

Marine Workforce Study for the Tri-County Region

Prepared For
WorkForce One – Broward

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Executive Summary

WorkForce One-Broward commissioned a study in late 2007 with the Center for Urban and Environmental Solutions (CUES) at Florida Atlantic University, who partnered with the Marine Industries Association of South Florida, the Marine Industries Association of Palm Beach County, Inc., and the Marine Council of Miami-Dade County, to develop a workforce needs assessment of the marine industries in the Tri-County area of Southeast Florida. This area encompasses Broward, Palm Beach, and Miami-Dade counties, a region that has a dominant marine industry. The survey was mailed out in February of 2008, and analysis was completed in May of 2008.

The overall objectives of this study were:

- to determine the labor needs of the Southeast Florida marine industry
- to determine which skills will be needed now and in the future
- to identify factors affecting change in the marine industry
- to determine what formal training and training preferences are needed, and
- to provide a base for future studies and actions for the marine industry.

A total of 816 of 997 sent surveys were successfully delivered to marine businesses in the Tri-County area, with a response rate of 29 percent (233 respondents). The survey attempted to gauge the present workforce needs of the marine industry, as well as those in the near future. Also, a major focus of the survey was to determine the level of need and interest in local educational centers that focus on marine trades and to provide guidance for developing those programs. The survey found a considerable amount of interest in the development of a local training center located at Broward Community College. This interest in a local training program specializing in technician

training in South Florida holds great promise for the Marine Technology Program at Broward Community College.

Key Findings

Respondent Profile

- Almost half (45%) of small-medium businesses (5+ employees) have been in operation for 20 or more years. Of the sole proprietors (under 5 employees), 40 percent have been in business for less than 10 years.
- The majority of respondents were small-medium companies. There were 55 percent (127) small-medium companies and 45 percent (106) sole proprietors, totaling 233 total respondent businesses. This compares with a sample population split between small-medium (44%) and sole proprietors (56%).
- The largest proportion of businesses surveyed were involved with some aspect of repair or service, followed by sales.
- The majority of employees in the Tri-County marine industry work full time.

Positions Needed

- About half (53%) of those employees that marine businesses are currently recruiting are trades and technical positions, particularly electrical technicians, boating systems technicians, carpenters/joiners, and boat yard laborers. Sales staff are also in demand. Two-thirds of the future positions that marine companies are looking to hire are trade and technical positions, followed by sales staff.
- The most important skills that the marine industry needs currently and in the future are technical skills, which consist of mechanics, welders, engineers, and electricians. Next highest needs are experienced employees, followed by workers with solid personal attributes, such as work ethic, honesty, and loyalty.
- Nearly three-quarters (73%) of those companies with five or more employees have difficulty finding qualified personnel. Only half (53%) of sole proprietors mentioned difficulty in recruiting personnel.

Future Changes

- Over four-fifths (86%) of those surveyed feel that the industry will change in the future, but over two-thirds do not see those changes affecting skill needs.

- Leading the list of changes in the industry are economic factors, e.g., the cost of fuel, operations, and the economic slowdown. Technological advancements are the second biggest factor.

Training

- Over a third (28%) of respondents prefer training or certification for electrical, sales and boat systems technicians.
- While nearly three-fifths (59%) of the respondents feel that there is a need for local training centers, 73 percent of respondents do not send employees for outside training. Also, 45 percent provide formal on-the-job training, while only 21 percent have apprenticeships.
- The biggest reason for not sending employees for further training is an excessive workload, followed by expense.
- The main reason sole proprietors do not send employees for further training is the expense, while small-medium companies report excessive workload as a barrier to training.
- Most respondents found that hands-on training, both on- and off-site, was the most useful type of training, as well as workshops.
- Nearly half (45%) of the total sample was interested in learning more about the Broward Community College Marine Technology Program.
- The overwhelming majority of the total population does not offer career pathways. Of the 17 percent who do offer career pathways, 28 percent are sole proprietors and 72 percent are small-medium companies.
- Only about one-fifth (17%) of the total sample was aware of the Employ Florida Marketplace website.

Subcontractors

- Over half (54 percent) of respondents use subcontractors. Over a third (36%) of those companies use subcontractors to complement gaps in employee expertise.

Background

In late 2007, the Center for Urban and Environmental Solutions (CUES) at Florida Atlantic University partnered with the Marine Industries Association of South Florida, the Marine Industries Association of Palm Beach County, Inc., and the Marine Council of Miami-Dade County to conduct a workforce needs assessment of the marine industries in Southeast Florida for WorkForce One-Broward. In January of 2008, a survey was finalized, and briefings were held with the industry trade associations in the Tri-County area to inform members about the project. The survey was mailed out in February of 2008, with CUES and industry follow-ups throughout March and April of 2008. Analysis of the survey was completed in May of 2008.

The Marine Workforce study for the Tri-County area focused on developing a workforce needs assessment for retaining and expanding a productive marine workforce to keep this industry a viable economic force in Southeast Florida. This industry currently generates over \$13.6 billion in annual economic impact.¹ Cities and counties are starting to recognize the interdependence of the region's economy and the need to work together to ensure there is an adequate, properly trained marine workforce. It is both an economic development and a planning issue that can be addressed on a regional basis in the South Florida region.

Unfortunately, the survey was administered at a time when the national and regional economies trended downward and fuel prices were extremely high. Responses to some of the questions can be attributed to this poor economic climate. The survey

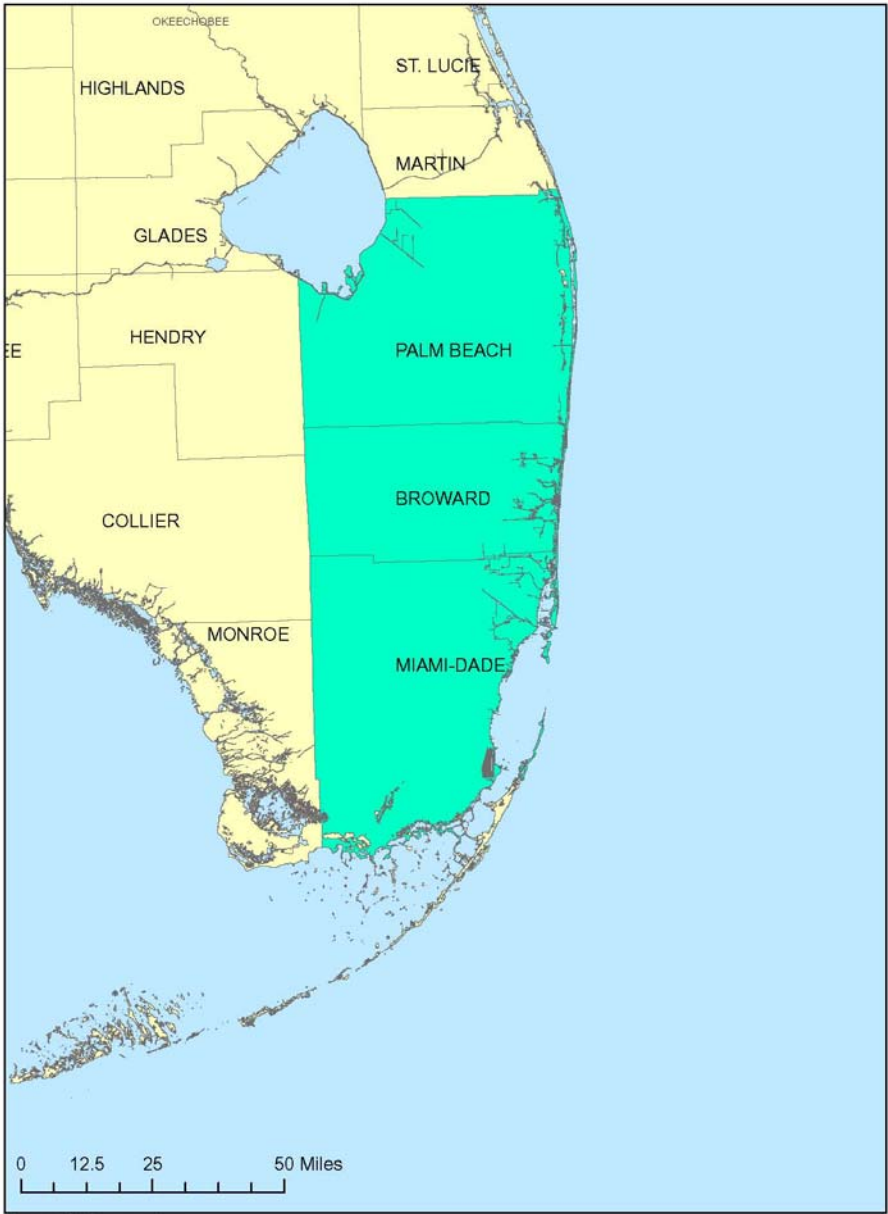
¹ Thomas J. Murray & Associates. (2005, November). Economic Impact of Recreational Marine Industry: Broward, Dade, and Palm Beach Counties, Florida—2005. Fort Lauderdale, FL: Marine Industries Association of South Florida.

describes the marine industry in Southeast Florida in a challenging economic period, which would be expected to improve as the economy improves.

The project involved a comprehensive workforce study to assess current and future marine workforce needs of the marine trades industry in the Tri-County area of Palm Beach, Broward, and Miami-Dade counties (see Figure 1). This study will guide workforce development in the Tri-County area as the marine industry adapts to future changes, identifies employer needs for skilled technical employees, and collaborates on training programs, such as the Broward Community College Marine Technology Program that began in January of 2008.



Figure 1
Southeast Florida Tri-County Area



Created by CUES, www.cues.fau.org

Goals and Objectives

The goal of this study was to understand the current status of the workforce needs of the marine industry in Southeast Florida and to help plan for its future. The overall objectives of this study were:

- to determine the labor needs of the Southeast Florida marine industry
- to determine which skills will be needed now and in the future
- to identify factors affecting change in the marine industry
- to determine what formal training and training preferences are needed, and
- to provide a base for future studies and actions for the marine industry.

A survey was developed and administered to business owners in the marine industry by mail and by extensive phone follow-ups. The survey also measured marine business owners' interest in the newly established Marine Technology Program at Broward Community College and awareness of the website for WorkForce One's Employ Florida Marketplace.

⁵ All responses for this and the following analysis are weighted to reflect the total marine business population in the Tri-County area. Repair includes canvas repair, electronics/HVAC, engine refitting, and general repair.

Profile of Marine Company Respondents

Average Size of Marine Businesses

The total number of surveys mailed out initially by CUES was 1,165, with 56 percent of the surveys mailed out to sole proprietors and 44 percent to small-medium companies. Of the total sample population of 1,165 businesses with 11,734 employees, the average business size is ten employees. Based on the population sample, over half (57%) of marine businesses employ fewer than five employees, and one-fifth (21%) of small companies have 5-9 employees (see Figure 2). Figures 3 and 4 shows the distribution of respondents, which slightly over-represents marine businesses with ten or more employees. But comparing employees of the sample population with the respondents (see Figure 5), the two groups are similar.

While small businesses are important, it is noteworthy that two-fifths (39%) of employees are hired by those businesses with over 50 employees (see Figure 2). These businesses represent only four percent of marine businesses but have 39% of its employees, or an average number of 83 employees, even though they constitute only a small segment of the industry (see Figure 2). This suggests that workforce training and recruitment can reach the most employees by targeting two groups--those businesses with over 50 employees, representing 39 percent of the employee population, and those with five to 50 employees, representing 50 percent of the employee population and that may lack the training resources of larger companies.

