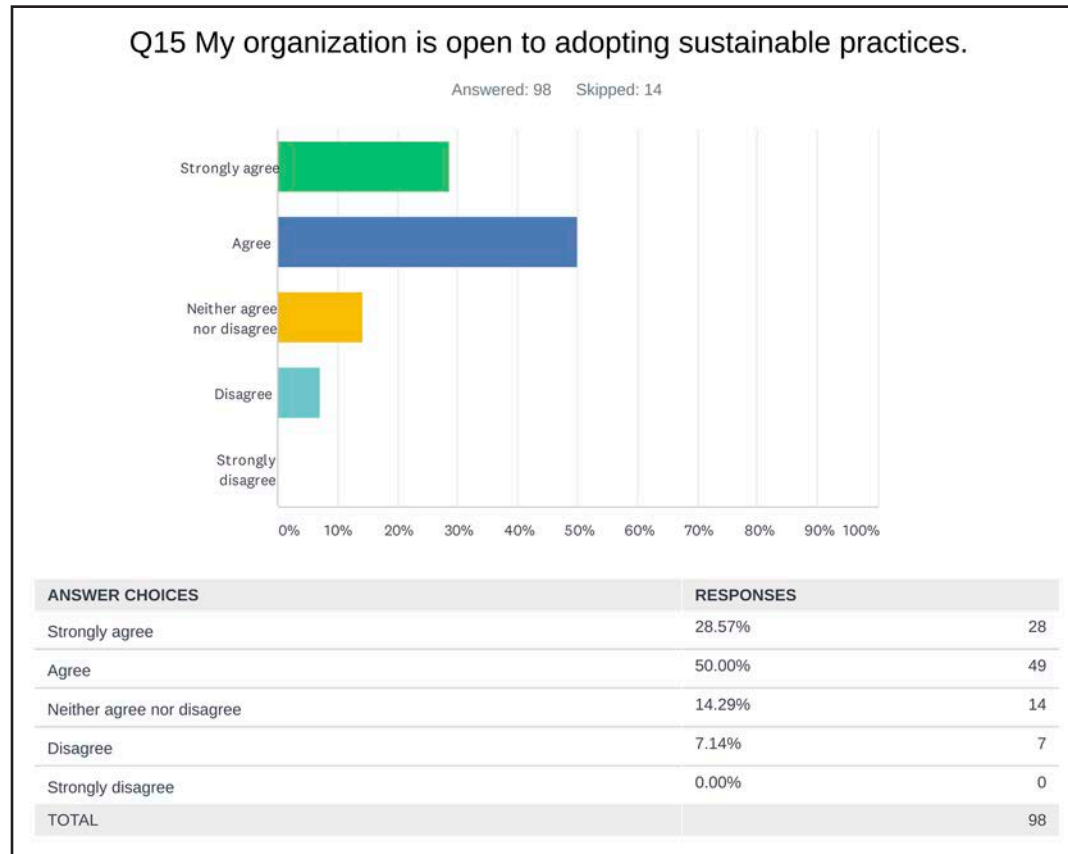
SurveyMonkey

#	RESPONSES	DATE
1	using today's resources in a way that allows an equal future for my child.	5/13/2020 7:33 PM
2	The world working in efficient, equal, compassionate and diverse systems.	5/3/2020 12:53 AM
3	The ability to maintain a certain level of resources for the next generation.	4/28/2020 4:44 PM
4	All human and non-human life forms receive respect and have agency to achieve what is best for them and their community on Earth.	4/23/2020 3:25 PM
5	Being able to continue with what you are doing	4/20/2020 1:20 PM
6	Taking actions and making decisions that better our environment and the well being of others.	4/17/2020 7:57 PM
7	Continuable without detriment to self or environment	4/17/2020 3:19 PM
8	Whether in funding or based on environmental factors, sustainability is about the long-term operation.	4/17/2020 1:53 PM
9	To act in a way that supports the security of future resources	4/17/2020 5:43 AM
10	The ability to maintain or improve current performance or abilities	4/16/2020 11:58 PM
11	Sustainability is developing systems that work for the long term without causing harm to the environment.	4/16/2020 9:42 PM
12	Human race stops being a virus to our planet.	4/16/2020 7:36 PM
13	reducing the use of non-renewable resources, especially raw materials.	4/16/2020 7:06 PM
14	The ability to last and support long term	4/16/2020 6:53 PM
15	Reduce, Recycle, Reuse.	4/16/2020 6:32 PM
16	The practice of leaving this earth the same, if not better, than how we found it.	4/16/2020 4:19 PM
17	Sustainability is to be able to continue your work without significant dependence on someone or something.	4/16/2020 2:30 AM
18	Serving resource needs of today while preserving resources for tomorrow.	4/16/2020 1:55 AM
19	Systems that improve health and harm the environment minimally.	4/16/2020 1:17 AM
20	A system of thought, production, and/or living that does not harm or destroy itself - but instead perpetuates its own success and honors the environment and world that we live in.	4/16/2020 1:10 AM
21	Ability to maintain for an extended period of time	4/15/2020 9:43 PM
22	The ability to reproduce an action without degradation of resources.	4/15/2020 9:27 PM
23	Something that can be renewed easily and leaves little footprint.	4/15/2020 9:27 PM
24	Finding new ways to lessen the burden of our impact on the future	4/15/2020 9:19 PM
25	Practices that allow our world to continue to prosper with less impact on our environment.	4/15/2020 8:38 PM
26	Something that's vitality is supported and continued by its own existence.	4/15/2020 8:19 PM
27	The ability to maintain a certain level of operations.	4/15/2020 8:16 PM
28	Working to preserve natural resources	4/15/2020 7:06 PM
29	Keeping current conditions without compromising the future	4/15/2020 6:55 PM
30	Something that is long term and long lasting.	4/15/2020 6:25 PM
31	Bi-directional communication with roles and responsibilities defined while embedded in trust and supportive relationships	4/15/2020 6:23 PM
32	Keeping the circle of life going	4/15/2020 6:17 PM
33	Something that can be maintained forever	4/15/2020 6:03 PM
34	To have the ability to continue to work toward a goal or collection of goals in a manner that is	4/15/2020 5:48 PM

