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Natalie Lord

University of New Hampshire, Durham, natalie.lord@unh.edu

Catherine M. Ashcraft

University of New Hampshire, Durham, catherine.ashcraft@unh.edu

Lindsey Williams

University of New Hampshire, Durham, Lindsey.Williams@unh.edu

Julia Novak-Colwell

University of New Hampshire, Durham, julia.colwell@unh.edu

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A Rising Tide: Oyster Aquaculture Survey Results

Natalie Lord

University of New Hampshire, Durham, NH, USA natalie.lord@unh.edu

Catherine Ashcraft

University of New Hampshire, Durham, NH, USA catherine.ashcraft@unh.edu

Lindsey Williams

University of New Hampshire, Durham, NH, USA lindsey.williams@unh.edu

Julia Novak-Colwell

University of New Hampshire, Durham, NH, USA, julia.colwell@unh.edu

Abstract

This document provides the results from a survey conducted August-October 2021 on the Maine and New Hampshire oyster aquaculture industry. The purpose of the survey was to gain a food system-wide perspective on gender dynamics in the region's aquaculture industry, inclusive of different genders and identify potential gender-based barriers and opportunities to participation for men, women, and non-binary/third gender oyster aquaculturists. The published survey results include qualitative responses and demographic data for a subset of farmers in the oyster aquaculture industry of Maine and New Hampshire.

Default Report

A Rising Tide: Oyster Aquaculture Survey

April 30th 2023, 6:57 pm EDT

QID1 - Survey Consent

RESEARCHER AND TITLE OF STUDY

Principal Investigator: Natalie Lord, Graduate student in the Department of Natural Resources and the Environment at the University of New Hampshire

Title of study: A Rising Tide? The role of social networks for oyster aquaculture in Maine and New Hampshire

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of this research project is to highlight the experiences of people working in oyster aquaculture in Maine and New Hampshire to inform regulatory agencies and the local aquaculture community of their contributions to the industry and strategies they use to maintain successful businesses on the water. This survey will include a food system-wide perspective on gender dynamics in the region's aquaculture industry. About 40 participants will contribute to this survey. All participants must be at least 18 years old to participate.

WHAT DOES YOUR PARTICIPATION IN THIS STUDY INVOLVE? You will complete the survey online via smartphone or computer using Qualtrics survey software. The survey should take no more than 15 minutes of your time.

WHAT ARE THE POSSIBLE RISKS OF PARTICIPATING IN THIS STUDY? Participation in the survey is expected to pose minimal risk to you.

WHAT ARE THE POSSIBLE BENEFITS OF PARTICIPATING IN THIS STUDY? Participants may benefit from this survey through recommendations for future trainings and offerings by state and federal aquaculture organizations and community partners in the aquaculture sector. Therefore, this data can contribute to the workforce development of the coastal communities of Maine and New Hampshire.

IF YOU CHOOSE TO PARTICIPATE IN THIS STUDY, WILL IT COST YOU ANYTHING? There are no costs associated with participating in this study.

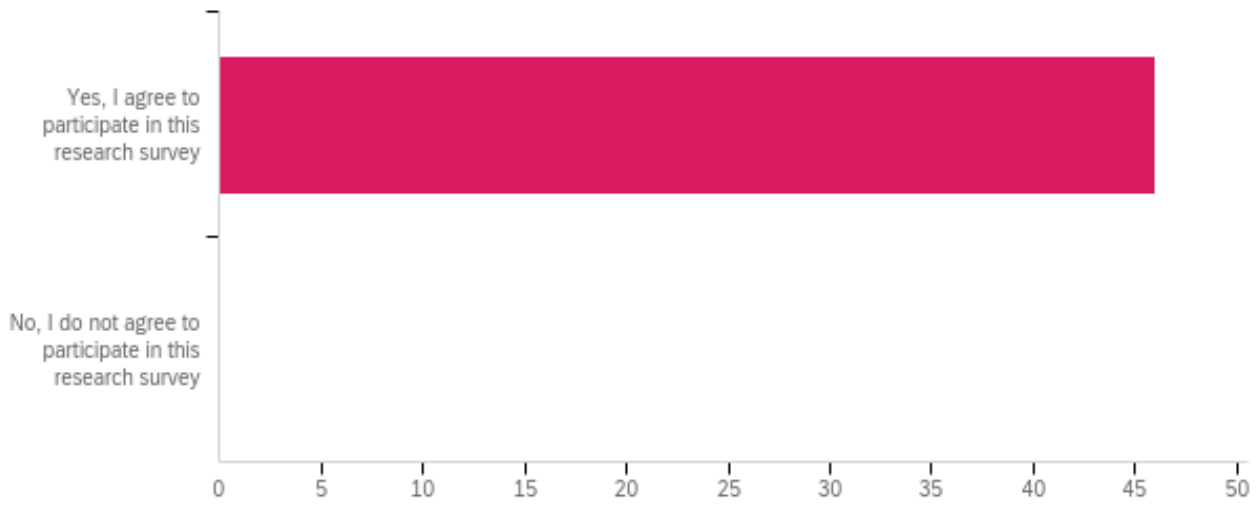
WILL YOU RECEIVE ANY COMPENSATION FOR PARTICIPATING IN THIS STUDY? No.

DO YOU HAVE TO TAKE PART IN THIS STUDY? Taking part in this study is completely voluntary. You may choose not to take part at all. If you agree to participate, you may refuse to answer any question.

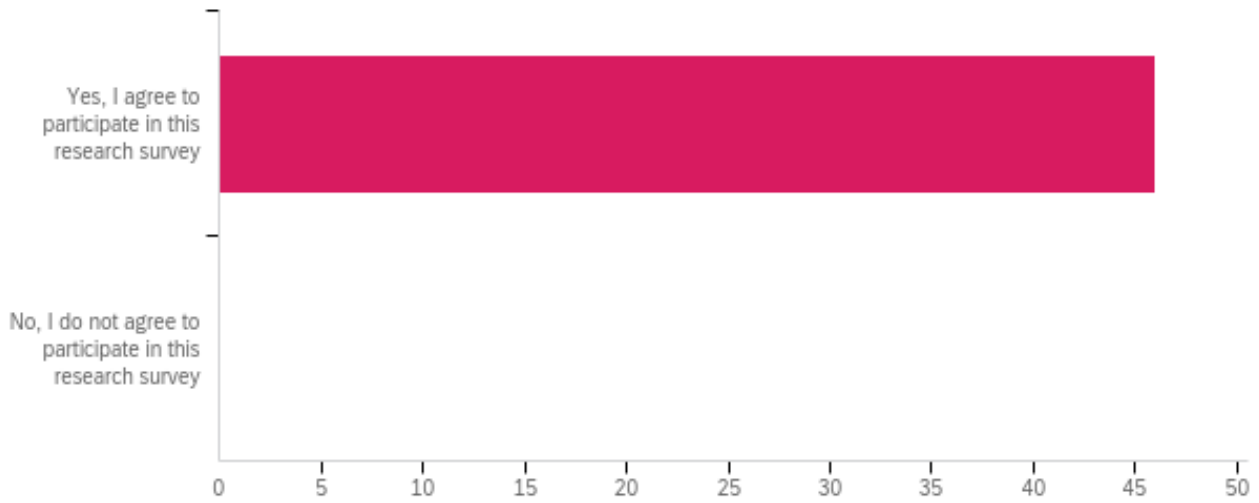
CAN YOU WITHDRAW FROM THIS STUDY? If you agree to participate in this study and you then change your mind, you may stop participating at any time. Any data collected as part of your participation may remain part of the study records. If you decide to stop participating at any time, you will not be penalized or lose any benefits for which you would otherwise qualify.