Figure 2

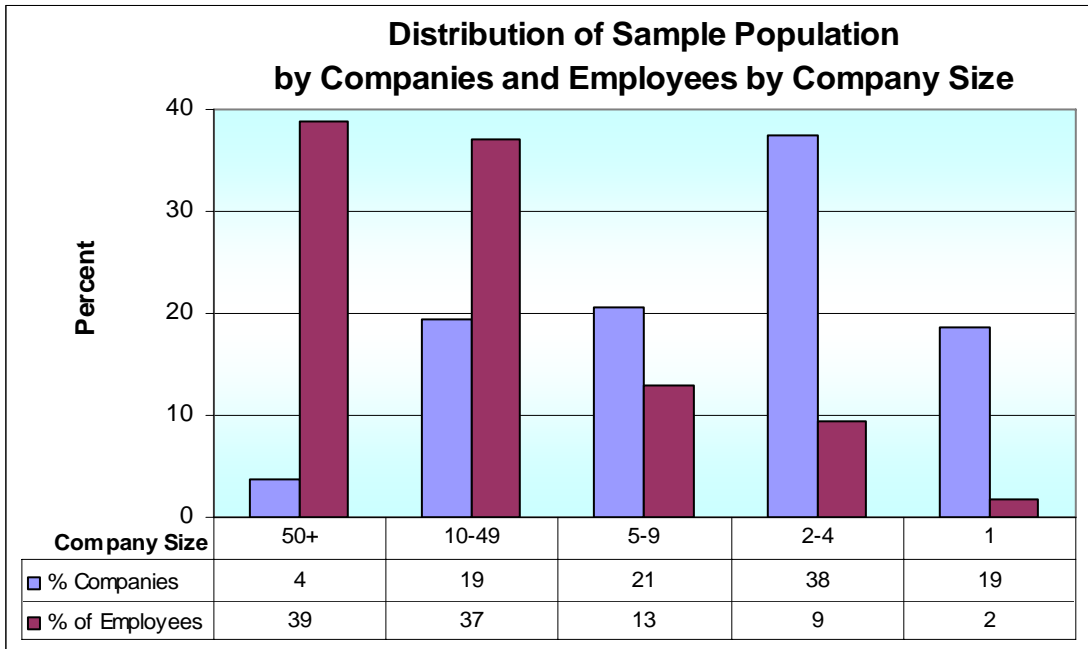


Figure 3

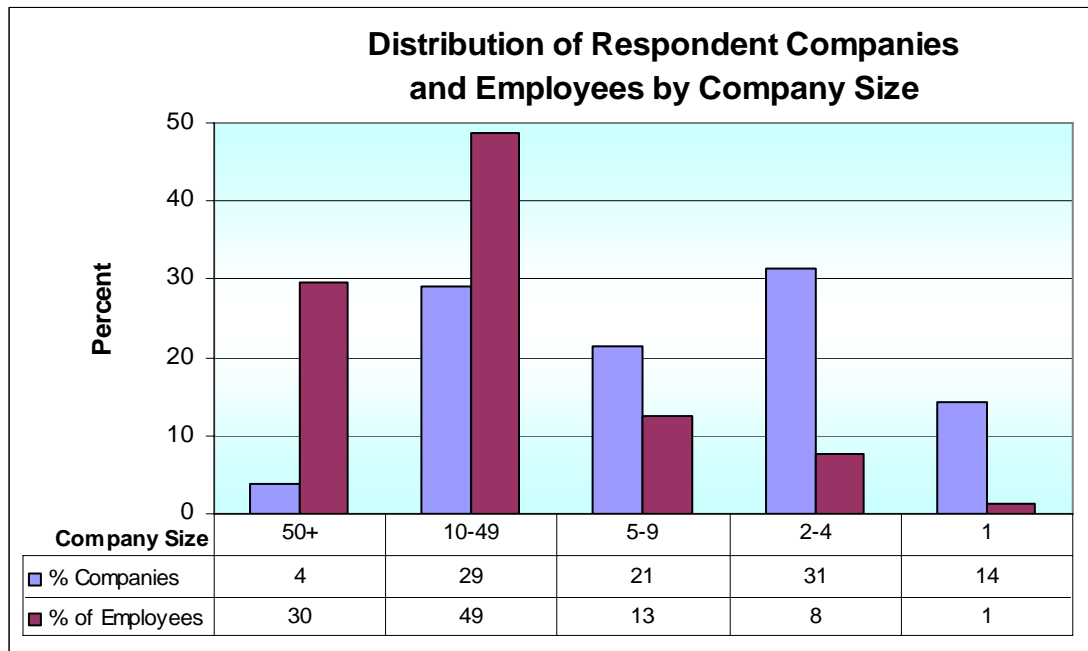


Figure 4

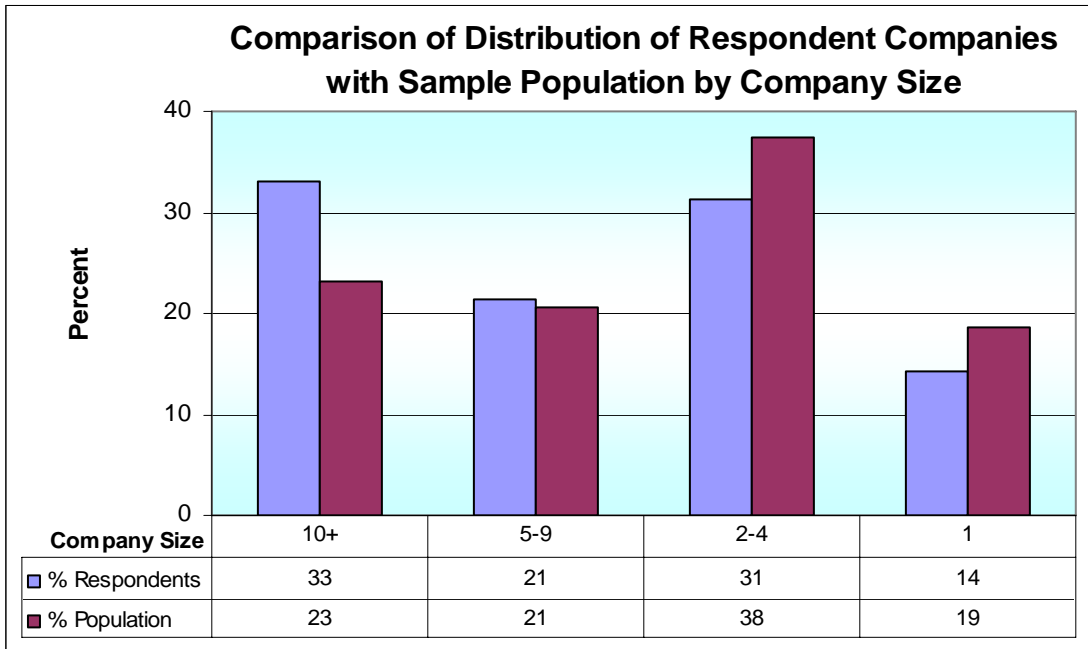
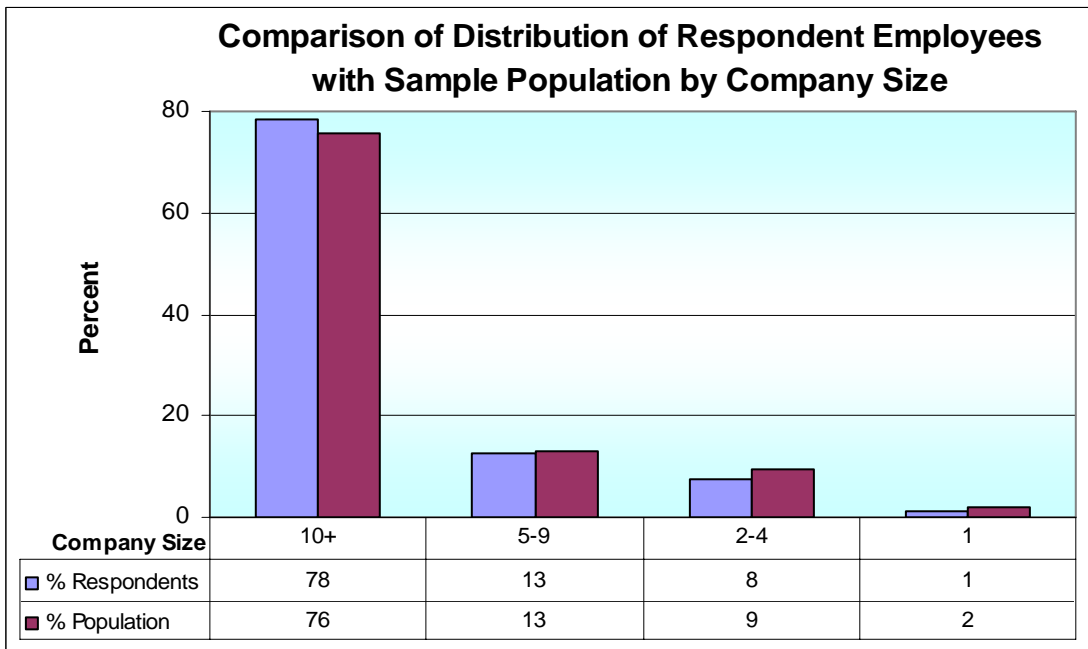


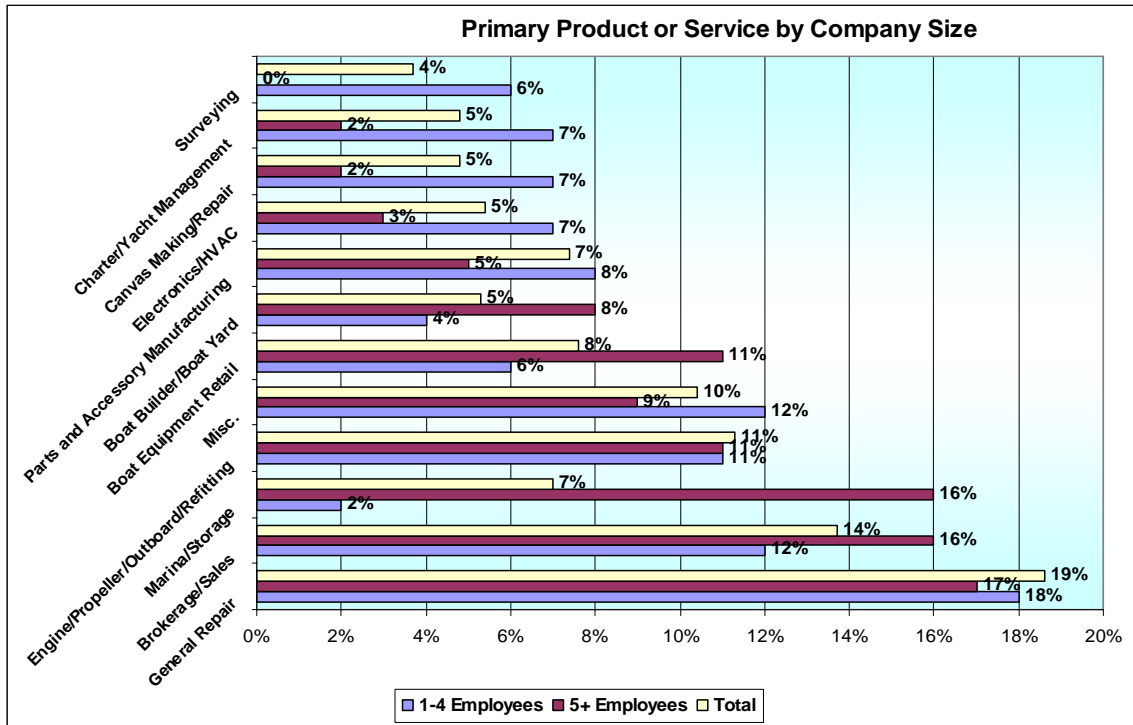
Figure 5



Type of Businesses

The survey asked businesses to identify their primary product or service. Of the 233 responses to the survey, 232 indicated their primary business type (see Figure 6). Two-fifths (43%) of businesses that responded are involved in some kind of repair, whether general repair or a specific type of service, such as canvas or engine repair.⁴ Two-fifths of the sole proprietors are repair companies (general repair, engine/propeller/outboard/refit repair, electrical/HVAC repair and canvas making and repair). The second most frequent response was brokerage/ sales, at 14 percent.

Figure 6

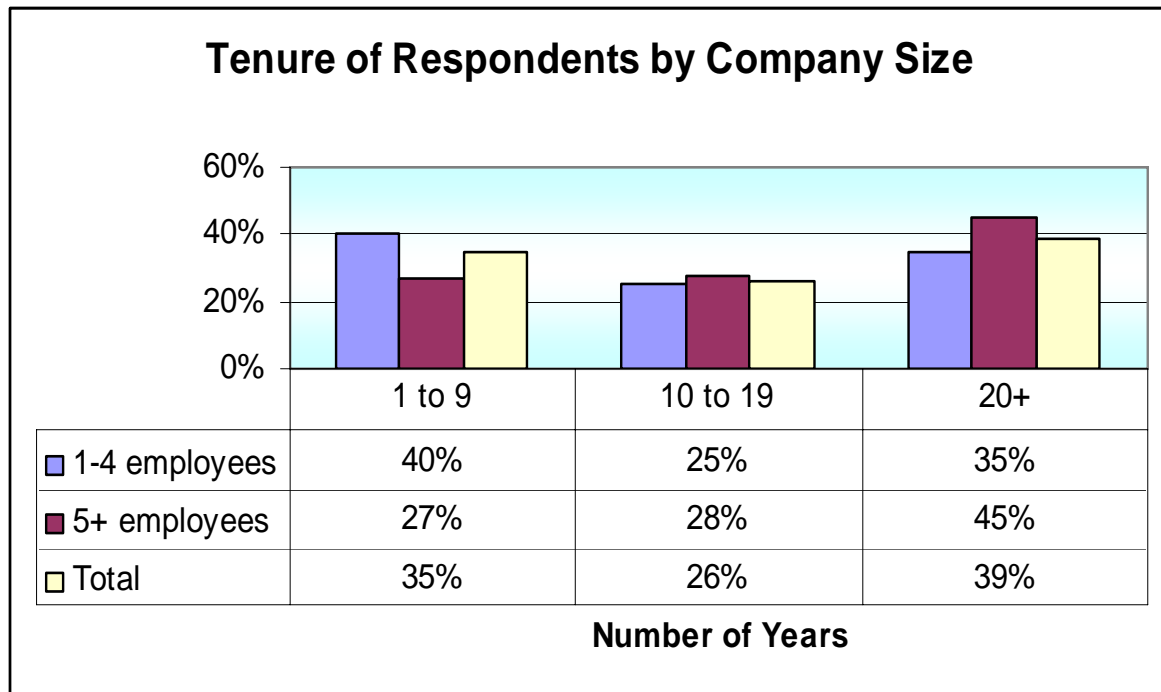


Question: Which of these would you say is your primary product or service at this location?

Number of Years in Business

The survey asked respondents to indicate how long they have been in business at their present location (see Figure 7). Slightly less than half (45%) of small-medium businesses have been in operation for 20 or more years. Two-fifths of sole proprietors have been in business for less than 10 years.

Figure 7



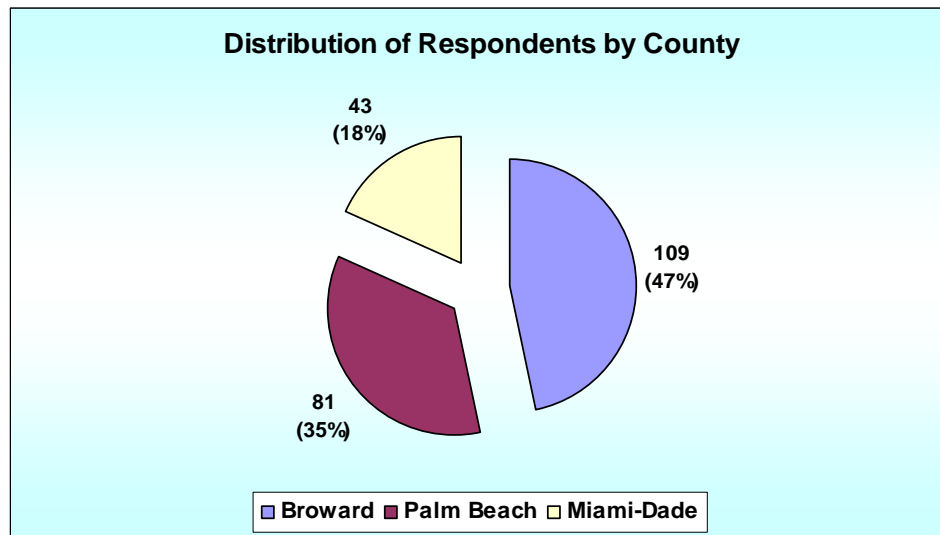
Question: How many years has your firm been in business at this location?

Business Location



Nearly half (47%) of the companies who responded are located in Broward, one-third (35%) of the respondents are located in Palm Beach, and one-fifth (18%) of these companies are located in Miami-Dade (see Figure 8). Out of the total sample of 1,165, 50 percent are located in Broward, 26 percent are located in Miami-Dade, and 24 percent are located in Palm Beach.