35	manageable and healthy for employers, employees, and the environment.	4/15/2020 5:39 PM
36	The ability to maintain and/or achieve a certain level of homeostasis depending on the medium you are working with.	4/15/2020 5:30 PM
37	To maintain resources, the economy or a process at an acceptable rate or level.	4/15/2020 5:29 PM
38	Making thoughtful choices for the betterment of the world and our society	4/15/2020 5:19 PM
39	Sustainability means to be able to continue to do something for a long period of time and not deplete resources (either human resources or physical resources)	4/15/2020 5:12 PM
40	Thriving in a situation while having the ability to adjust and grow as needed in order to continue to thrive and survive.	4/15/2020 5:05 PM
41	Being able to maintain at a current rate	4/15/2020 5:00 PM
42	Sourcing and reusing responsible materials to help preserve our earth	4/15/2020 4:58 PM
43	Maintaining something	4/15/2020 4:58 PM
44	Having a like-minded team who work together to achieve the same goal by each playing to his or her strengths and continuously challenging each other and the goal by increasing its limits and integrating new methods and ideas that make achieving it easier and more effective	4/14/2020 6:55 AM
45	The ability to function continuously	4/14/2020 4:23 AM
46	Having the ability to maintain employment and/or status, and in a fashion that allows you to either stay at your current level or allow for the opportunity for growth in an upward trajectory in the long term.	4/14/2020 4:00 AM
47	Being able to maintain a certain level	4/14/2020 2:54 AM
48	Sustainability is being thoughtful and aware of how you use consumable goods, and of how that use affects the planet.	4/14/2020 1:50 AM
49	Being conscious of how you're decisions affect the greater world	4/14/2020 1:22 AM
50	A process that seeks to maximize the ability to thrive	4/14/2020 1:10 AM
51	Sustainability is the ability to stay at a certain rate for a long period of time.	4/14/2020 12:43 AM
52	Leaving something Or place better or the same as you found it.	4/14/2020 12:24 AM
53	The ability to maintain.	4/14/2020 12:06 AM
54	The ability to use resources at the same rate they are created	4/14/2020 12:01 AM
55	Finding ways to use less.	4/13/2020 11:58 PM
56	Sustainability is the ability to grow and improve, leaving a smaller economic and environmental footprint than previously required to do the same task.	4/13/2020 11:57 PM
57	To be able balance a system to avoid depleting natural resources	4/13/2020 11:49 PM
58	Keeping things alive	4/13/2020 11:34 PM
59	Maintaining and improving processes	4/13/2020 11:33 PM
60	Ability to maintain something longer by limiting use of nonrenewable resources	4/13/2020 10:45 PM
61	Work in a way for the longevity of the planet and future generations.	4/13/2020 10:40 PM
62	Something that is able to be maintained over a significant period of time regardless of changing circumstances	4/13/2020 10:39 PM
63	The ability to be relevant and prove longevity in an environment	4/13/2020 10:37 PM
64	Making short term choices to affect a long term effect.	4/13/2020 10:35 PM
65	Maintaining a balance	4/13/2020 10:35 PM
66	Sustainability is the capacity to run at a certain level without exhausting resources.	4/13/2020 10:32 PM