HOW WILL THE CONFIDENTIALITY OF YOUR RECORDS BE PROTECTED? I plan to maintain the confidentiality of all data and records associated with your participation in this research. There are, however, rare instances when I may be required to share identifiable information with the following: officials at the University of New Hampshire, regulatory and oversight government agencies such as NOAA, Maine Department of Marine Resources and New Hampshire Fish and Game, or the sponsor of the research project, New Hampshire Sea Grant. Further, any communication via the internet (email) poses minimal risk of a breach of confidentiality. To maintain confidentiality with your information, all data will be stored on a password protected computer within the password protected UNH Box cloud storage. The results of the study will be de-identified and aggregated so that no individuals can be identified in published documents, presentations, or web-based summaries. People with access to data include Natalie Lord, research committee members, including Dr. Catherine Ashcraft, Dr. Lindsey Williams, and Dr. Julia Novak-Colwell and members of the Environmental Policy, Planning, and Sustainability Lab at UNH. I will report the research results my final MS thesis, research reports, including for the project sponsor, New Hampshire Sea Grant, academic publications, and academic presentations

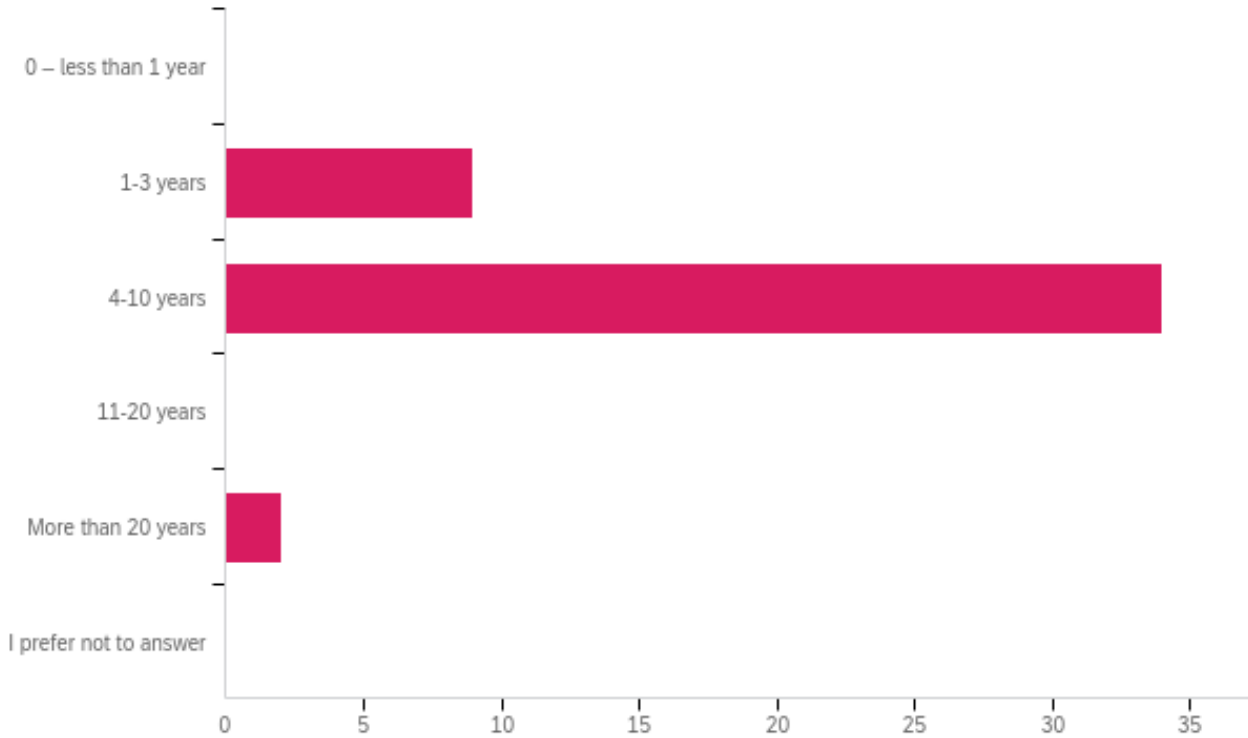
WHOM TO CONTACT IF YOU HAVE QUESTIONS ABOUT THIS STUDY If you have any questions pertaining to the research you can contact Natalie Lord, Graduate Student, 603-553-8200, nl1109@wildcats.unh.edu and/or Catherine Ashcraft, Assistant Professor, 603-862-3925, Catherine.ashcraft@unh.edu If you have questions about your rights as a research subject you can contact Melissa McGee in UNH Research Integrity Services, 603-862-2005 or melissa.mcgee@unh.edu to discuss them.



#	Answer	%	Count
1	Yes, I agree to participate in this research survey	100.00%	46
2	No, I do not agree to participate in this research survey	0.00%	0
	Total	100%	46



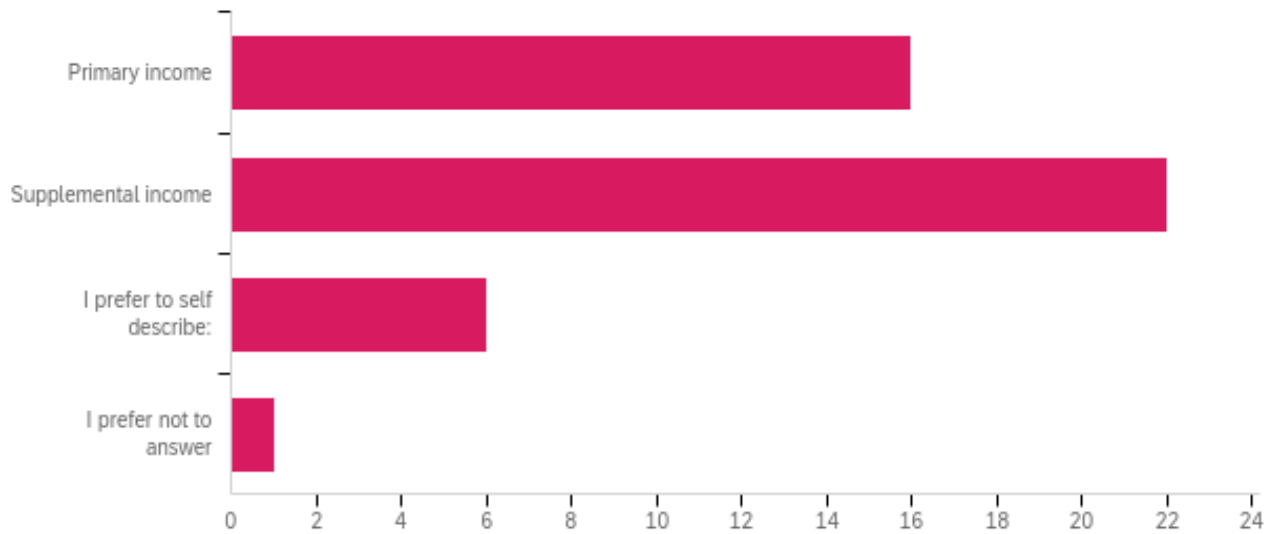
Q2 - How long have you worked in the oyster aquaculture industry?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How long have you worked in the oyster aquaculture industry?	2.00	5.00	2.89	0.60	0.37	45

#	Answer	%	Count
1	0 - less than 1 year	0.00%	0
2	1-3 years	20.00%	9
3	4-10 years	75.56%	34
4	11-20 years	0.00%	0
5	More than 20 years	4.44%	2
6	I prefer not to answer	0.00%	0
	Total	100%	45

Q3 - Is the oyster aquaculture business your primary or supplemental source of income?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Is the oyster aquaculture business your primary or supplemental source of income? - Selected Choice	1.00	4.00	1.82	0.74	0.55	45

#	Answer	%	Count
1	Primary income	35.56%	16
2	Supplemental income	48.89%	22
3	I prefer to self describe:	13.33%	6
4	I prefer not to answer	2.22%	1
	Total	100%	45

Q3_3_TEXT - I prefer to self describe:

I prefer to self describe: - Text

This year it may be, I pay myself inconsistently and have other sources of income.