Figure 8



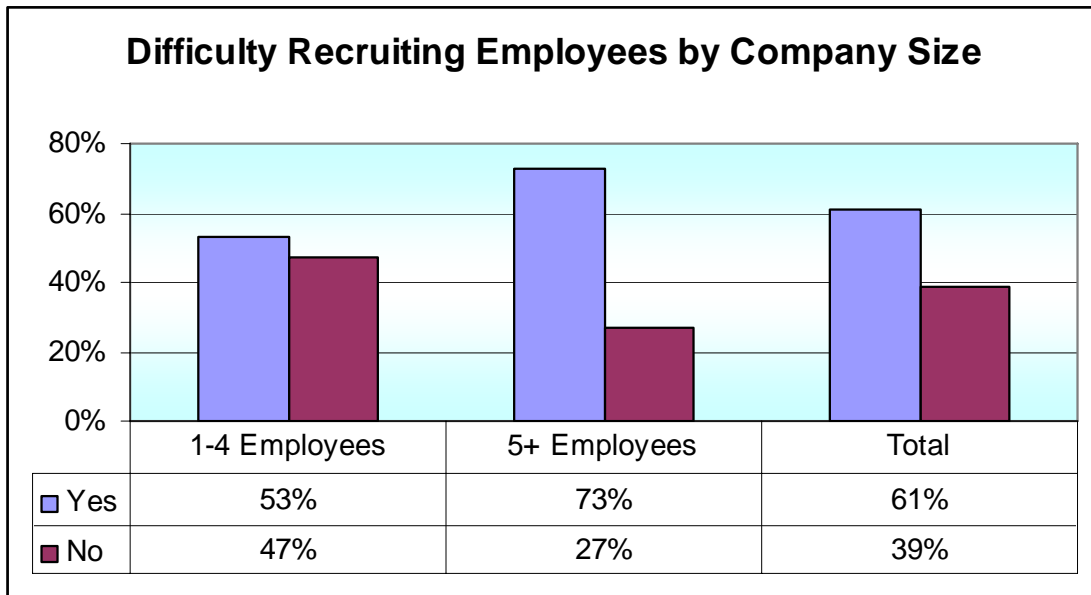
Note: Chart is not weighted. Location of Business was determined by Company area code.

Workforce Synopsis

Replacing Lost Employees

The survey asked if employers found it difficult to find qualified employees locally as skilled employees left or retired (see Figure 9). Over three-fifths (61%) of the marine population reported difficulty in recruiting skilled staff locally, suggesting unmet needs for skilled workers in the Tri-County region. While just over half (53%) of sole proprietors found it difficult to replace employees, nearly three-quarters (73%) of small-medium companies had trouble replacing skilled employees with qualified employees in the local area. Because sole proprietors are likely to be family-owned and operated with fewer employees, their labor needs may be more easily met. A third of sole proprietors consist of self-employed independent contractors.

Figure 9

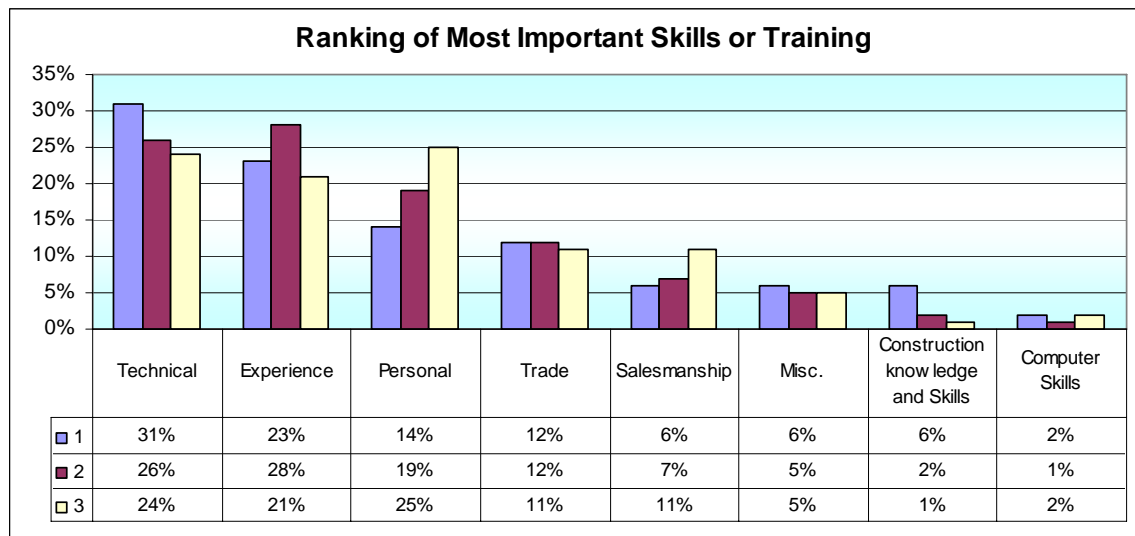


Question: As skilled employees leave or retire, do you find it difficult to find new employees locally with the skills to replace them?

Current Skills Needed

The survey also asked for the three most important skills (or training) at this location *today*. Technical skills were ranked as the most important skills; these include welding, engineering, and electrical skills (see Figure 10). The second most important category of skill was experience in their trade, followed by personal attributes, such as honesty and work ethic. This suggests that personal qualities of job candidates are as important to marine owners as technical skill training. Trade skills, such as carpentry and canvas making, were also ranked high. Responses were similar for each company size.⁵

Figure 10



Question: What are the top THREE most important employee skills (or training) at this location today?

⁵ Responses were similar for sole proprietors and small-medium companies.

Current Employment

Over half of current marine industry positions involve trades and technical positions (55%). Diesel technician is the most employed skilled position, with electrical technician following, while painter/varnisher is the most frequent trade position (see Table 1) These positions are followed by sales staff (22%) and business/clerical positions (13%). The category of “other” consists of unspecified serviceman, divers, and other positions that are not indicated in the choices of this survey or not marine-related, such as security or delivery drivers. Half (53%) of these employees that marine businesses are currently recruiting are trades and technical positions, particularly electrical technicians, carpenters/joiners, and boat yard laborers. Sales staff are also in demand. Two-thirds of the future positions that marine companies are looking to hire are trade and technical positions, followed by a smaller group (14%) of sales staff personnel.



Table 1. Current and Future Workforce Needs

Position	Full Time	Part Time	Total	Currently Looking	Future	Total
Technical						
Diesel Technician	762	27	789	68	83	151
Electrical Technician	629	39	668	117	140	257
Boat Systems Technician	597	27	624	96	325	421
Welder/Fabricator	561	61	622	4	46	50
Outboard Technician	378	8	386	76	81	157
Inboard Gas Engine Technician	80	8	88	8	11	19
Sterndrive Technician	65	4	69	15	19	34
Propeller Builder/Mechanic*	60		60			
HVAC Technician*	48		48			
Subtotal	3,180	174	3,354	384	705	1,089
Trade						
Painter/Varnisher	473	15	488	60	45	105
Boat Yard Laborer	421	12	433	109	199	308
Fiberglass Technician	404	15	419	68	57	125
Carpenter/Joiner	403	8	411	113	41	154
Travel-lift/Forklift Operator	283	8	291	49	114	163
Rigger	218	19	237	4	19	23
Sewer/Seamstress/Upholsterer*	153		153			
Detailer/Cleaner	106	27	133	69	122	191
Subtotal	2,461	104	2,565	472	597	1,069
Professional						
Sales Staff	2,167	211	2,378	282	271	553
Business/Clerical	1,290	77	1,367	137	148	285
Captain/Crew Member*	194		194			
Manager*	52		52			
Surveyor*	51		51			
Subtotal	3,754	288	4,042	419	419	838
Miscellaneous						
Dock Master	143	8	151	30	31	61
Dock/Gas Attendant	128	15	143	23	57	80
Other	539	42	581	274	177	451
Subtotal	810	65	875	327	265	592
Total	10,052	631	10,836	1,602	1,986	3,588

*Only full time employment data given.

Not all "Other" responses specified a position.

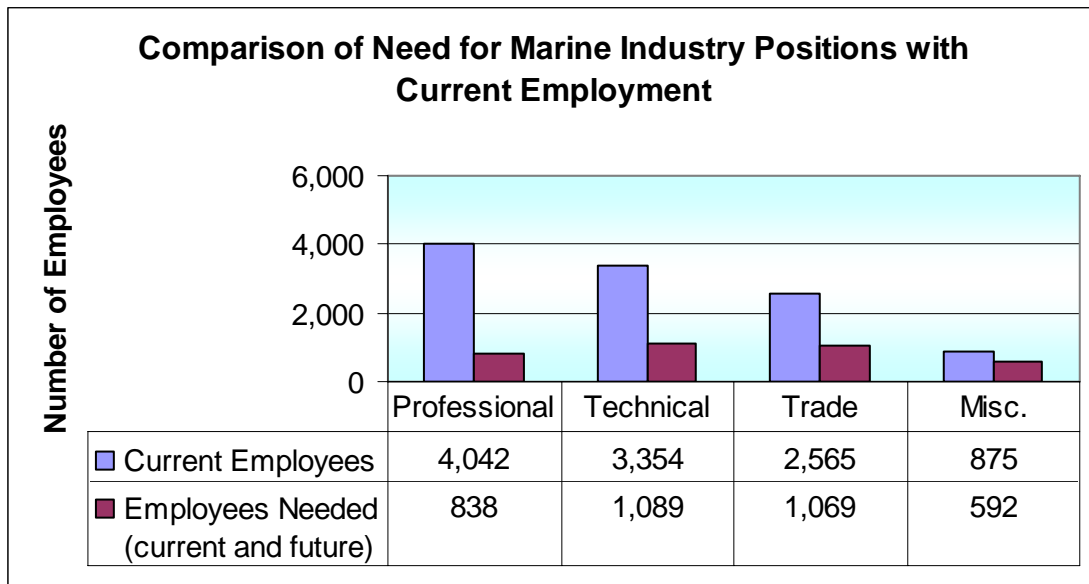
Question: Please estimate the number of current employees. Please estimate the number of year-round people you are looking to hire with the following primary skills.⁶ (current and future)

⁶ Both sole proprietors and small-medium companies employ more technical positions than trade positions.

Comparison of Current Employment with Workforce Needs

Compared to current employment, there is more workforce demand for technical and trades positions, both now and in the future, than for professional jobs (see Figure 11). Respondents report a need for 42 percent (1,069) more trades employees, for 32 percent (1,089) more technical employees, for 21 percent (838) more professional positions currently and in the future than they have today. The marine industry needs a total of 34 percent more workforce than it currently employs, or 3,588 additional workers. Altogether, the technical and trades workforce needs represent three-fifths of the total workforce needs currently and in the future.

Figure 11



Currently, trade positions are the most sought-after by marine businesses (see Table 1). Among specified positions, sales staff is the most frequently sought position in the marine industry, with business/clerical trailing (see Table 2). The following chart shows a breakdown of the “other” category for currently held positions.

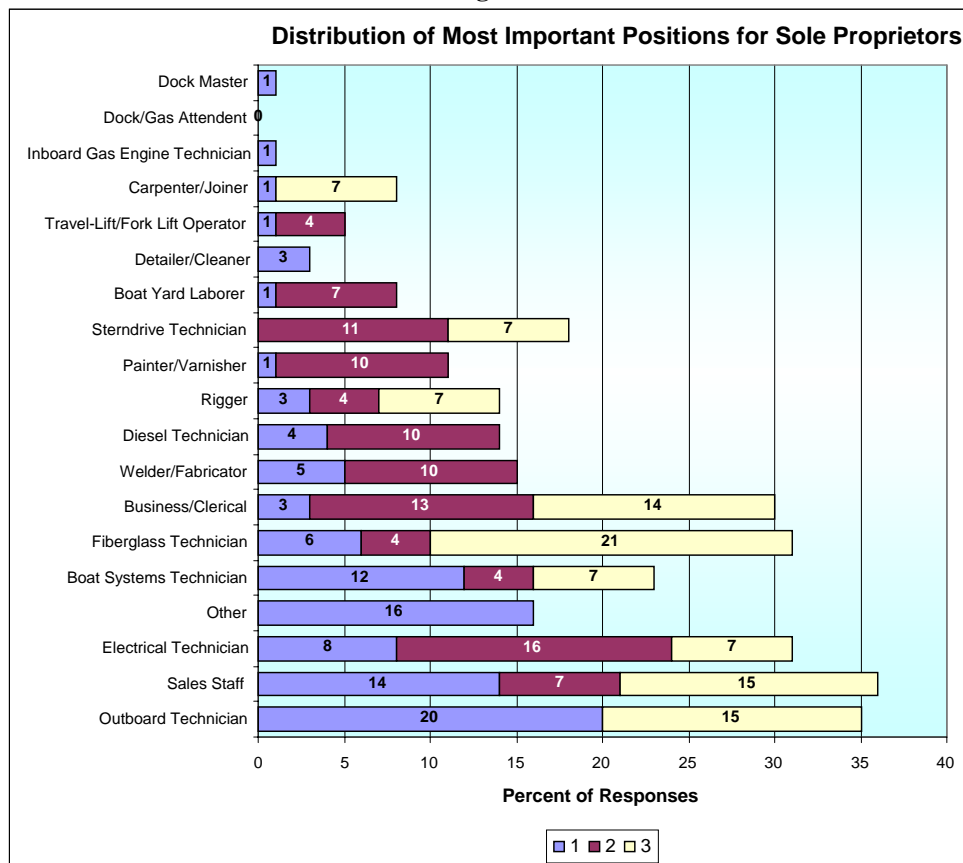
Table 2. Description of Other Current Positions

Others	Count
Drivers	121
Warehouse	92
Security	44
Construction	37
Servicemen	27
Machinist	22
Divers	20
Lift Raft Technician	15
Unknown	161