67	The ability to retain a position or title without daily fret or worry.	4/13/2020 10:24 PM
68	The ability to maintain an effort in the future.	4/13/2020 10:23 PM
69	To be consistent in growth.	4/13/2020 10:20 PM
70	Maintaining something in a feasible way whether it be the economy, the environment, etc.	4/13/2020 10:12 PM
71	Responsibly utilizing resources without compromising their future need.	4/13/2020 10:07 PM
72	The ability to maintain at a certain level	4/13/2020 10:02 PM
73	Capable of continuing to provide a service	4/13/2020 10:00 PM
74	A balance of consumption and replenishment which does not result in a deficit or abundance.	4/13/2020 9:58 PM
75	I'm sorry, I'm not sure how to answer this. Not sure what kind of sustainability you mean.	4/13/2020 9:54 PM
76	Remains fully functioning at the same level over time	4/13/2020 9:52 PM
77	The ability to maintain, with out going over or under the status quo	4/13/2020 9:51 PM
78	Making the most of the resources you have while minimizing waste.	4/13/2020 9:48 PM
79	Sustainability is a characteristic in which the needs for the end goal are supplied by previous steps, creating a recurring cycle.	4/13/2020 9:48 PM
80	Sustainability is something's ability to maintain or improve itself over a period of time without an overuse of energy, funds, health, etc	4/13/2020 9:35 PM
81	A method to keeping a resource around for as long as possible with the interest of others and the world	4/13/2020 9:16 PM
82	A system or business that generates an equal amount of resources that it puts into itself. It considers the overall impact of itself economically, in the community and the environment.	4/13/2020 9:12 PM
83	Creating solutions that using the three principles of sustainability: people, planet, and profit while centering the most marginalized.	4/13/2020 8:55 PM
84	A community that promotes justice and inclusion while providing space for all voices to be heard that also promotes cyclical systems (cradle to cradle) for all processes, with special care made for the health of the physical environment.	4/13/2020 8:40 PM

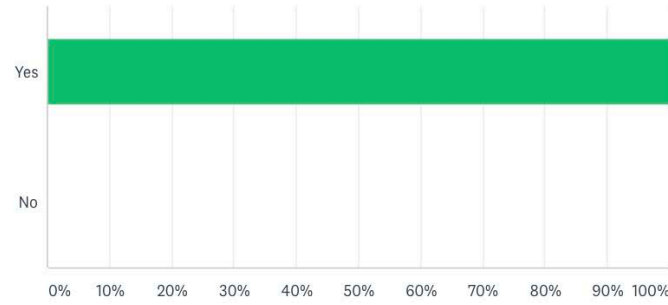
APPENDIX A - SURVEY 1 RESULTS



APPENDIX B - SURVEY 2 RESULTS

Q1 Do you own a small business totaling 19 employees or less, or are self-employed?

Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES
Yes	100.00% 22
No	0.00% 0
TOTAL	22

Q2 What is your business's industry?