Small side passion

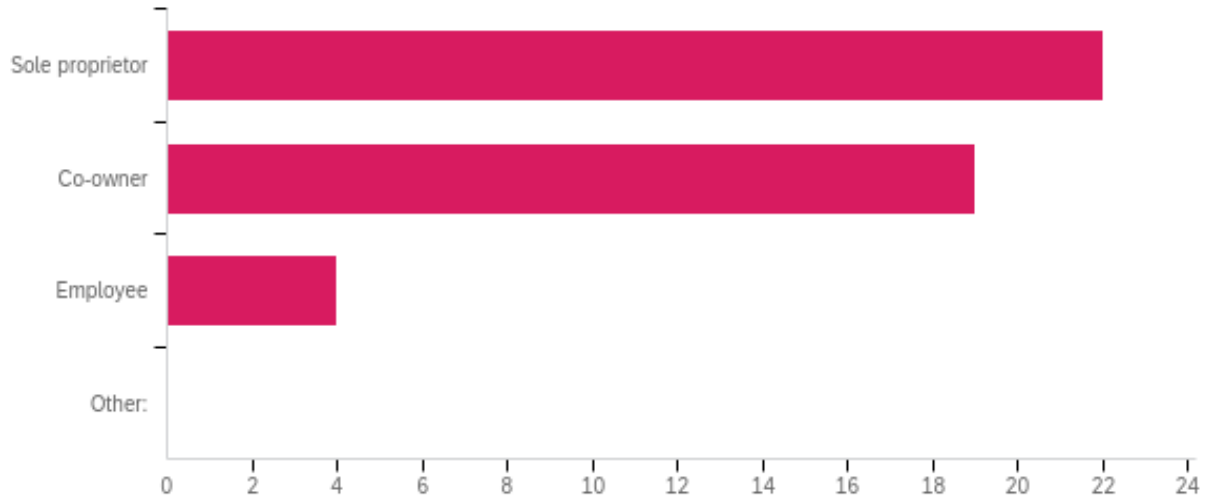
My husband and I own the company together. It is my primary source of income but it still relies on my husbands income for financing.

Not yet profitable to owners... does support three PT Employees Seasonally

Primary and supplement depending on the year and season

I am an owner and do not take any profits or salary. The farm employs my two sons.

Q4 - What is your role in the oyster aquaculture business you are a part of?

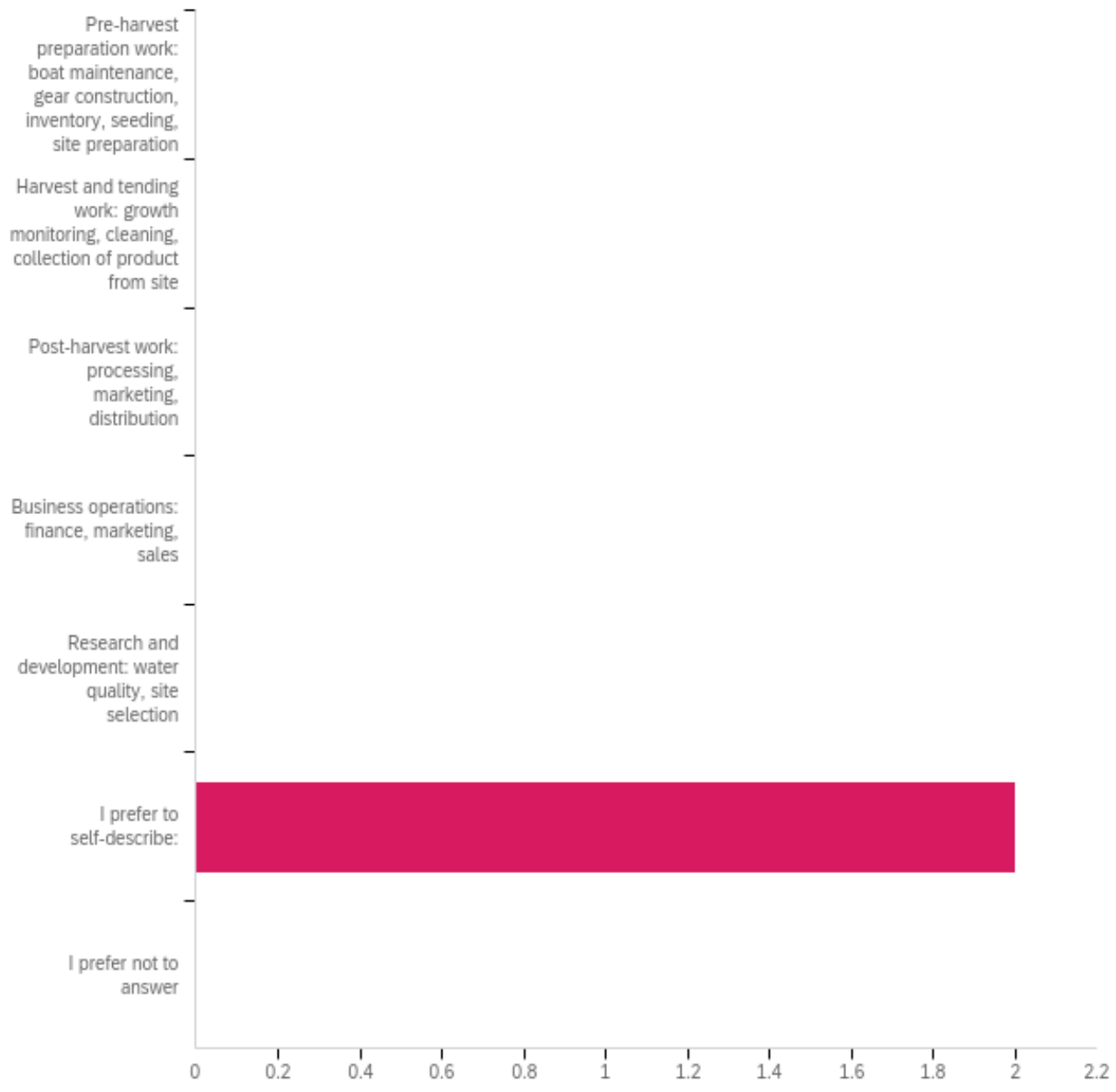


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What is your role in the oyster aquaculture business you are a part of? - Selected Choice	1.00	3.00	1.60	0.65	0.42	45

#	Answer	%	Count
1	Sole proprietor	48.89%	22
2	Co-owner	42.22%	19
3	Employee	8.89%	4
4	Other:	0.00%	0
	Total	100%	45

Q4_4_TEXT - Other:
Other: - Text

Q5 - What sector(s) of the oyster aquaculture industry are you engaged in? (select all that apply)



#	Answer	%	Count
1	Pre-harvest preparation work: boat maintenance, gear construction, inventory, seeding, site preparation	0.00%	0
2	Harvest and tending work: growth monitoring, cleaning, collection of product from site	0.00%	0
3	Post-harvest work: processing, marketing, distribution	0.00%	0
4	Business operations: finance, marketing, sales	0.00%	0

5	Research and development: water quality, site selection	0.00%	0
6	I prefer to self-describe:	100.00%	2
7	I prefer not to answer	0.00%	0
	Total	100%	2