Most Challenging Positions to Recruit

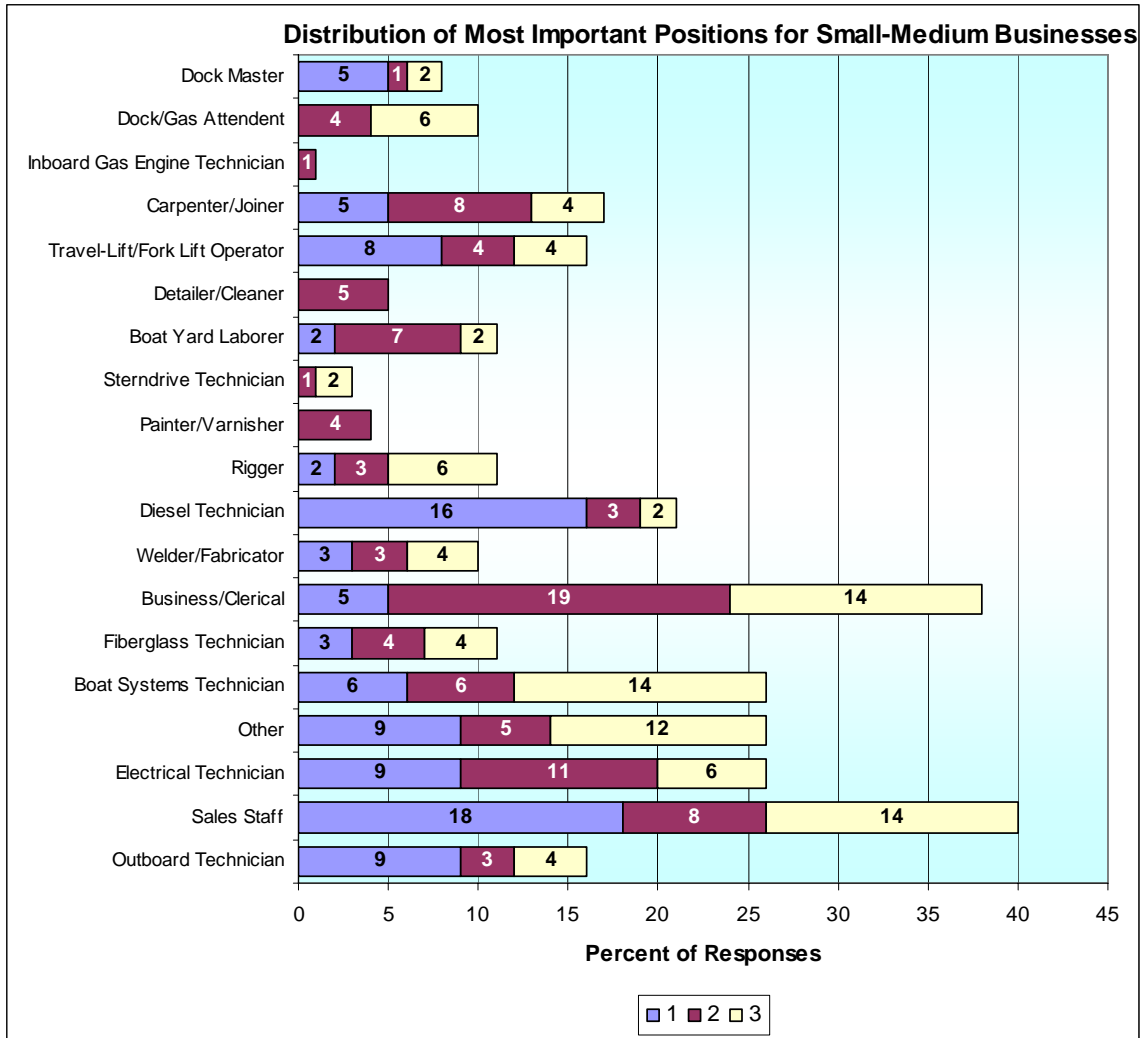
Respondents identified the top three most difficult positions to fill (see Figures 12 and 13). Companies with four or less employees ranked outboard motor technicians number one as the most difficult position to fill, followed by sales staff, while sales ranks number one in importance for small-medium companies, followed by diesel technicians. Overall, more respondents in both sole proprietors and small-medium companies rated sales staff as the most difficult to fill position when totaling all three rankings, followed by outboard technicians for sole proprietors and business/clerical for small-medium companies. This suggests the focus on sales and business operations in small-medium companies.

Figure 12



Question: Of the employees that you require, rank the three most difficult positions to fill, with 1 being the most difficult.

Figure 13

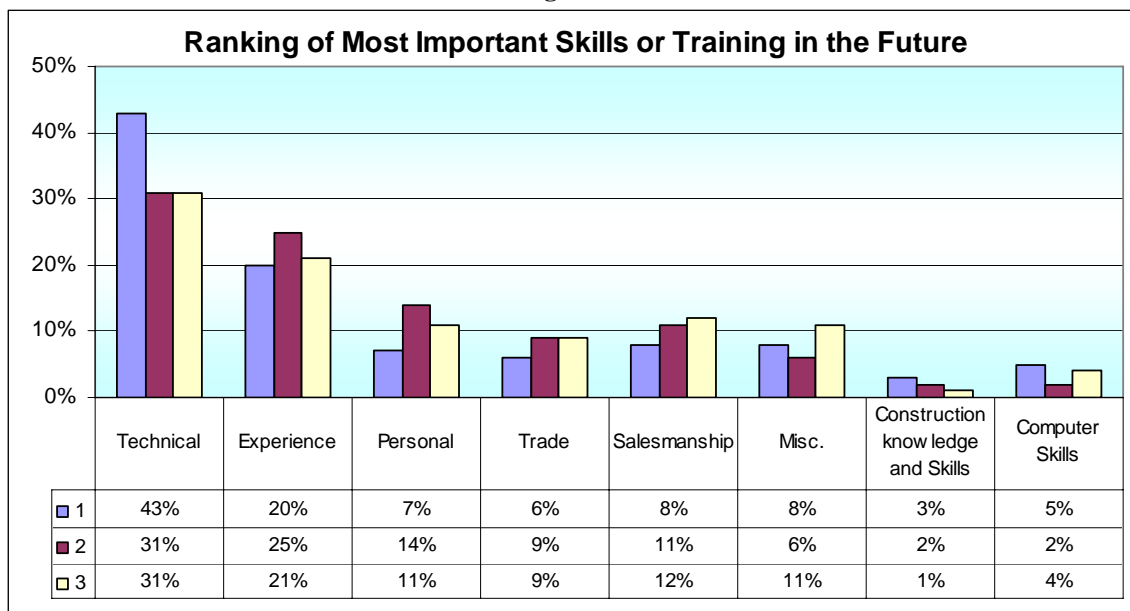


Question: Of the employees that you require, rank the three most difficult positions to fill, with 1 being the most difficult.

Future Skill Needs

As a follow-up question, the survey asked respondents to indicate what skills will be the most important in the *future* (see Figure 14). There was relatively little change from the skill sets needed today, compared to the skills needed for the future. Technical skills remained the most important, while experience remained the second most valued attribute. The biggest difference is the increase in technical skills that will be needed in the future, compared to current skill needs (see Figure 10). Over two-thirds of the total sample did not feel that the changes in the marine industry will affect the skills needed in the future.⁷

Figure 14



Question: What are the top THREE most important skills (or training) for the marine industry that will be needed in the future?

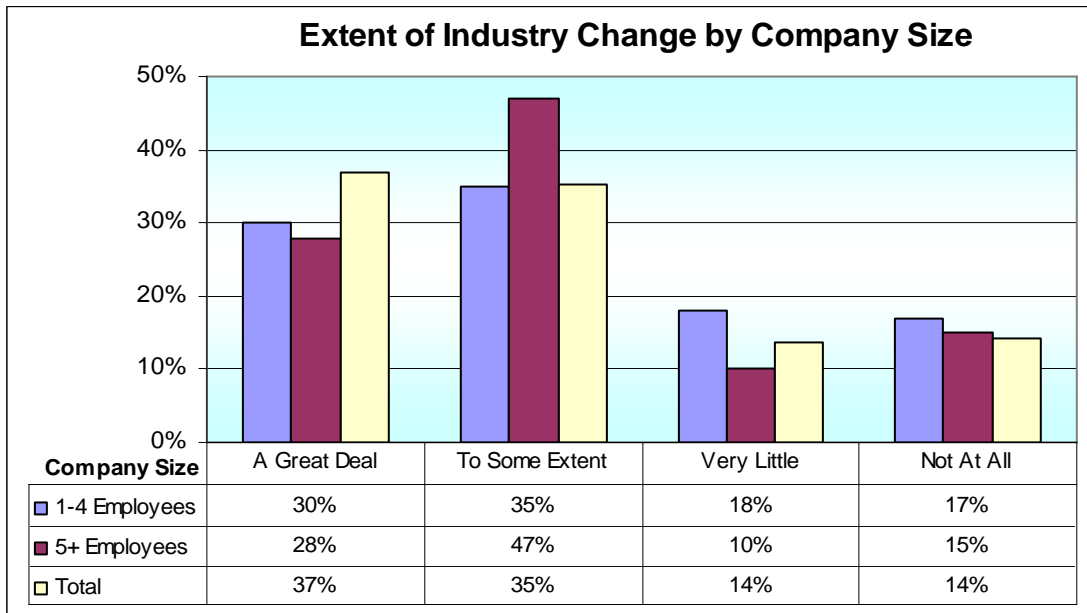
⁷ Responses were similar for sole proprietors and small-medium companies.

Industry Changes



Though most respondents did not see industry changes affecting the skills needed, a majority (72%) thought the industry would change some or a great deal (see Figure 15). Only 14 percent of all respondents felt that the industry would change very little, and 14 percent predicted no change at all.

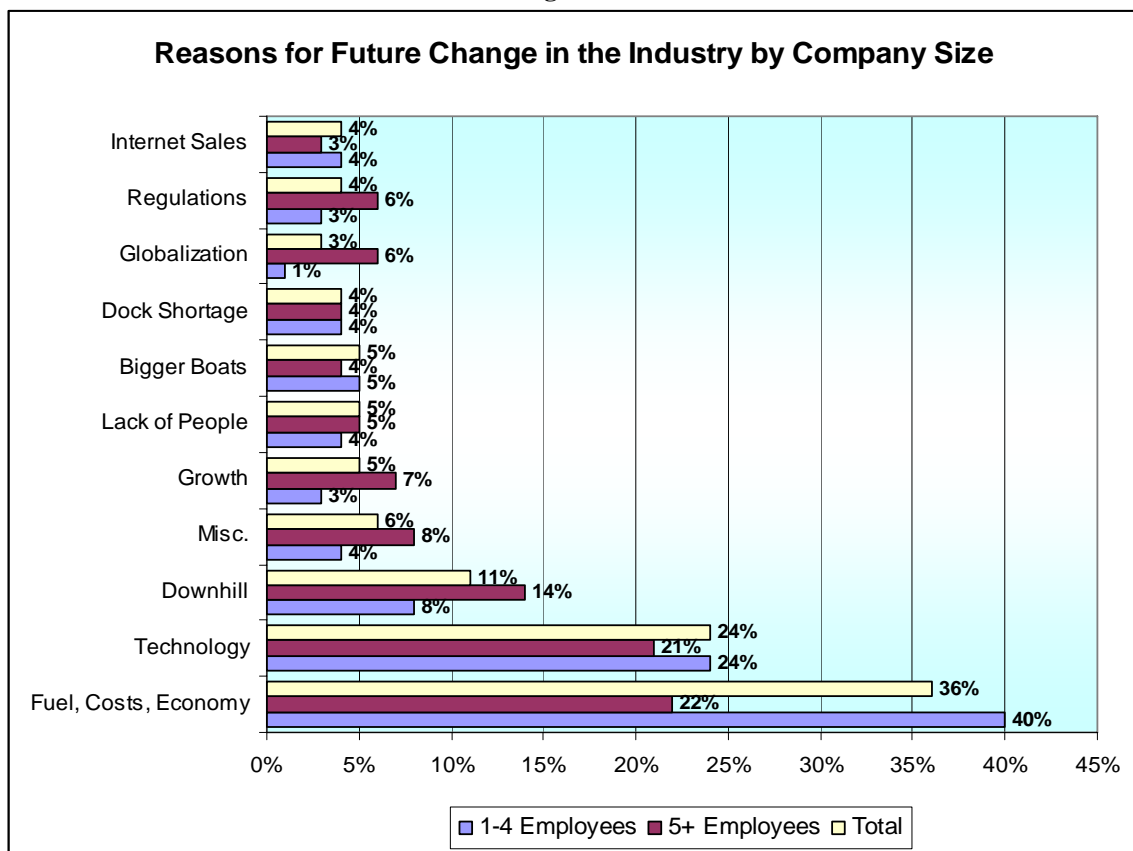
Figure 15



Question: How much do you see the industry changing?

Economic issues, most notably fuel prices, are the main reasons given for change in the industry, according to those who project change (see Figure 16 and Table 3). Since this is a pleasure/recreation-related industry, the marine sector of the economy suffers when there are economic downturns. Technological advances are the second biggest catalyst for change in the marine industry.

Figure 16



Question: In what ways do you see the industry changing?
 Percent responses of those projecting one factor affecting industry change.



Some respondents listed two or more reasons for future industry change, as represented below.

Table 3. Other Reasons for Change

Reasons	Count
Fuel, Costs, and Economy and Technology	12
Technology and Lack of People	8
Lack of People and Growth	8
Lack of People and Dockage	8
Technology, Bigger Boats, and Lack of People	4
Regulations and Internet	4
Bigger Boats and Lack of People	4
Fuel, Costs, and Economy and Bigger Boats	4
Regulations and Declining	4
Regulations and Lack of People	4
Bigger Boats and Growth	4
Technology and Dockage	4
Regulations and Dockage	4
Fuel, Costs, and Economy and Dockage	4
Declining, Bigger Boats, and Technology	4
Technology and Regulations	4

Training

The survey asked respondents to indicate positions for which prior training or certification is preferred (see Figure 17). The results demonstrate that respondents desire training for technical/trade positions, as well as sales positions. These positions are also the most difficult to replace and the most numerous among current employees.

Figure 17

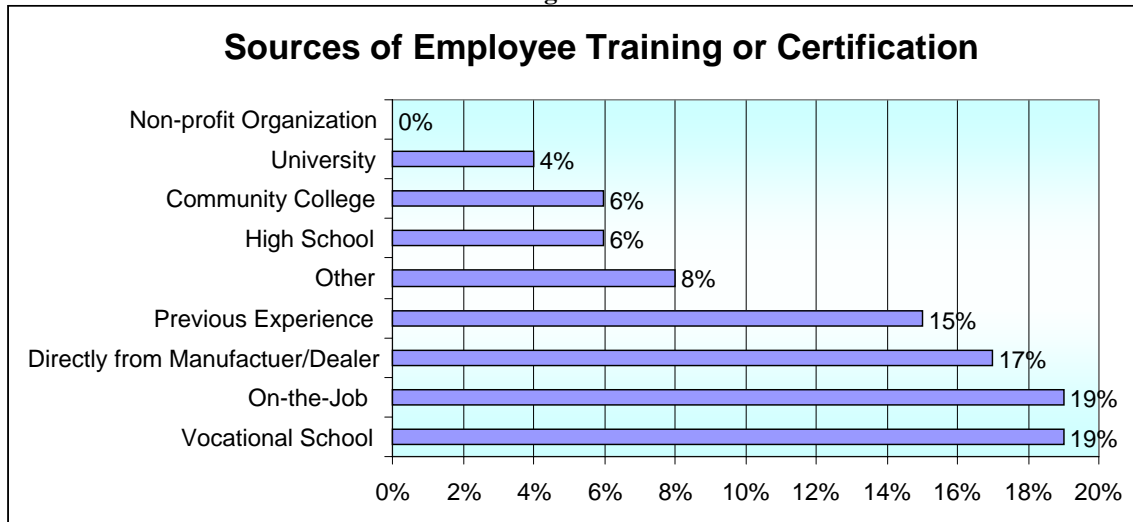


Question: Indicate which positions below you prefer to have training, qualifications or certifications for new hires. Please check ALL that apply.⁸

⁸ The "Other" category is comprised of positions that were not marine-related, as well as positions that did not have enough quantity to merit a separate category, such as divers, captains, and mates.