Answered: 21 Skipped: 1

- Event Photography
- Mental health counseling
- Coaching and Training
- Cleaning services
- Psychotherapy/counseling
- Marketing
- Wedding and events
- Web design & marketing consulting
- Baked goods
- Photography
- PR/communications
- At Home Bakery / Wedding Industry
- Children's educational books and activities
- Mental health
- Photography
- Architecture
- Photography – primarily weddings and families
- Photography
- Locksmith
- Mental Health
- Fitness, Nutrition, Wellness

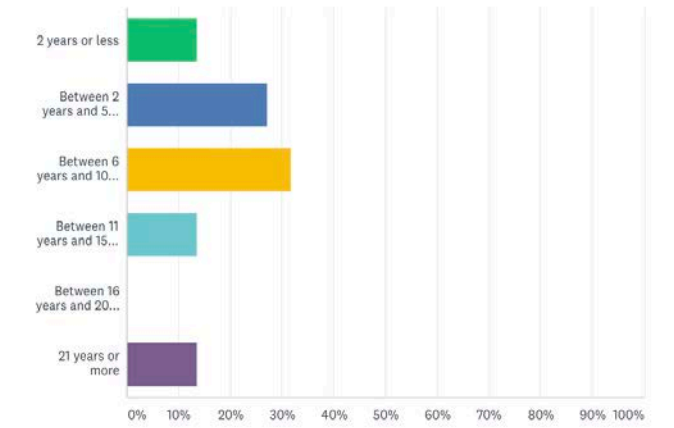
Q3 Where is your company located?

Answered: 22 Skipped: 0

- Pacific City, OR
- Portland, ME
- Tacoma, WA
- Clovis, NM
- Fircrest, WA
- Sacramento, CA
- Lafayette, LA
- Bangor, MA
- Jeanerette, LA
- Wakenfield, MA
- Lafayette, LA
- Fayetteville, NC
- Portland, OR
- Colorado Springs, CO
- Charleston, SC
- Brooklyn, NY
- Bethesda, MD
- Shreveport, LA
- Cincinnati, OH
- Melrose, MA
- Clovis, NM

Q4 How many years have you been in business?

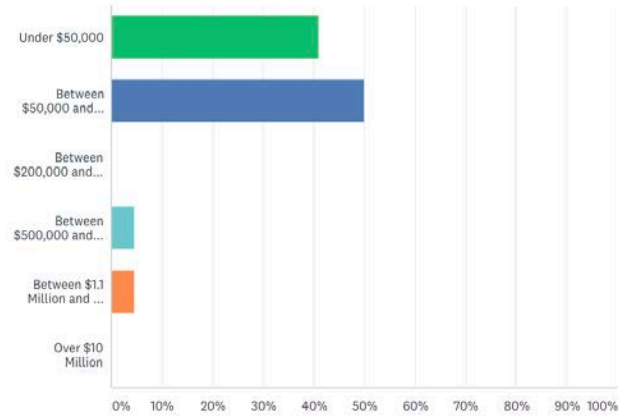
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES
2 years or less	13.64% 3
Between 2 years and 5 years	27.27% 6
Between 6 years and 10 years	31.82% 7
Between 11 years and 15 years	13.64% 3
Between 16 years and 20 years	0.00% 0
21 years or more	13.64% 3
TOTAL	22

Q5 What was your average yearly revenue before the COVID-19 pandemic?

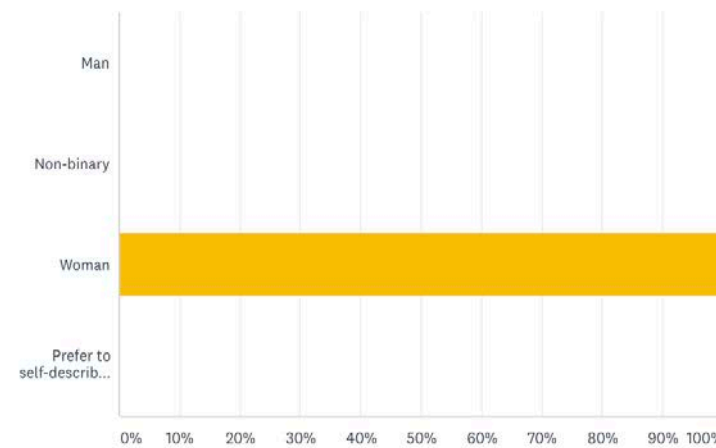
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES
Under \$50,000	40.91% 9
Between \$50,000 and \$199,999	50.00% 11
Between \$200,000 and \$499,999	0.00% 0
Between \$500,000 and \$1 Million	4.55% 1
Between \$1.1 Million and \$10 Million	4.55% 1
Over \$10 Million	0.00% 0
TOTAL	22