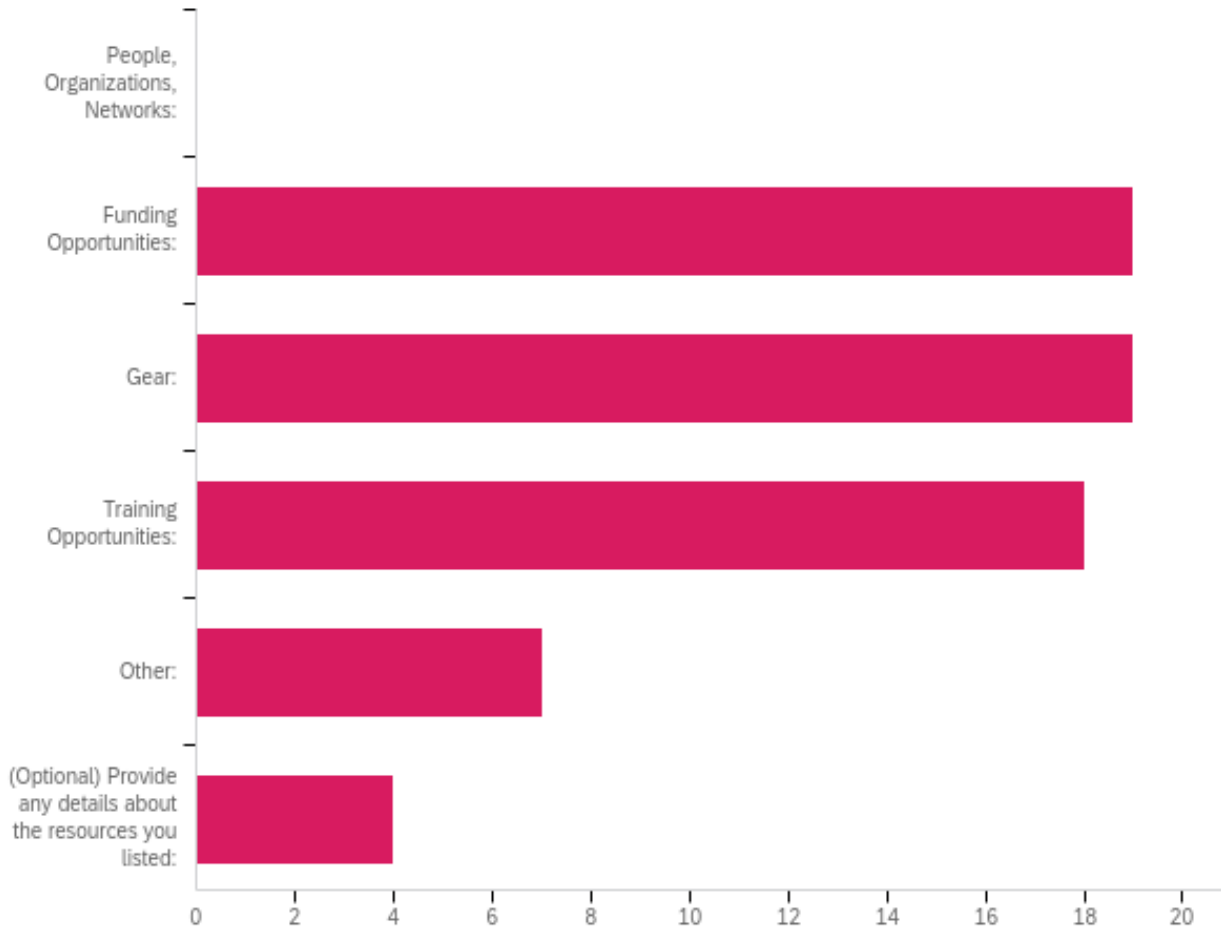
Q5_6_TEXT - I prefer to self-describe:

I prefer to self-describe: - Text

Hatchery production

I deal with regulators and the state regulation on new site selections

Q6 - When considering the resources that helped your business get started or thrive, list 5 important resources:



#	Answer	%	Count
1	People, Organizations, Networks:	0.00%	0
2	Funding Opportunities:	28.36%	19
4	Gear:	28.36%	19
5	Training Opportunities:	26.87%	18
6	Other:	10.45%	7
7	(Optional) Provide any details about the resources you listed:	5.97%	4
	Total	100%	67

Q6_1_TEXT - People, Organizations, Networks:

People, Organizations, Networks: - Text

OTHER FARMERS

SeaGrant, DMR, CEI, Dana Morse, Jaclyn Robidoux, established farmers in Casco Bay

SCORE, NACE conferences

Maine SeaGrant, Dana Morse

UMaine Cooperative Extension

Dana Morse U Maine

Maine Sea Grant

UMaine Extension, GMRI, CEI

Jaclyn robideax, Sara Redmond, Dave , and Thomas henninger

Maine Aquaculture Association, Island Institute

Island Institute

UNH and a couple employees there

Another oyster farmer already in business was instrumental in our success

Maine Aquaculture Association, Small Business Association/ SCORE, Maine Family Shellfish Cooperative

Friends, fishermen, harbormaster

Cedar Point Oysters, Fox Point, Virgin Oyster, ECSGA

Maine Aquaculture Association, Maine Department of Marnine Resources

Dana Morse, Maine DMR

EGSGA, UNH, TNC, other oyster farmers

Easy coast shellfish growers association

Friends and local connections, the Island Institute, the Libra Future Fund, and CEI

Maine Sea Grant

Maine Small Business Association

Downeast Institute

Q6_2_TEXT - Funding Opportunities:

Funding Opportunities: - Text

Blue Hill Peninsula community food grant

Coastal Enterprises, Inc.

Do not qualify for most funding because of lack of assets

Farm credit

I received a couple small grants from the Libra Future Fund and the Island Institute

MTI

Maine Sea Grant

None

SBA

Stavros Niarchos Foundation Small Business Growth and Recovery Grant

USDA

We are self funded and haven't applied for or taken ANY government grant money.

coastal economic development corporation

Q6_4_TEXT - Gear:

Gear: - Text

OYSTERGRO

Maintenance

floating cage

Oyster Gro, type s of oysters

Brooks Trap Mill, OysterGro

Oystergro

Staff at brooks trap

other oyster growers, the internet

Brooks Trapmill

Self built

Brooks Trap Mill

Q6_5_TEXT - Training Opportunities:

Training Opportunities: - Text

AQUACULTURE IN SHARED WATERS, TOP GUN MCE PROGRAM

Aquaculture in Shared Waters

Aquaculture in Shared Waters

Top Gun, webinars

DES yearly meeting

Aquaculture in Shared Waters (MAA, Maine Sea Grant, Maine Aquaculture Innovation Center)

TNC, Island Institute

University of RI oyster course

Coastal Rivers Conservation Trust

Worked for other farmers

did not exist

Working for free on Island Creeks Farm(MA)/ Fatdog Farm (NH)

Maine Sea Grant Aquaculture Course

Q6_6_TEXT - Other:

Other: - Text

A speedy and informed regulatory framework for leasing water is one of the largest factors in our success.

GMRI

Entrepreneurial peers

Muscongus Bay Aquaculture

passion and determination. this has not been easy and there has been alot of challenges along the way.

Google earth, dmr aquaculture map, water quality maps

Q6_7_TEXT - (Optional) Provide any details about the resources you listed:

(Optional) Provide any details about the resources you listed: - Text

There were very few resources available when I was starting up, I just put oysters in the water and figured it out.