When asked where their present employees received training, more respondents indicate employees are trained at vocational schools or on-the-job than at some other type school. Manufacturer/dealer training closely followed, along with previous experience (see Figure 18).

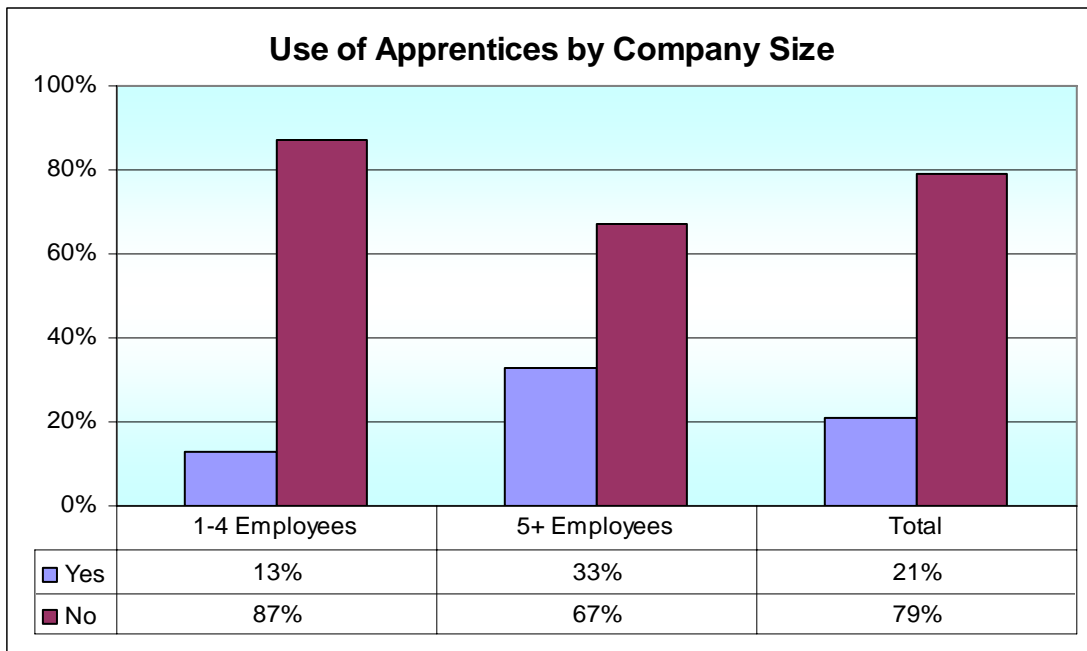
Figure 18



Question: Where did your current employees typically obtain their training or certification prior to being hired? Please check ALL that apply.

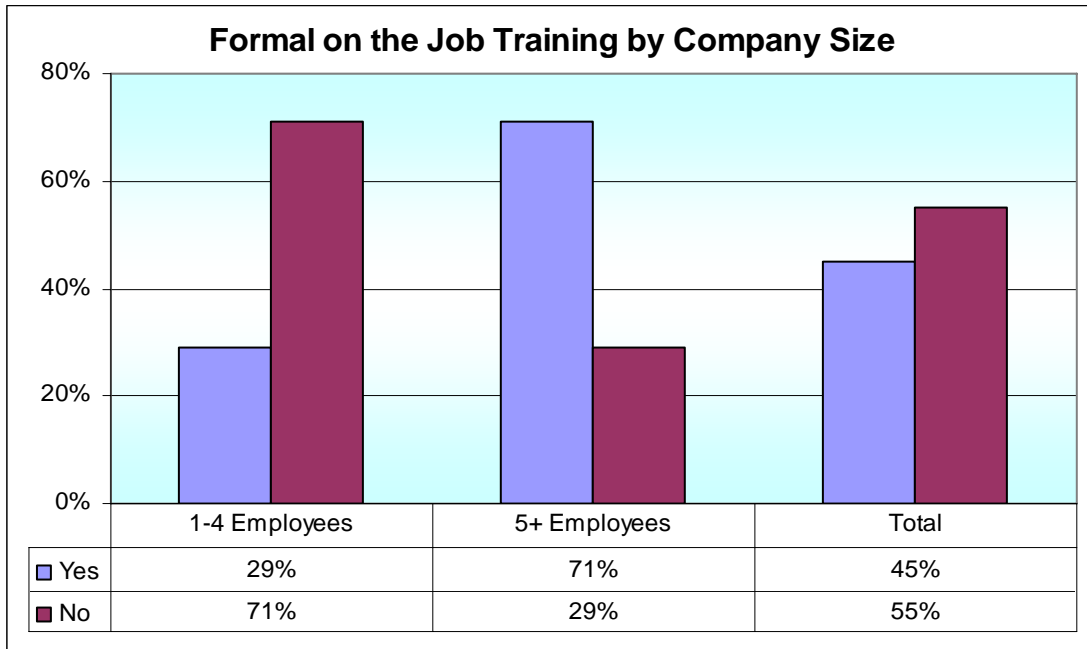
The survey also asked if companies used apprenticeships or formal on-the-job training (see Figures 19 and 20). The majority of the companies (79%) did not use formal apprentices, with only 13 percent of sole proprietors indicating that they used apprentices, and only 29 percent of sole proprietors that they used formal on-the-job training, not unexpected due to the size of these companies. While only a third of the small-medium companies used apprentices, nearly three-quarters (71%) of small-medium companies used formal on-the-job training.

Figure 19



Questions: Do you use apprentices?

Figure 20

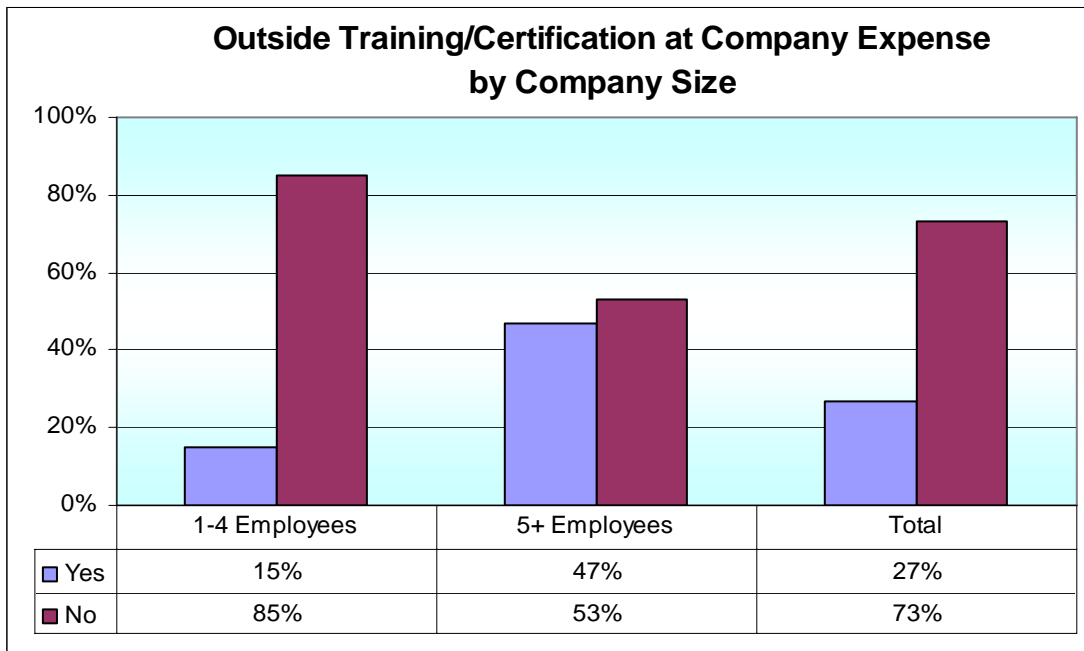


Questions: Do you provide on-the-job training?



Similarly, the majority of the respondents do not send their employees for further training (see Figure 21). While only 15 percent of the sole proprietors send employees for further training, nearly half (47%) of the small-medium companies send employees for training. Despite the willingness of small-medium companies to train employees, a majority (73%) of all survey respondents do not send employees for training.

Figure 21



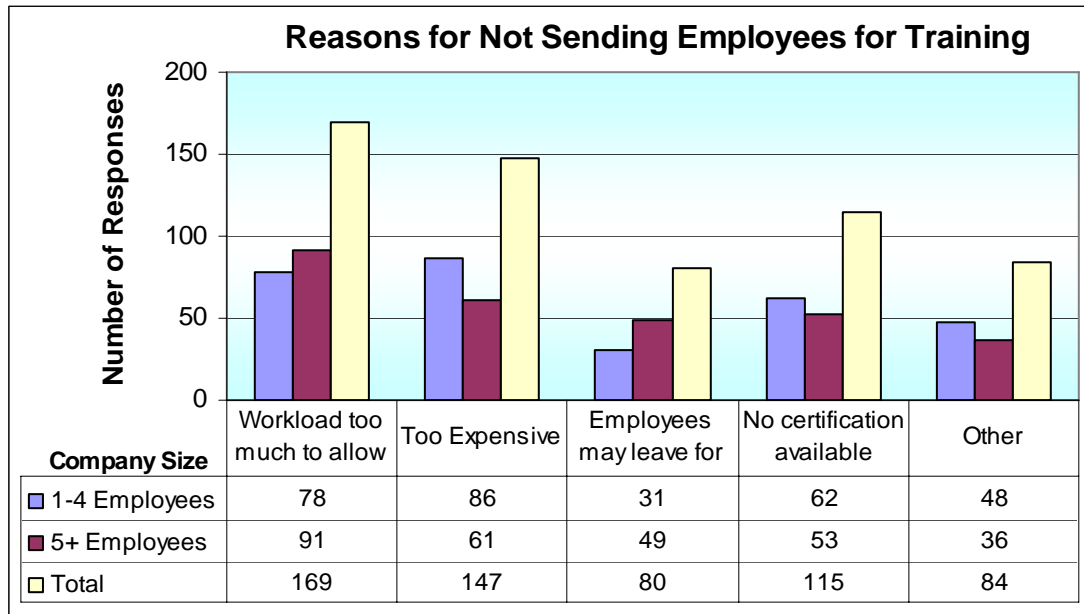
Question: Do you send your employees out for further training or certification at your own expense?⁹

⁹ Responses are scaled up to population by weighting.

Barriers and Training

Regardless of company size, marine businesses agree that cost and workload are major barriers to training (see Figure 22). Sole proprietors do not send employees for training because it is too expensive, followed by a workload that cannot allow absences. Slightly more small-medium companies give workload as the main reason for not sending employees to training, followed by expense. Having a convenient program would help alleviate these cost concerns. This bodes well for a local training program, like the Broward Community College Marine Technology Program.

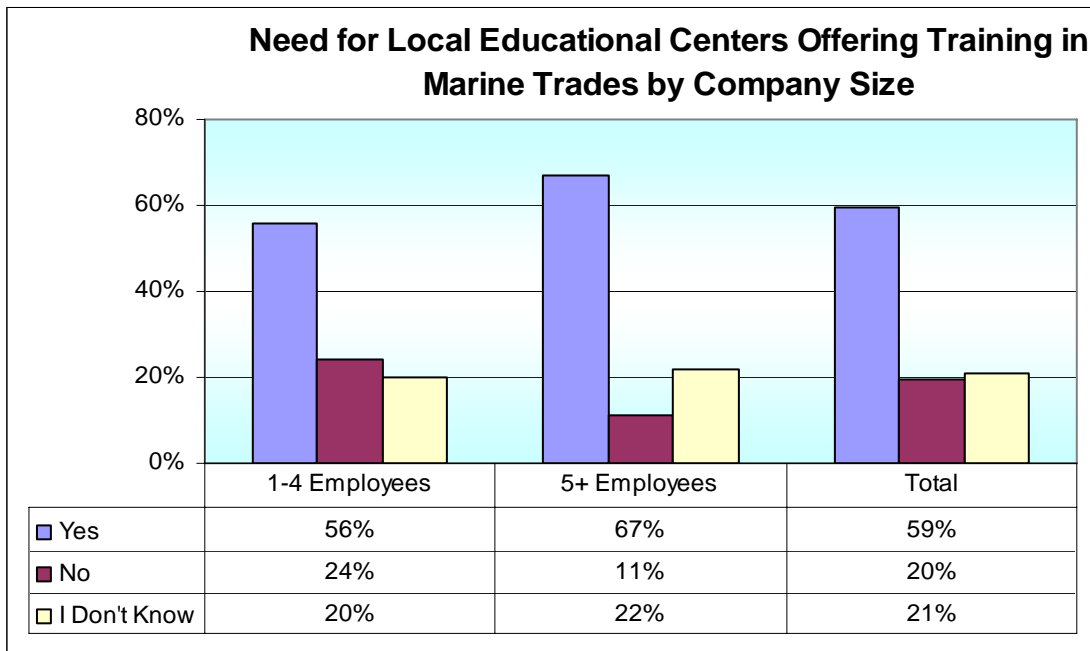
Figure 22



Question: Which of the following are barriers to sending employees out for more training? Please check ALL that apply.

Interestingly, over half of total respondents were aware of local training centers. Moreover, about three-fifths (59%) of those respondents express a need for local educational centers to offer training or certification in marine trade skills (see Figure 23). However, slightly more than a quarter (27%) of respondents presently send employees for further training (see Figure 21).