Q6 Gender: How do you identify?

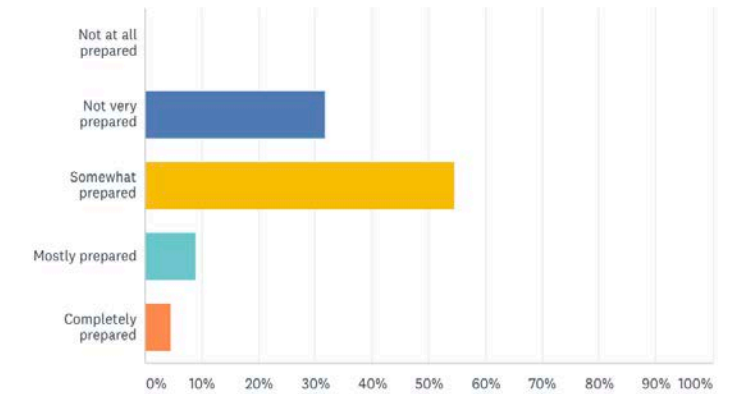
Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES
Man	0.00% 0
Non-binary	0.00% 0
Woman	100.00% 22
Prefer to self-describe, below	0.00% 0
TOTAL	22

Q7 Was your business well prepared to weather the economic uncertainty brought about by the COVID-19 pandemic?

Answered: 22 Skipped: 0



ANSWER CHOICES	RESPONSES
Not at all prepared	0.00% 0
Not very prepared	31.82% 7
Somewhat prepared	54.55% 12
Mostly prepared	9.09% 2
Completely prepared	4.55% 1
TOTAL	22

APPENDIX B - SURVEY 2 RESULTS

Q8

What has been the most significant challenge facing your business as a result of the COVID-19 pandemic?

Answered: 21 Skipped: 1

The unknown steps and ways to get up and running again. There is no clear path or timeline to gather and be able to photograph groups of people indoors again. The unknown variable makes it confusing to know if I need to stay the course in what I've been doing for 15 years or to start a while new line of work.

Not being face-to-face with my clients.

I had an in-person certification training scheduled that ended with a weekend retreat (with fire-walk). Due to Covid, it had to be moved virtually. Because of sudden income loss, several of the students had to drop out before we got started.

The first month of navigate legislation and new guidelines to make sure I was operating legally.

Internet connectivity.

Loss of clients and revenue.

Delayed revenue as events have been postponed outside of the same fiscal year.

My clients are uncertain about their financial stability, so they are risk averse more careful with spending. Also, my sanity has taken a huge hit.

The unknown amount of business from week to week with cancellations.

The shutting down of large events (weddings).

Restaurant closures and changes.

Accommodating the postponement of large events (weddings, showers, parties, etc.) while seeing significantly lower (and sometimes zero) sales per month.

No in person book fairs/sales.

Q9

How would you define sustainability in one sentence or less?

Answered: 20 Skipped: 2

Having a variety of options (solutions) laid out and money saved for at least 1 year of expenses.

It encompasses the means for long-term, long-lasting energy and action.

Creating something that is self-sustaining and can align with the unpredictable nature of life.

The ability to thrive over time.

An action that can be sustained/continue for a continued amount of time given the circumstances.

Adaptability.

Consistent, manageable workflow.

Being able to continue selling my products no matter how big or small it might be for some prof-it.

Having minimal or zero negative effects on the environment, and ideally having positive effects on the environment.

Being able to maintain a certain status, productivity, or revenue long term.