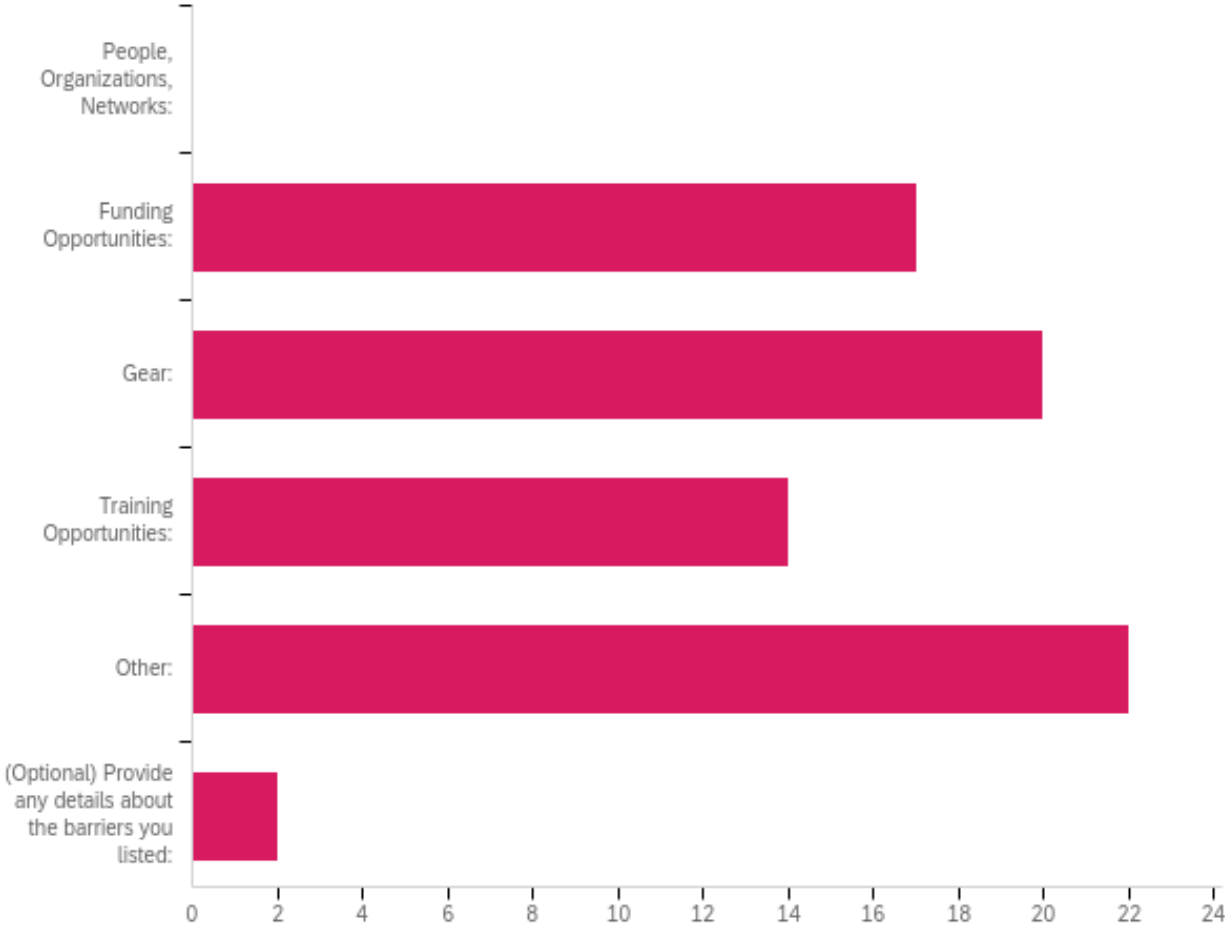
The gear used in oyster aquaculture is not adequate for building a sustainable small family business. Farming systems are needed. I found the only available farming system and it transformed my farm.

There were no training opportunities per se. I had zero hands on experience prior to starting . Additionally, being a single parent woman with limited income and working a full time job- I've yet to find any other funding sources other than myself- this has been a barrier

Former owner of the farm helped us get started, husband was lobsterman and commercial fisherman

Q7 - When considering the barriers to getting your business started or thriving list 5 important barriers:

#	Answer	%	Count
1	People, Organizations, Networks:	0.00%	0
2	Funding Opportunities:	22.67%	17
4	Gear:	26.67%	20
5	Training Opportunities:	18.67%	14
6	Other:	29.33%	22
7	(Optional) Provide any details about the barriers you listed:	2.67%	2
	Total	100%	75



Q7_1_TEXT - People, Organizations, Networks:

People, Organizations, Networks: - Text

CONVERSATIONS WITH FARMERS REALLY HELPFUL

Ignorant and/or wealthy landowners, DMR

Not a lot of great online resources for troubleshooting, general information at that point.

Insufficient training on aquaculture basics. I have fished commercially, but this is a whole new undertaking.

Competition for ideal locations

Maine DMR

Places to sell oysters, time

The people are a source of organization

Opposition of land owners in community

NH agencies only had one shellfish personelle or none. Slow to get people trained and able to answer questions.

The numerous state/federal agencies involved and permits. It was not very intuitive navigating them all.

Maine aquaculture assn. And Maine innovation center and CEI unhelpful

private property owners

Maine DMR website

NIMBYS

Issues in permitting with waterfront homeowners

The Maine DMR and their impossibly slow moving leasing process and lack of staffing. And the fact that aquaculture in general is an old boys club and not one that feels inclusive or accessible to young self-starting women like myself.

regulatory environment

people with the "Not In My Back Yard" mindset

Q7_2_TEXT - Funding Opportunities:

Funding Opportunities: - Text

LONG HAUL TO PROFITABILITY

I don't know how to write grants

Larger grants for gear, etc non-existent or competitive

Banks had no idea about aquaculture businesses. They are now much more open to lending to aquaculture.

None

self funded so slow to start

Do not qualify

Difficult to get full funding, previous owner financed a part

Not much out there in the way of grants specifically geared toward helping women start or grow businesses in traditionally male dominated sectors. And there should be, because the evidence is strong that we have less access to capital in general than our male counterparts do. It's not feasible for everyone to take out a business loan.

bank funding

funding from banks without having 2 years of finances

Q7_4_TEXT - Gear:

Gear: - Text

expense

CONVERSATIONS WITH SUPPLIERS OF GEAR ALSO REALLY HELPFUL

Expense!

All plastic

There were no knowledgeable people selling gear, in fact the people that were selling gear were adverse to aquaculture in general.

Poor quality pre-made bags

Gear is pricey

The type of gear, the way you place your gear,

expensive, so could only grow the business slowly

Cages were heavy and difficult to transport

No organized system for previous owner's gear

there was no pre-fab gear in the late 1980s

Cost of gear is huge, see above answer regarding funding challenges.

price of gear and seed

Gear is expensive

Brooks Trap Mill

Q7_5_TEXT - Training Opportunities:

Training Opportunities: - Text

AQUACULTURE IN SHARED WATERS A TREMENDOUS LEARNING CURVE FOR ME. I ALSO SPENT A WEEK AT DARLING MARINE CENTER WITH CHRIS DAVIS

There are basically none

Not nearby

There were basically no training programs for aquaculture.

Required DMR annual training.

New industry for NH so no training available until one person started then all had to be created and executed.