Figure 23



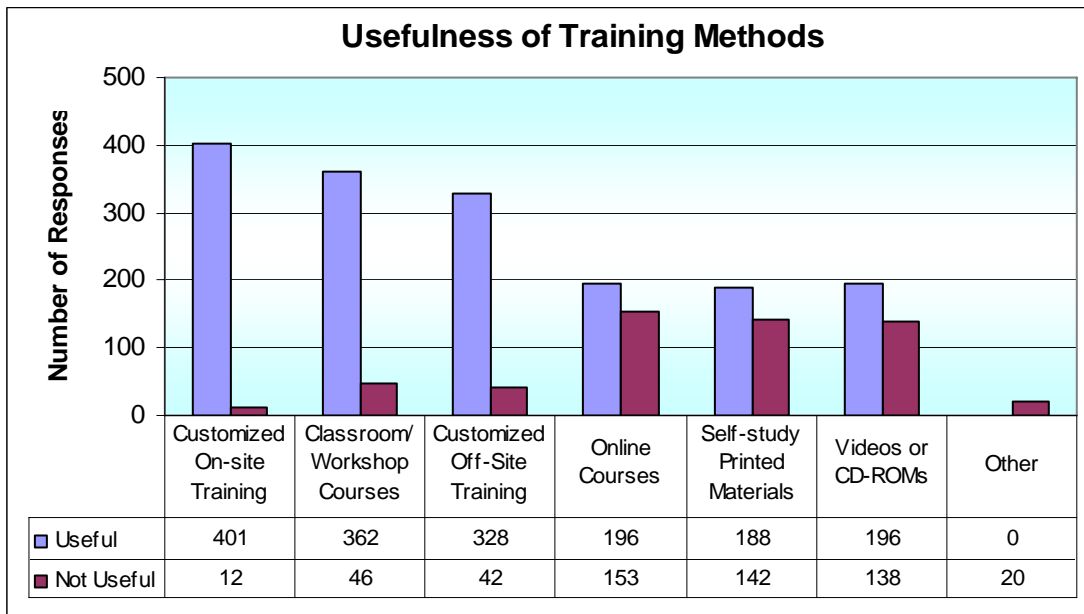
Question: Is there a need for local educational centers to offer training or certification in marine trade skills?¹⁰

¹⁰ Responses are scaled up to population by weighting.



Of those who expressed a need for training centers, most felt that customized on- or off-site training are the most useful, followed by classroom/workshop courses. Methods that were not hands-on oriented are not viewed as very useful (see Figure 24).

Figure 24



Question: How useful do you find the following models of learning for providing training or certification in marine trade skills?

Broward Community College Marine Technology Program

Nearly half (45%) of the total sample indicate an interest in learning more about the developing Broward Community College Marine Technology Program. Of those interested, three-fifths are sole proprietors, and two-fifths are small-medium companies.

Of the total sample, 17 percent of businesses offer career pathways for employees. Of those who offer career pathways, 72 percent are small-medium size businesses, and 28 percent are sole proprietors.

Employ Florida Marketplace

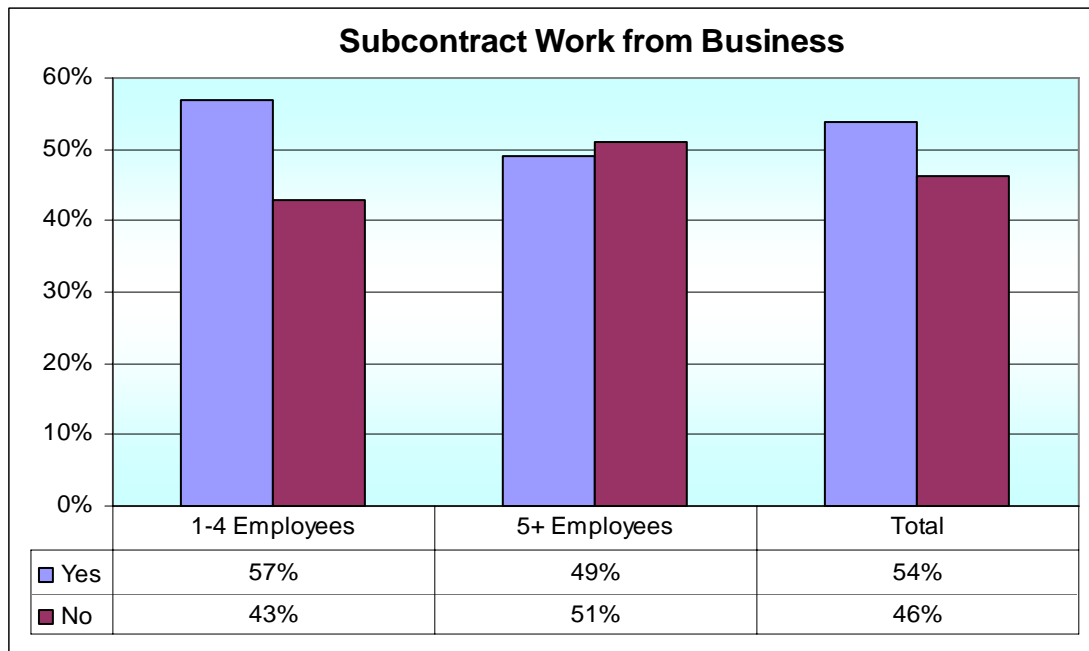
Only about one-fifth (17%) of the total sample is aware of the Employ Florida Marketplace website of WorkForce One (www.wf1broward.com or employflorida.com) that lists job openings at no charge to businesses and enables online job submissions. Of those who know about the website, about half (48%) are sole proprietors and about half (52%) are small-medium companies.



Subcontracting

Over half (54%) of the respondents used subcontractors: 57 percent of sole proprietors use subcontractors, compared to just under half (49%) of small-medium businesses (see Figure 25). More small-medium companies, who may have specialists on staff, do not rely on sub-contractors. This can be explained by the need for sole proprietors to use sub-contractors for specialized tasks and for cost-cutting measures, rather than hiring new employees.

Figure 25

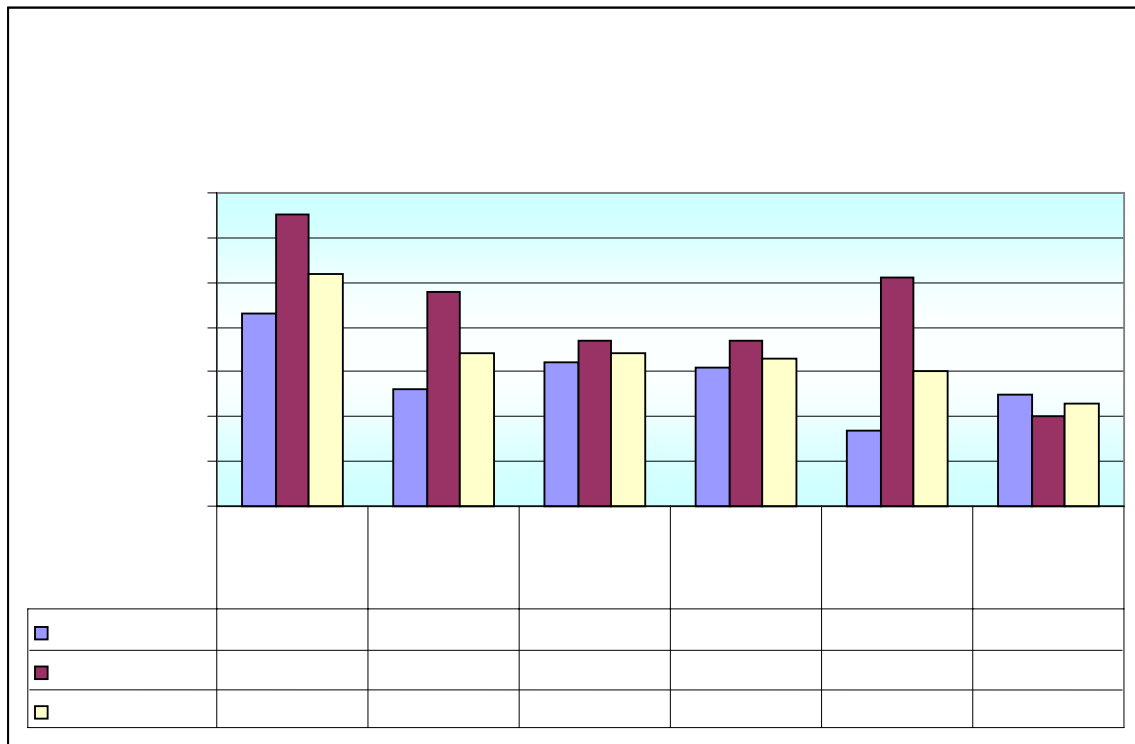


Questions: Do you subcontract work from your business?

Note: Base is only companies that use subcontractors.

Both small-medium and sole proprietors primarily use subcontractors to replace skills lacking in current employees. As companies have trouble finding qualified employees, the lack of expertise within their existing staff forces companies to contract work out to those specializing in certain areas of the marine industry. Companies also subcontract for other reasons, such as lack of specialty work to justify in-house operation, an excessive workload, and seasonality demands. The other responses comprise mostly of reasons that are not workforce or marine related, such as zoning codes and insurance.

Figure 26

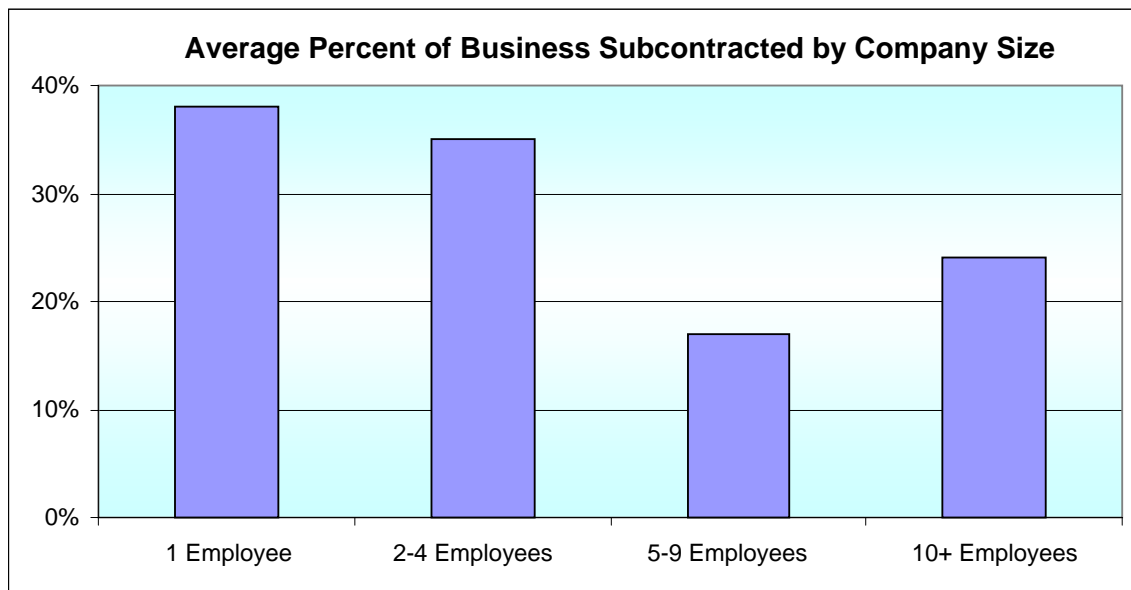


Question: Why is this [do you subcontract work from your business]? Please check all that apply.

Note: Base= Only companies using Subcontractors who provided reasons. Percentages do not add up to 100 percent because question allowed for multiple responses.

On average, companies who use subcontractors do so for 31 percent of their total business, but there are differences between different size companies (see Figure 27). The use of subcontracting vary for each business, depending on needs, with most businesses using subcontractors for an array of tasks. On average, about 37 percent of sole proprietor businesses subcontract, while small-medium companies use subcontractors for 20 percent of their total business.

Figure 27



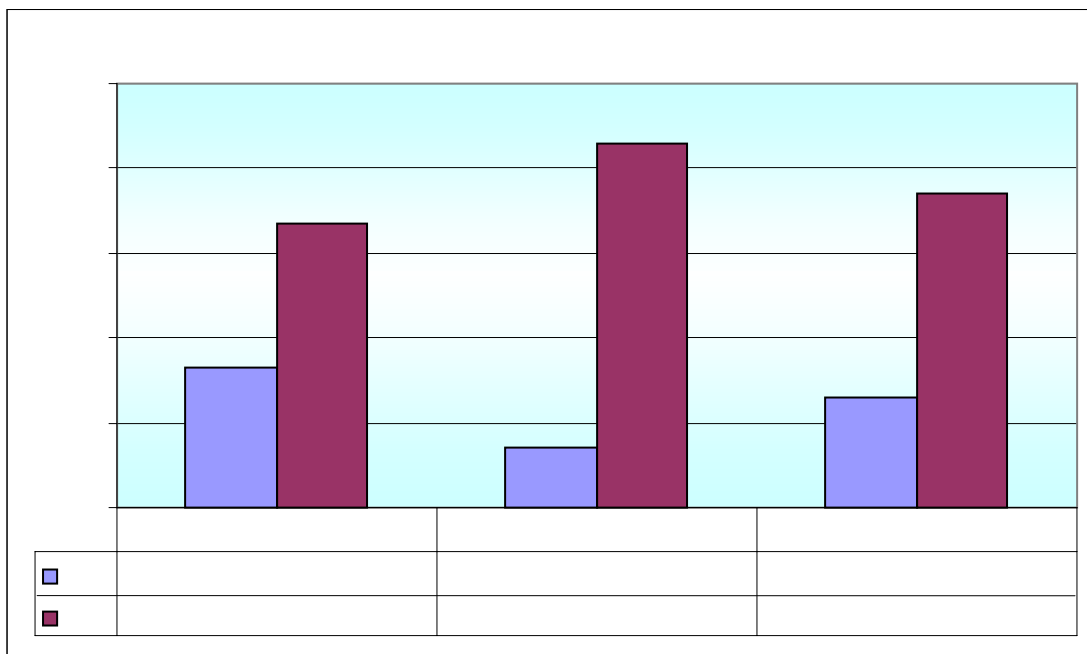
Question: What is your best estimate of the percent of your work that you subcontract?

Note: Base= Companies using Subcontractors only

Self-employed Contractors

A section of the survey was dedicated to self-employed contractors, specializing in a wide range of skills (see Figure 28). Most of the contractors are commissioned by individuals, according to nearly three-quarters (73%) of respondents. About half (53%) indicated that contractors work on their own premises, not at other sites.