Adapting to changes, finding new ways (and products) to sell...via virtual platform, to over-come... in the most environmentally and economical way.

Meeting present day needs while considering the future, and the impact decisions made now will have in the future.

The ability to weather different economic climates.

Being able to creatively utilize your immediate resources to meet your goals before extending your-self outside your environment*. *For photography – I think that looks like choosing sets + props that don't create waste. Commercial photography gets very wasteful very quickly, so we consider using thrifted props, asking friends for locations, and creating images for companies that are trying to promote sustainability.

Sustainability is making choices that support a healthy environment.

Something that can continue on even if the person who was running at one time it isn't at the helm.

Using resources in a way now so as to not affect the future adversely.

Working hard to keep customers and employees with honesty and respect.

The ability to adapt to the changing demands of the environment.

The goals of avoiding environmental depletion and maintaining or increasing availability of natu-

There has been more interest in my services by people who may not normally reach out.

Communication with clients has been different! Not as many in-person meetings, which I've learned, hasn't been a negative in terms of whether people book, or not. The biggest change seems to be just the speed at which people communicate. I get the sense that day-to-day is just more screen / work heavy, and being home with the news is more intense, so it feels like people are slower to respond to emails that seem secondary.

A decline in new business. People are not able to commit to a major home project/ renovation amid so much uncertainty.

This is twofold for me - 1 space regulations etc. for events and photographing families. Is it safe to be inside with masks? Do my clients feel safe? Are they allowed to hold their events? Do I feel safe going to those events? Hope this answer make sense. The second for me is childcare. I used to have a sitter two days a week and my son was in preschool two mornings a week and sitters on the weekends for when I shoot weddings - those very quickly stopped and my husband's job is really unpredictable. So the lack of childcare has made me have to REALLY scale back.

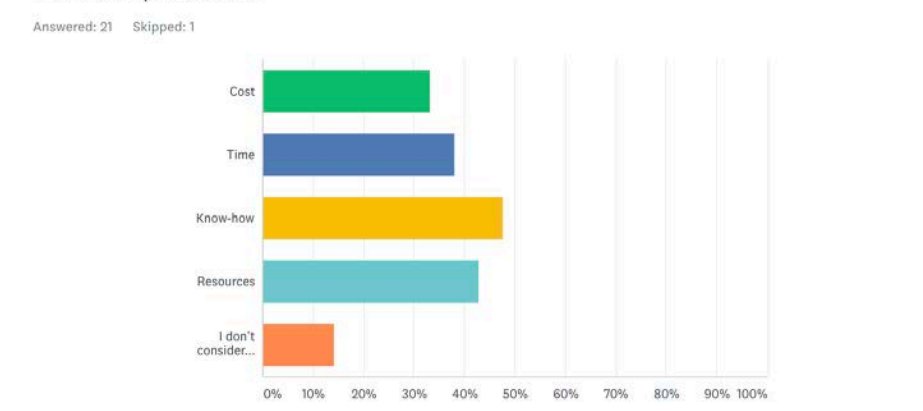
Making up for lost work.

Keeping employees safe.

Not being able to use my office and having to rely on telehealth session format.

Gyms being closed (loss of in person clients and distance clients) and loss of clients due to their loss of income.

Q10 What are the top 2 reasons that prevent you from adopting more sustainable business practices?



ANSWER CHOICES	RESPONSES
Cost	33.33% 7
Time	38.10% 8
Know-how	47.62% 10
Resources	42.86% 9
I don't consider sustainability necessary for my business	14.29% 3
Total Respondents: 21	

LIFE'S PRINCIPLES

Biomimicry DesignLens

Life's Principles are design lessons from nature. Based on the recognition that Life on Earth is interconnected and interdependent, and subject to the same set of operating conditions, Life has evolved a set of strategies that have sustained over 3.8 billion years. Life's Principles represent these overarching patterns found amongst the species surviving and thriving on Earth. Life integrates and optimizes these strategies to create conditions conducive to life. By learning from these deep design lessons, we can model innovative strategies, measure our designs against these sustainable benchmarks, and allow ourselves to be mentored by nature's genius using Life's Principles as our aspirational ideals.



FIG 15



FIG 16