Top gun program was alienating

there were no training opportunities at all in the late 1980s

Zero training opportunities specifically geared toward women and minorities and their specific challenges and needs

Q7_6_TEXT - Other:

Other: - Text

Time line of the leasing process and limited funding for employees

uniqueness of each site

I think I'm the only trans oyster farmer in Maine

Oversupply due to more/bigger farms; lower prices

Regulatory requirements, permitting requirements, getting through them and understanding them

legalities & special permits as well as water quality

no significant barriers

Capital and trained labor force are two of largest barriers, as well as lengthy leasing process

Length of lease application process

Water access

Getting all agencies involved to work together and streamline the process

NIMBY

Landowners do not want aquaculture but will put up with numerous lobster buoys on the surface of the water

Covid 19

Engine maintenance, did not own truck. Did not know how to trailer boat, waterfront access expensive, no female role models

Lack of sales in 2020 due to pandemic, slow relief aid and lack of communication from federal govt organization overseeing this; Shut downs due to waste water plant construction in Portsmouth beginning the year we purchased the site

Social license

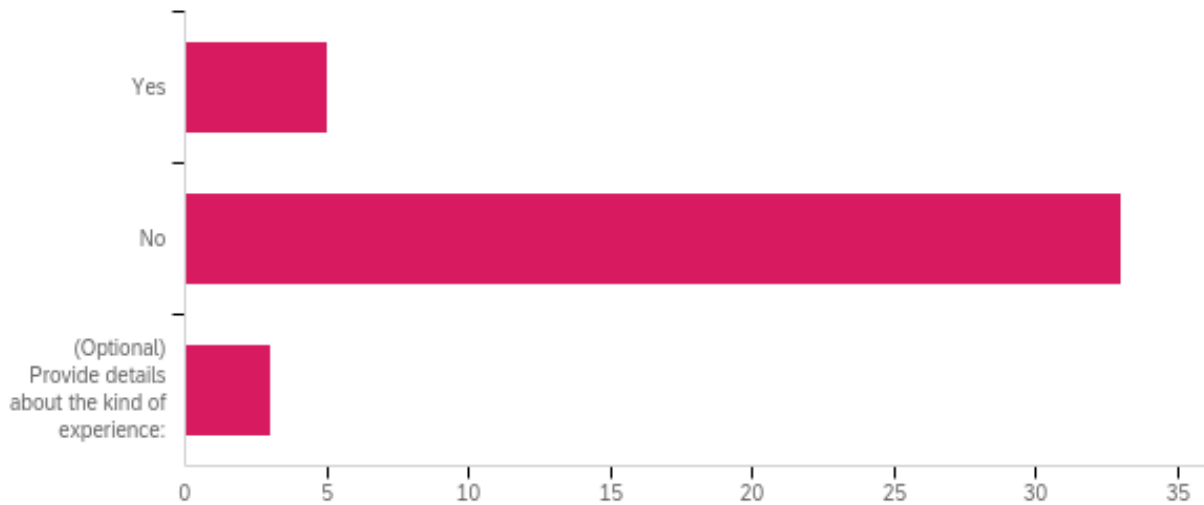
lack of easy public access and facilities, dock

Permitting challenges

Local access to water ways

Regulation, water access, and processing facilities

Q8 - Have you experienced a work situation where you have observed differential treatment based on gender?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Have you experienced a work situation where you have observed differential treatment based on gender? - Selected Choice	1.00	3.00	1.95	0.44	0.19	41

#	Answer	%	Count
1	Yes	12.20%	5
2	No	80.49%	33
3	(Optional) Provide details about the kind of experience:	7.32%	3
	Total	100%	41

Q8_3_TEXT - (Optional) Provide details about the kind of experience:

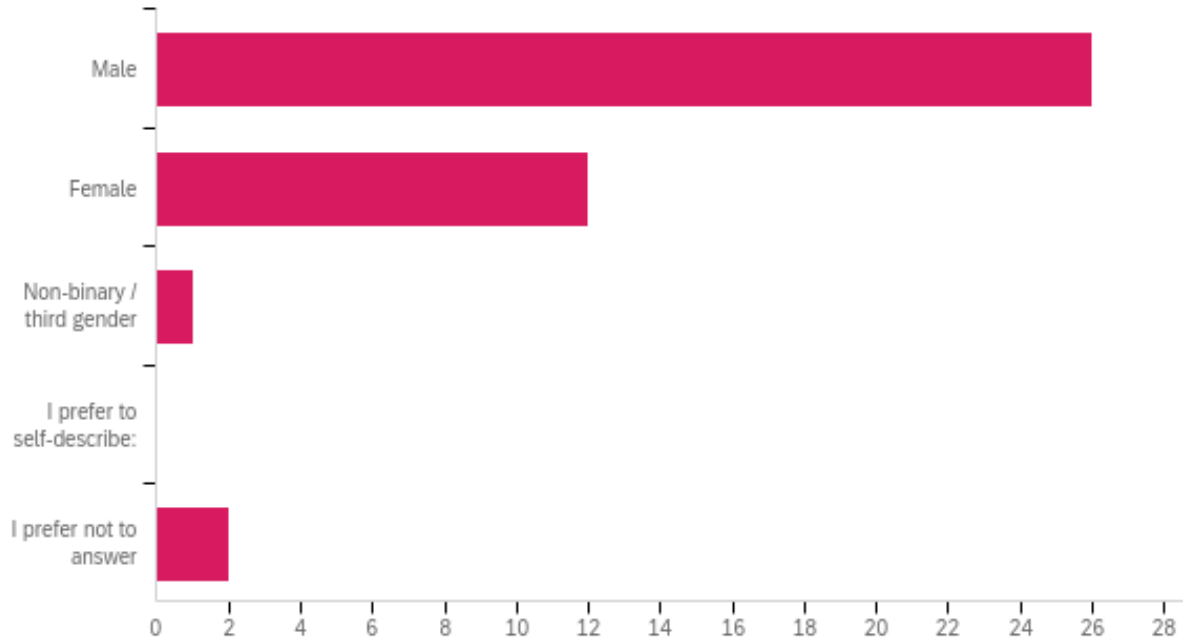
(Optional) Provide details about the kind of experience: - Text

Not on my farm since I work mostly alone but in all other industries I have worked in, yes. Also at shucking events I have been harassed by customers (older, white men)

I own the company and have both male and female employees. We are extremely committed to gender equity.

Yes. As a female I am treated differently, sometimes better, sometimes worse

Q9 - What gender do you identify as?