Figure 28



Question: Are you a SELF-EMPLOYED CONTRACTOR working in the marine trades?

Only 26 percent of all respondents were independent contractors. We can assume those who did not answer this question were not independent contractors because the question was placed in a section of the survey for self-employed contractors only. Those who responded positively to this question specialized in a range of work, with some engaged in multiple marine-related tasks.



When asked what formal training or certification the contractors had, the respondents answered as follows (see Table 4).

Table 4. Skills that have Contractors Training/ Certification

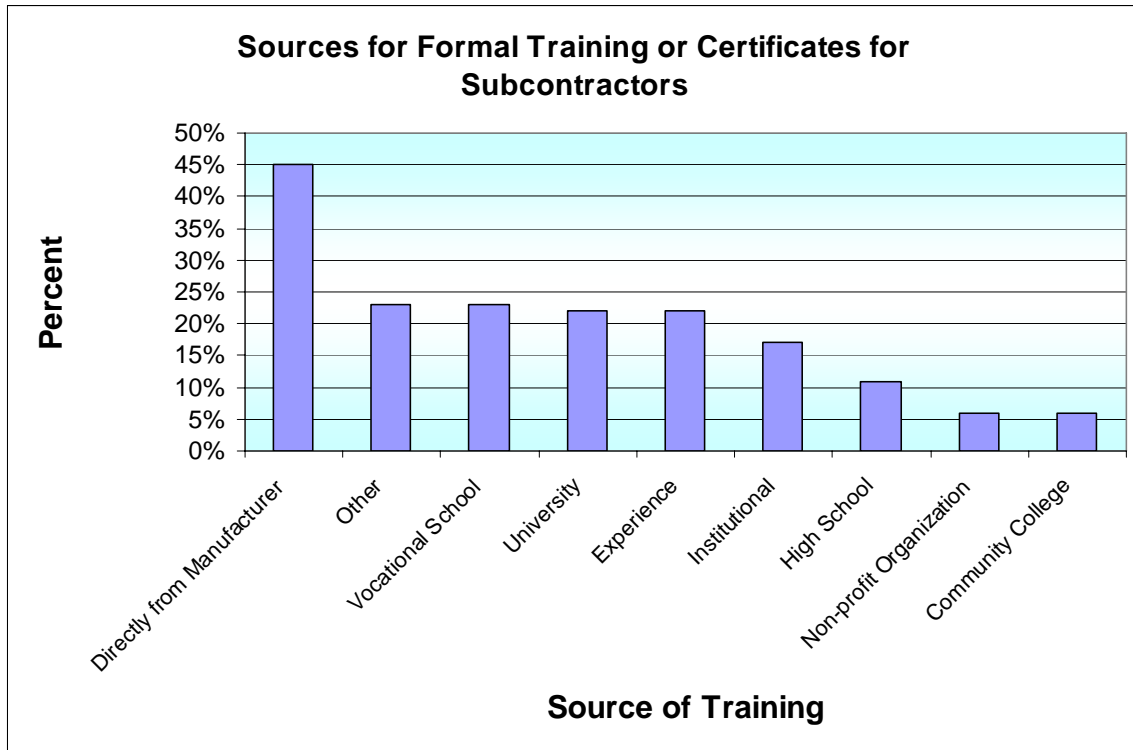
Skill	Number
Sterndrive Technician	19
Detailer/Cleaner	20
Rigger	20
Boat Yard Laborer	23
Inboard Gas Engine Technician	27
Carpenter/Joiner	28
Painter/Varnisher	40
Travel-Lift/Forklift Operator	50
Outboard Technician	50
Fiberglass Technician	51
Boat Systems Technician	51
Welder/Fabricator	54
Electrical Technician	58
Diesel Technician	62
Business/Clerical	70
Miscellaneous	80

Question: Do you have formal training or certificates or required safety training in any of the following skills? Check ALL that apply.

Note: Base = number of self-employed contractors

The majority of contractors are trained directly by the manufacturer. A similar proportion of contractors receive training at vocational or other schools (see Figure 29).

Figure 29



Question: If you have formal training or certificates relating to the service you offer, from where did you obtain them? Check ALL that apply.

Recommendations¹¹

- Continue to pursue regional initiatives as a means for assessing marine trades workforce development needs. Use that information to expand training opportunities for both employed and future marine trades employees.
- Develop internship and apprenticeship programs for marine trades so that students can have hands-on experience and employers can help guide students in training and career pathways.
- Provide local training, such as the Broward Community College Marine Technology Program, to fill the need for local training in the Tri-County area.
- Establish hands-on workshops and classrooms, as well as on- and off-site training activities, to give students a chance to see how the industry truly works.
- Develop programs that will more directly result in the placement of individuals in the marine trades.
- Conduct salary assessments and workforce needs assessments in the future to help recruit trained employees.
- Develop a partnership with the Broward County School Board to help recruit students still in school who are willing to work in trades.
- Promote the marine industry job vacancies through online career assistance websites, such as the Employ Florida Marketplace website (www.employflorida.com), marine job fairs, and recruitment ventures to high

¹¹ Recommendations are based on industry association input as well as findings.

school, community colleges, vocational schools, and universities in the Southeast Florida region.

Conclusion

Through the study, we are able to identify workforce needs of the marine industry in Southeast Florida. The need for trained and qualified employees is not being met, specifically among companies with five or more employees who cannot find skilled labor to fill positions vacated by qualified employees. Regardless of the number of sales positions in the marine industry and the need for experience in these positions, training is highly desirable for technical and trades positions, such as diesel engine technicians and boat systems technicians.

The need for training centers remains high. However, when developing training centers, it is recommended that the courses offered are hands-on workshops or customized on-site or off-site training. Marine business owners are looking for people with experience and personal attributes like honesty and reliability, not necessarily people with classroom skills. Therefore, an internship program would be most beneficial to students and employers, who would most likely hire an intern they can trust to do quality work.

There are benefits to having a marine technology program in Southeast Florida, such as the Broward Community College Marine Technology Program. One is that it can provide cost-effective training for new and current employees to help develop and hone skills that are desperately needed in the industry. Also, with more qualified technicians, there would be less need for sole proprietors to contract work out, resulting in money saved for other expenses and expansion. Broward Community

College's Marine Technology Program holds great promise since there is clearly an interest by the marine industry in a local training center that focuses on technology and mechanical training for marine technicians. This program should help fill the need of the local marine industry for the technicians it needs. While many of the businesses surveyed do not offer career pathways, the influx of reliable and qualified employees could possibly change that, having a positive effect on the region's marine workforce.



Methodology

A mail survey was developed and distributed to a random sample of marine businesses selected by SIC codes provided by Dunn and Bradstreet. The survey and sampling were developed by the Center for Survey Research and Urban Harbors Institute at the University of Massachusetts Boston. Important input was provided by the Marine Industries Association of South Florida, the Marine Industries Association of Palm Beach County, Inc., and the Marine Council. The company sizes ranged from one person, most likely an independent contractor or sole proprietor, to companies with one hundred or more employees. Because of the random sample, the survey results represent the entire population of marine businesses in Southeast Florida.

Before the survey was mailed out, industry briefings were held. Dr. Lenore Alpert of CUES made a presentation on the study at the Marine Industries Association of South Florida's Annual Regional Summit Meeting in November 2007. She also briefed members at meetings of the three marine trade associations in January of 2008. At these meetings, the purpose and scope of the survey were explained, as well as the importance of participation by the marine industry businesses. All three trade associations supported the project and sent several e-mails to their association members in January, February and March of 2008 urging member participation.

The project was also publicized in the Marine Industry Association's monthly newsletter in February and March. Once the survey was finalized with the help of the industry associations, two waves of surveys were mailed out in 2008, one in late February (800 surveys) and one in March (365 surveys). CUES began a vigorous phone follow-up campaign in the following month. Calling continued through April of 2008, and contact

was attempted with every business in the sample that had not already returned a completed survey by mail.

The total response rate for the survey was 29 percent (233/816). This response rate of 29 percent exceeds the response rate of local marine trade associations who administer surveys to their members.

The original sample size of 1,165 was reduced to 997 because of incorrect or invalid or invalid addresses (120), duplicates (21) and incorrect industrial classification (27). Telephone follow-ups to non-respondents and internet searches identified an additional 181 members of the sample that had gone out of business or did not appear to have telephone listings. As a result, the effective sample size was reduced to 816.¹²

The response rate to the survey was higher from sole proprietors (who had from 1 to 4 employees) than from small-medium businesses with 5 or more employees. The small-medium respondents included nine with 50 or more employees and two with 100 or more employees.

Table 5. Response Rates By Size of Business

Business Type	No. Employees	Surveys	Responses	Response Rate
Sole Proprietors	1-4	405	106	26.2%
Small-Medium	5+	411	127	30.9%
Total		816	233	28.6%

¹² Of the 233 responses to the survey, 95 were received by mail, 124 were obtained by telephone, 13 were received by fax and one response was returned in an email.

Table 6 shows the distribution of marine population by company size.

Table 6. Distribution of Sample by Company Size

Company Size	Sample		Returned	
	Sent	% of Total Sample	# returned	% returned
1	218	19%	33	14%
2 to 4	437	37%	73	31%
5 to 9	240	21%	50	22%
10+	270	23%	77	33%
Total	1,165	100%	233	100%

Table 7. Distribution of Sample by Sole Proprietors and Small-Medium Companies

Company Size	Deliverable Surveys	Returned Surveys
Sole Proprietors	49.6% (405)	45% (106)
Small-Medium	50.4 % (411)	55% (127)
Total	100% (816)	100% (233)

Note: Delivered surveys exclude wrong numbers, disconnects, out of business, and fax numbers.

Of the returned surveys, marine companies who responded were split by size of company (sole proprietors and small-medium), with 45 percent of the companies being sole proprietors (4 or less employees) and 55 percent being small-medium companies (5 or more employees) (see Table 7). The small-medium companies included nine companies with over 50 employees, two of which had 100 or more employees. Unfortunately, there were not enough respondents in this group to permit a separate analysis of these nine larger companies, so they are grouped with the small to medium companies in the following sections of this report. The total number of deliverable surveys was 816, equally split among sole proprietors and small-medium companies.

Sampling Design

This study was designed to investigate marine businesses within the Tri-County area of Broward, Miami-Dade and Palm Beach counties in Southeast Florida. The marine industries were defined as any industry with one of their three primary Standard Industry Classification (SIC) codes being among the 66 codes identified as belonging or likely to belong to a set of marine codes. These codes are listed in Table 8. In addition, any company with one of seven other specific SIC codes that also had any of the words “marine,” “boat” or “yacht” in the company name were included. These codes are also listed in Table 8. In order to capture the broadest scope of marine industry businesses, eight-digit SIC codes were used. This provided the widest scope of marine businesses, even if they were included in a non-marine SIC category. Representatives of local marine associations provided input into the SIC selection process. Databases maintained by Dunn and Bradstreet were used as the sampling frame. Within this designated three-county area, 1,925 companies were found to match these selection criteria. Of these, 41 companies were identified through the seven additional codes.



Table 8 SIC Codes

Code	Category	Code	Category
16290100	Dams, waterways, docks, and other marine construction	39999909	Dock equipment and supplies, industrial
16290104	Dock construction	44930000	Marinas
17999909	Dock equipment installation, industrial	44939901	Boat yards, storage and incidental repair
23920101	Boat cushions	44939902	Marine basins
23949902	Canvas boat seats	44939903	Yacht basins
23949903	Convertible tops, canvas or boat: from purchased materials	44990102	Marine surveyors
24991600	Fencing, docks, and other outdoor wood structural products	44990201	Boat cleaning
24991603	Floating docks, wood	50880100	Marine crafts and supplies
34489901	Docks, prefabricated metal	50880102	Marine propulsion machinery and equipment
35190100	Diesel, semi-diesel, or dual-fuel engines, including marine	50880103	Marine supplies
35190103	Marine engines	55419902	Marine service station
35190201	Controls, remote, for boats	55510000	Boat dealers
35199904	Outboard motors	55510100	Motor boat dealers
35310200	Marine related equipment	55510101	Inboard boats
35360101	Boat lifts	55510102	Inboard outdrive boats
35370103	Cradles, boat	55510104	Outboard boats
35619902	Hydrojet marine engine units	55510202	Inflatable boats
35999913	Propellers, ship and boat: machined	55510300	Sailboats and equipment
36479903	Boat and ship lighting fixtures	55510301	Sailboats, auxiliary (powered)
36630106	Marine radio communications equipment	55510302	Sailboats, unpowered
36690105	Sirens, electric: vehicle, marine, industrial, and air raid	55510400	Marine supplies and equipment
36690202	Marine horns, electric	55510401	Marine supplies, nec
36999909	Outboard motors, electric	55510402	Outboard motors
37319904	Marine rigging	57319904	Marine radios and radar equipment
37320000	Boatbuilding and repairing	73891705	Yacht brokers
37320100	Motorized boat, building and repairing	76990600	Nautical repair services
37320102	Houseboats, building and repairing	76990601	Boat repair
37320105	Motorboats, inboard or outboard: building and repairing	76990602	Marine engine repair
37320200	Non-motorized boat, building and repairing	76990603	Marine propeller repair
37320207	Lifeboats, building and repairing	17110405	SEARCH "marine," "boat," "yacht"
37320208	Rowboats, building and repairing		
37320209	Sailboats, building and repairing	76990000	SEARCH "marine," "boat," "yacht"
37329901	Boat kits, not models	17310000	SEARCH "marine," "boat," "yacht"
37329902	Boats, fiberglass: building and repairing	23940000	SEARCH "marine," "boat," "yacht"
37329903	Boats, rigid: plastics	52110102	SEARCH "marine," "boat," "yacht"
37329905	Yachts, building and repairing	17529903	SEARCH "marine," "boat," "yacht"
37990102	Boat trailers	17110405	SEARCH "marine," "boat," "yacht"

These companies were divided into two strata, depending on the size of the company. Samples were then drawn from within each stratum. The following is the resulting sample:

- **1-4 person employee companies:**
655 of 1332 companies selected into the sample, sampling fraction = 49.2%
- **5 or more employee companies:**
510 of 593 companies selected, sampling fraction = 86.0%

Overall, a total of 1,165 companies were selected in the sample with an over-sampling of small-medium companies (i.e., those with at least 5 employees). Because of this sampling strategy, weights must be applied when analyzing data from this study in order to account for differing probabilities of selection and potentially different survey response rates across the strata (see Table 9). These response rates and weights are as follows:

Table 9. Weights of Sample by Company Size

Stratum	Response Rate	Weight
1-4 employees	26.2%	7.9061
5 or more employees	30.90%	3.7630

The overall response rate across all strata was computed as 28.38%. The above weights were used in the following analyses that combine strata.¹³ The random sample was used to extrapolate the total of marine population businesses in the Tri-County area. Responses were weighted to represent this population and reflect the total industry’s response. Where “respondents” report opinions, it is therefore applicable to the entire marine industry in this region and means “population.”