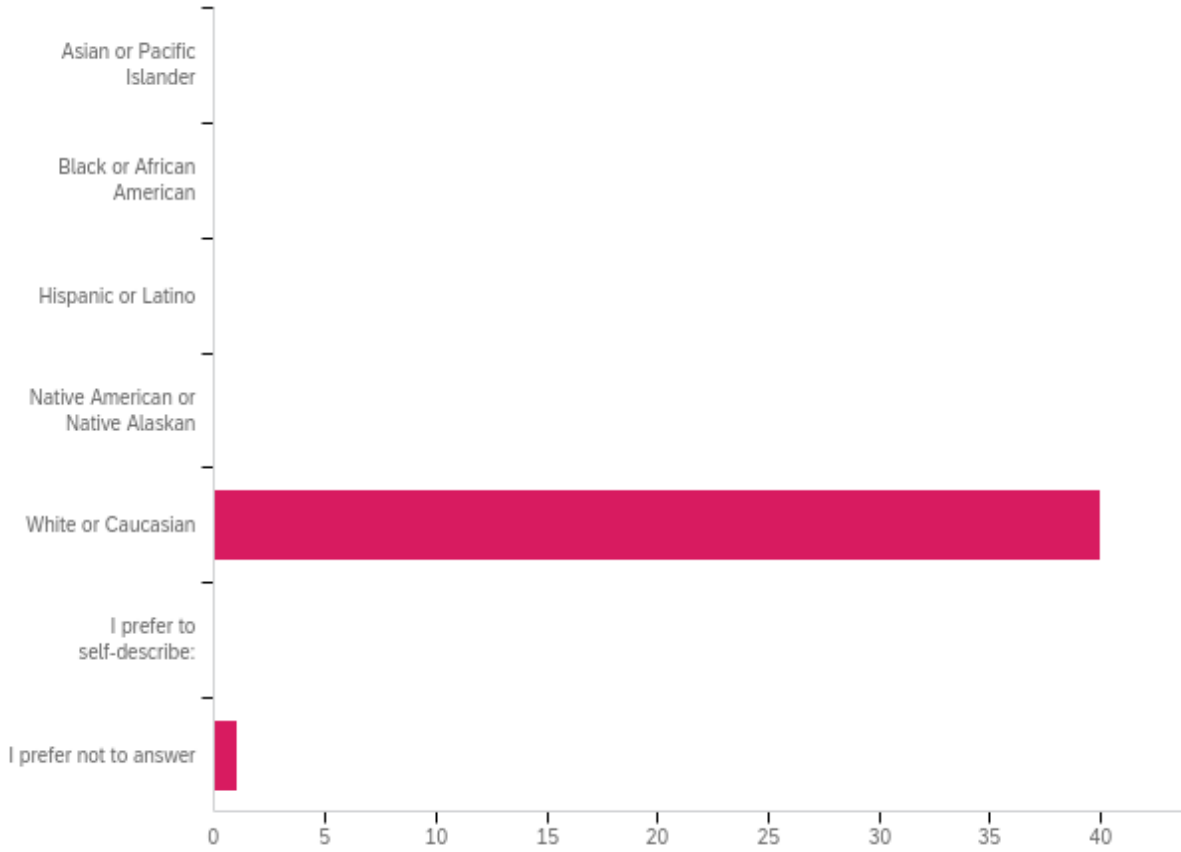
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What gender do you identify as? - Selected Choice	1.00	5.00	1.54	0.94	0.88	41

#	Answer	%	Count
1	Male	63.41%	26
2	Female	29.27%	12
3	Non-binary / third gender	2.44%	1
4	I prefer to self-describe:	0.00%	0
5	I prefer not to answer	4.88%	2
	Total	100%	41

Q10_4_TEXT - I prefer to self-describe:

I prefer to self-describe: - Text

Q10 - Please specify your race (select all that apply):

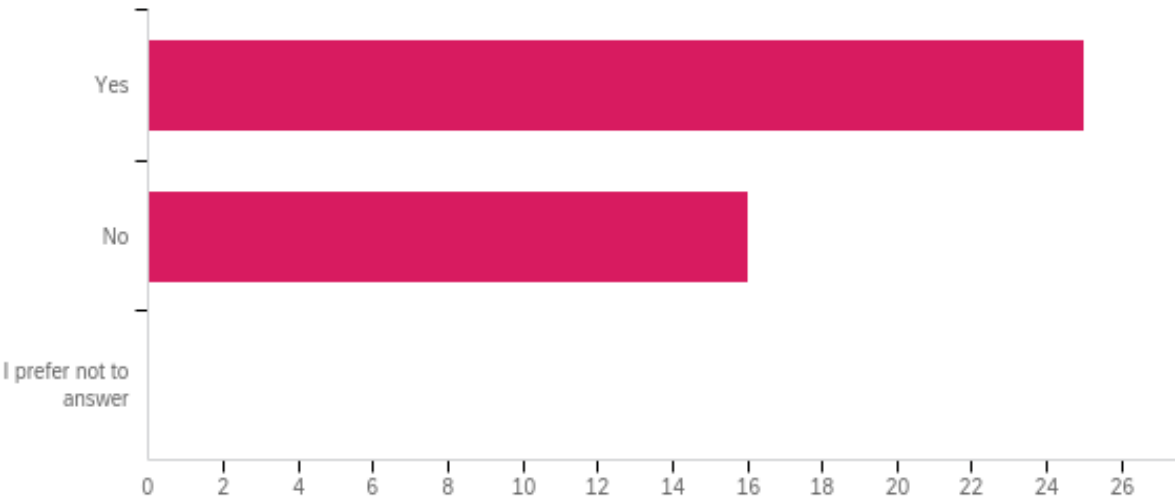


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Please specify your race (select all that apply): - Selected Choice	5.00	7.00	5.05	0.31	0.10	41

#	Answer	%	Count
1	Asian or Pacific Islander	0.00%	0
2	Black or African American	0.00%	0
3	Hispanic or Latino	0.00%	0
4	Native American or Native Alaskan	0.00%	0
5	White or Caucasian	97.56%	40
6	I prefer to self-describe:	0.00%	0
7	I prefer not to answer	2.44%	1
	Total	100%	41

Q11_6_TEXT - I prefer to self-describe:
 I prefer to self-describe: - Text

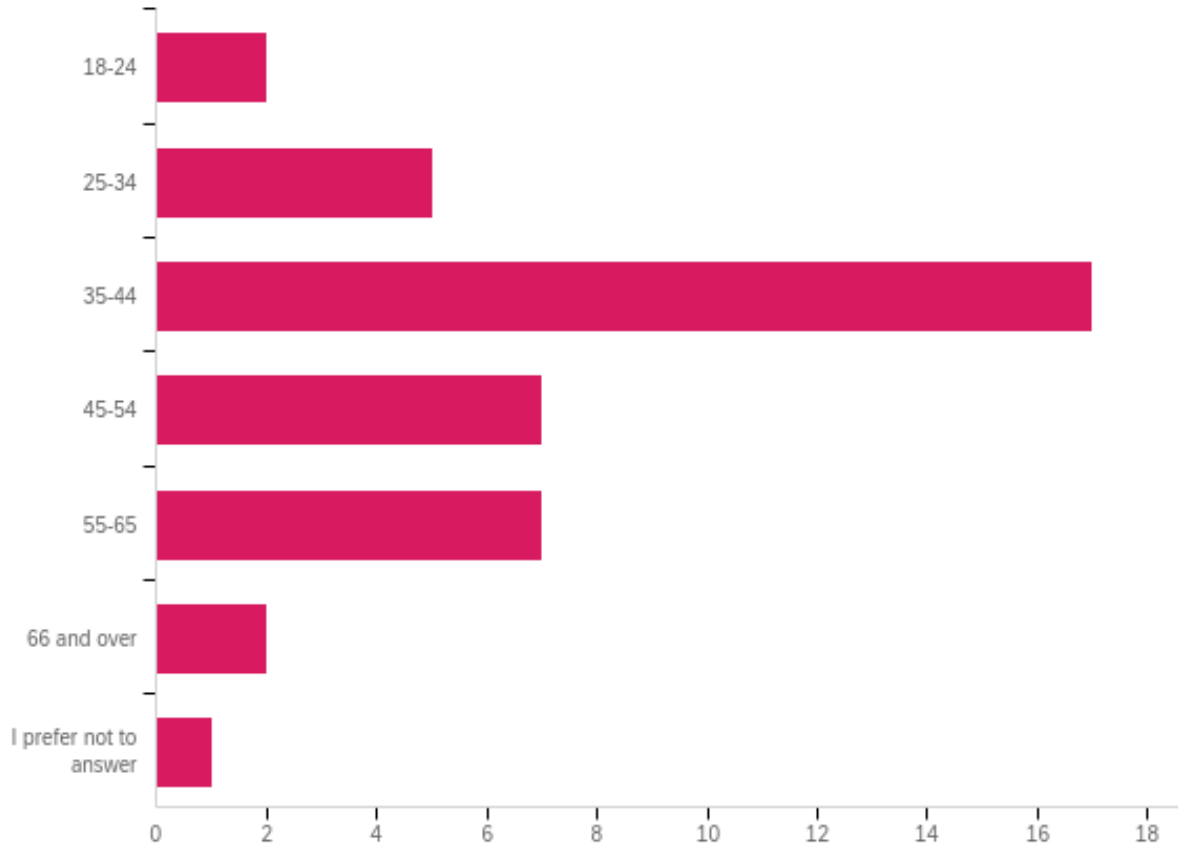
Q11 - Are you a parent?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Are you a parent?	1.00	2.00	1.39	0.49	0.24	41

#	Answer	%	Count
1	Yes	60.98%	25
2	No	39.02%	16
3	I prefer not to answer	0.00%	0
	Total	100%	41

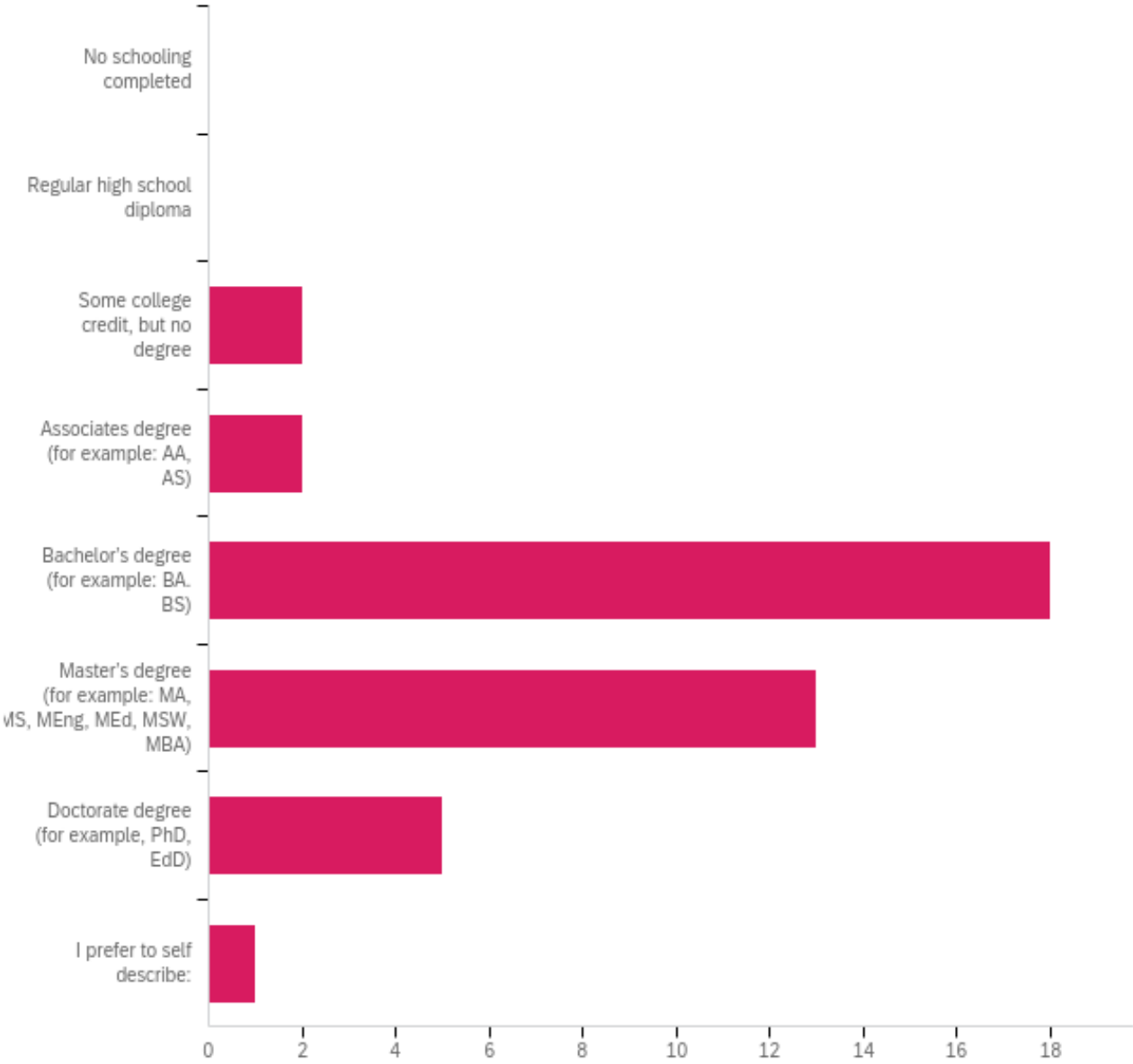
Q12 - What is your age?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What is your age?	1.00	7.00	3.54	1.31	1.71	41

#	Answer	%	Count
1	18-24	4.88%	2
2	25-34	12.20%	5
3	35-44	41.46%	17
4	45-54	17.07%	7
5	55-65	17.07%	7
6	66 and over	4.88%	2
7	I prefer not to answer	2.44%	1
	Total	100%	41

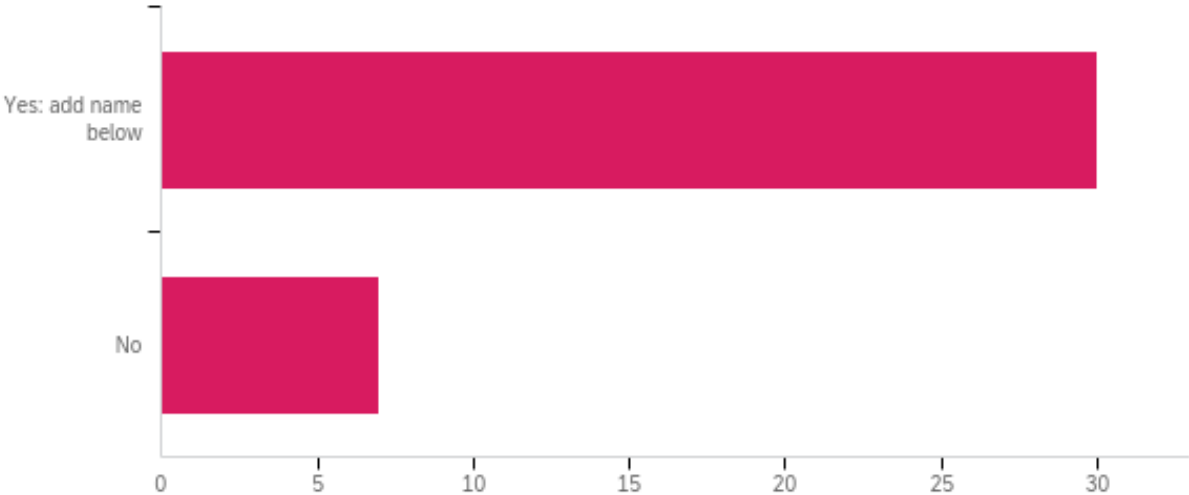
Q13 - What is the highest degree or level of school you have completed?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What is the highest degree or level of school you have completed? - Selected Choice	3.00	8.00	5.49	1.02	1.03	41

#	Answer	%	Count
1	No schooling completed	0.00%	0
2	Regular high school diploma	0.00%	0
3	Some college credit, but no degree	4.88%	2
4	Associates degree (for example: AA, AS)	4.88%	2
5	Bachelor's degree (for example: BA, BS)	43.90%	18
6	Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)	31.71%	13
7	Doctorate degree (for example, PhD, EdD)	12.20%	5
8	I prefer to self describe:	2.44%	1
	Total	100%	41

Q14 - Would you be willing to participate in follow-up research related to this project?



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Would you be willing to participate in follow-up research related to this project? - Selected Choice	5.00	6.00	5.19	0.39	0.15	37

#	Answer	%	Count
5	Yes: add name below	81.08%	30
6	No	18.92%	7
	Total	100%	37