¹³ As an analytic note, accurate estimates of variances and standard errors using these data can only be computed using a statistical package that can account for complex sample designs. Such packages include STATA, SPSS with Complex Samples, and SAS with SUDAAN.

Analysis

The survey was divided into a section for regular marine businesses and an additional section for self-employed independent contractors. The first section's objective was to determine the types of skills that companies need, how many employees they had, what factors will affect the marine industry in the future, and the need for formal training centers. The section on self-employed contractors focused on their skills and workload.

Because many marine businesses are involved in multiple types of business, such as sales and service, the survey asked respondents for their primary product or service, which was used in the analysis. However, in many cases, such as the types of training and skills needed, there are multiple answers to the questions.

As a result of initial phone contacts and subsequent analysis, the population was divided into two groups, based on size of business. Responses differed, depending on whether it was a marine business with less than five or more than five employees. The analysis throughout this report is based on these categories of number of employees. Sole proprietors consist of companies with four or less employees, and small-medium businesses are those with five or more employees.


Also, the survey had several questions which required a verbatim response. The survey asked respondents who indicated an "other" response to specify, adding to the verbatim responses. However, not all respondents specified when they answered "other." The verbatim responses to these questions were grouped into categories, such as technological changes and economic changes. The verbatim answers are located in Appendix C. Except for the location of businesses, all responses are weighted, per the

sampling design, to reflect responses of the total population of marine businesses in the region.



Appendix A: Letters and Survey

The same letter was sent out on February 25, 2008.



FAU
CENTER FOR URBAN &
ENVIRONMENTAL SOLUTIONS
Florida Atlantic University


Center for Urban & Environmental Solutions
111 E. Las Olas Boulevard, AT 709
Fort Lauderdale, FL 33301
tel: 954.762.5255
fax: 954.762.5666
www.cuesfau.org


February 15, 2008


Subject: Tri-County Marine Workforce Study

Dear Marine Business Owner:


Do you find it difficult to find good help for your company? Are you concerned about your workforce needs? Then help us help you! You have been selected as part of a random sample of marine business owners in the tri-county area to help assess and determine our marine industry's workforce needs over the next three years. **The purpose of this study is to help the people who do the training and workforce preparation give you the workers you need, when you need them.** The South Florida region relies on retaining and expanding a productive marine workforce so that we remain a viable economic force.

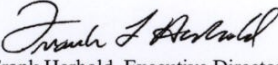

The Marine Industries Association of South Florida (MIASF), the Marine Industries Association of Palm Beach County, and the Marine Council are partnering to assess the health of the region's marine workforce. The attached survey is being processed by Florida Atlantic University's Center for Urban and Environmental Solutions (CUES) under grant funding from our local workforce agency, **Workforce One under the Broward Workforce Development Board.**


The survey will take about 10-15 minutes of your valuable time to complete. Once it is filled in, please mail the pre-stamped envelope containing the survey, or fax it to 954-762-5666. Please return the survey by February 29, 2008. If none of your business at this location can be considered to be serving the Marine Industry, you have received this questionnaire in error and should return this letter with a note of who your business serves.



The results of the survey are confidential. Information will be presented in the form of aggregate totals or averages, not identified with the individual responses of any one person or business. Your participation is voluntary. We will identify respondents only for coding purposes to ensure accurate representation of different types of businesses. Taking part in the survey signals your agreement to participate.

Your cooperation and response are **very** important since your answers represent other similar businesses. Your response is critical to helping our industry plan for its future. We will share a summary of our survey results with the membership of our associations. Thank you very much for your participation.

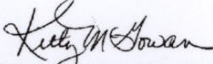


Sincerely,



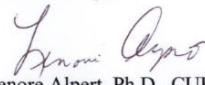
Frank Herhold, Executive Director
Marine Industries Association of South Florida



Amy Tolderlund, President
Marine Industries Association of Palm
Beach County, Inc.



Kitty McGowan, Executive Director
The Marine Council



Lenore Alpert, Ph.D., CUES
Assistant Director of Research

CURRENT AND FUTURE NEEDS OF THE TRI-COUNTY MARINE WORKFORCE - Please Return By **APRIL 4TH**
 A Survey Conducted By: Florida Atlantic University CUES and the University of Massachusetts at Boston-Spring 2008

Company Name _____

SECTION A: COMPANY OVERVIEW

1. How many years has your firm been in business at this location? _____ (Number of Years)

2. At this location, what marine products or services do you provide?

Please check ALL that apply.

- | | |
|--|---|
| <input type="checkbox"/> ₁ Boatyard | <input type="checkbox"/> ₁₀ Rigging/Installations |
| <input type="checkbox"/> ₂ Boat Repair/Service | <input type="checkbox"/> ₁₁ Brokerage/Yacht Sales |
| <input type="checkbox"/> ₃ Boat Builder | <input type="checkbox"/> ₁₂ Dealer: New Boats |
| <input type="checkbox"/> ₄ Canvas Maker/Repair (interior or exterior) | <input type="checkbox"/> ₁₃ Engine Sales |
| <input type="checkbox"/> ₅ Boating Equipment Manufacturer | <input type="checkbox"/> ₁₄ Marine Electronics |
| <input type="checkbox"/> ₆ Marine Construction | <input type="checkbox"/> ₁₅ Other (please specify) _____ |
| <input type="checkbox"/> ₇ Marina | |
| <input type="checkbox"/> ₈ Surveyors | |
| <input type="checkbox"/> ₉ Boating Equipment Retail | |

3. Which of these would you say is your primary product or service at this location?

4. As skilled employees leave or retire, do you find it difficult to find new employees locally with the skills to replace them?

- ₁ Yes ₂ No

5. What are the top THREE most important employee skills (or training) at this location today?

- #1 _____
- #2 _____
- #3 _____

SECTION B: FUTURE TRAINING NEEDS

6a. In general, how much do you expect the marine industry to change in the future?

- ₁ A great deal
 ₂ To some extent
 ₃ Very little
 ₄ Not at all → GO TO QUESTION 8.

6b. In what ways do you see the industry changing?

6c. Do you expect these changes to ultimately change the mix of skills or training required of your employees?

- ₁ Yes ₂ No

7. What are the top THREE most important skills (or training) for the marine industry that will be needed in the future?

- #1 _____ #2 _____
- #3 _____

NOT including subcontractors, please give your best estimate of the number of Year-Round employees (either full- or part-time) at this location whose PRIMARY job can be described by the title below.
Please count each employee in ONLY one job title (depending on his/her main duty).

	8. Please estimate the number of current employees.		9. Please estimate the number of year round people you are looking to hire with the following primary skills.		10. Of the employees that you require, rank the three most difficult positions to fill, with 1 being most difficult.
	# Full-time Employees	# Part-time Employees	# Current Positions	# Future Positions	
Diesel Technician					Rank top 3 positions only <input type="checkbox"/> 1
Inboard Gas Engine Technician					<input type="checkbox"/> 1
Outboard Technician					<input type="checkbox"/> 1
Sterndrive Technician					<input type="checkbox"/> 1
Electrical Technician					<input type="checkbox"/> 1
Rigger					<input type="checkbox"/> 1
Painter/Varnisher					<input type="checkbox"/> 1
Fiberglass Technician					<input type="checkbox"/> 1
Carpenter/Joiner					<input type="checkbox"/> 1
Boat Systems Technician (plumbing, hydraulics)					<input type="checkbox"/> 1
Welder/Fabricator					<input type="checkbox"/> 1
Boat Yard Laborer					<input type="checkbox"/> 1
Travel-lift/Forklift Operator					<input type="checkbox"/> 1
Detailer/Cleaner					<input type="checkbox"/> 1
Dock Master					<input type="checkbox"/> 1
Dock/Gas Dock Attendant					<input type="checkbox"/> 1
Business/Clerical					<input type="checkbox"/> 1
Sales Staff					<input type="checkbox"/> 1
Other (please specify)					<input type="checkbox"/> 1
Employees per County					
Broward					
Miami-Dade					
Palm Beach					

11. Indicate which positions below you prefer to have training, qualifications or certifications for new hires. Please check ALL that apply.

- | | |
|---|--|
| <input type="checkbox"/> ₁ Diesel Technician | <input type="checkbox"/> ₁₁ Welder/Fabricator |
| <input type="checkbox"/> ₂ Inboard Gas Engine Technician | <input type="checkbox"/> ₁₂ Boat Yard Laborer |
| <input type="checkbox"/> ₃ Outboard Technician | <input type="checkbox"/> ₁₃ Travel-lift/Forklift Operator |
| <input type="checkbox"/> ₄ Sterndrive Technician | <input type="checkbox"/> ₁₄ Detailer/Cleaner |
| <input type="checkbox"/> ₅ Electrical Technician | <input type="checkbox"/> ₁₅ Dock Master |
| <input type="checkbox"/> ₆ Rigger | <input type="checkbox"/> ₁₆ Dock/Gas Dock Attendant |
| <input type="checkbox"/> ₇ Painter/Varnisher | <input type="checkbox"/> ₁₇ Business/Clerical |
| <input type="checkbox"/> ₈ Fiberglass Technician | <input type="checkbox"/> ₁₈ Sales Staff |
| <input type="checkbox"/> ₉ Carpenter/Joiner | <input type="checkbox"/> ₁₉ Other (please specify) _____ |
| <input type="checkbox"/> ₁₀ Boat Systems Technician (plumbing, hydraulics) | |

12. Where did your current employees typically obtain their training or certification prior to being hired? Please check ALL that apply.

- | | |
|---|--|
| <input type="checkbox"/> ₁ Directly from Manufacturer/Dealer | <input type="checkbox"/> ₅ Vocational School |
| <input type="checkbox"/> ₂ Non-profit Organization | <input type="checkbox"/> ₆ High School |
| <input type="checkbox"/> ₃ University | <input type="checkbox"/> ₇ Other (please specify) _____ |
| <input type="checkbox"/> ₄ Community College | |

13. Have you used apprentices?

- ₁ Yes →
- ₂ No

13a. Please describe which types of apprentices you used.

14. Do you provide formal on-the-job training?

- ₁ Yes →
- ₂ No

14a. Please describe what types of on-the-job training you offer.

15. Do you send your employees out for further training or certification at your own expense?

- ₁ Yes
- ₂ No →

15a. Which of the following are barriers to sending employees out for more training? Please check ALL that apply.

₁ Too expensive

₂ Workload too much to allow absence

₃ Employees may leave for better job

₄ No certification available

₅ Other (please specify) _____

16. Are you aware of any local educational centers that offer training or certification in various marine trade skills?

₁ Yes ₂ No → GO TO QUESTION 17a.

17. Is there a need for local educational centers to offer training or certification in marine trade skills?

₁ Yes →
₂ No
₃ Don't know

17a. How useful do you find the following models of learning for providing training or certification in marine trade skills?

	Very useful	Somewhat useful	Not very useful	Not useful at all
a. Classroom/Workshop courses	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b. Customized on-site training	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c. Customized off-site training	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d. Online courses	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e. Self-study printed materials	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f. Videos or CD-ROMs	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
g. Other (please specify) _____	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

18. Would you like to receive information about the newly developed Broward Community College Marine Technology Program (BCC)?

₁ Yes →
₂ No

18a. Please list your email address or phone number so that BCC can send you information about its new program.

19. Employ Florida Marketplace of Workforce One (www.wf1broward.com or employflorida.com) lists job openings at no charge and enables online job submissions. Have you heard of this website before?

₁ Yes ₂ No

20. Does your business have career pathways for employees so they can grow into other positions in your company?

₁ Yes →
₂ No

20a. Workforce One would like to contact you to discuss these career pathways. Please list your email address or phone number so that they can contact you.

SECTION C: SUBCONTRACTING

21. Do you subcontract work from your business?

₁ Yes →

₂ No



GO TO QUESTION 26.

21a. Why is this? Please check ALL that apply.

- ₁ Excessive workload
- ₂ Lack of employee expertise
- ₃ Seasonality of business
- ₄ Not enough volume for in-house operation
- ₅ To cut costs
- ₆ Other (please specify) _____

22. What is your best estimate of the percent of your work that you subcontract? _____%

23. Do you allow the following to use subcontractors?

	Yes	No	Not Applicable
a. Customers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₂
b. Boaters	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₂
c. Tenants	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₂
d. Slipholders	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₂

24. What is your best estimate of the number of DIFFERENT subcontractors that enter your facility per year? _____(Number)

25. What types of jobs are the subcontractors hired to do?

SECTION D: SELF-EMPLOYED CONTRACTOR

26. Are you a SELF-EMPLOYED CONTRACTOR working in the marine trades?

₁ Yes

₂ No

→ IF NO, GO TO QUESTION 33.

27. Please describe the types of contract work in which you specialize.

28. Do you have formal training or certificates or required safety training in any of the following skills? Check ALL that apply.

- | | |
|---|---|
| <input type="checkbox"/> ₁ Diesel Technician | <input type="checkbox"/> ₁₀ Boat Systems Technician (plumbing, hydraulics) |
| <input type="checkbox"/> ₂ Inboard Gas Engine Technician | <input type="checkbox"/> ₁₁ Welder/Fabricator |
| <input type="checkbox"/> ₃ Outboard Technician | <input type="checkbox"/> ₁₂ Boat Yard Laborer |
| <input type="checkbox"/> ₄ Sterndrive Technician | <input type="checkbox"/> ₁₃ Travel-lift/Forklift Operator |
| <input type="checkbox"/> ₅ Electrical Technician | <input type="checkbox"/> ₁₄ Detailer/Cleaner |
| <input type="checkbox"/> ₆ Rigger | <input type="checkbox"/> ₁₅ Business/Clerical |
| <input type="checkbox"/> ₇ Painter/Varnisher | <input type="checkbox"/> ₁₆ Other (please specify) _____ |
| <input type="checkbox"/> ₈ Fiberglass Technician | |
| <input type="checkbox"/> ₉ Carpenter/Joiner | |

29. If you have formal training or certificates relating to the services you offer, from where did you obtain them? Check ALL that apply.

- ₁ Directly from Manufacturer/Dealer
₂ Non-profit Organization
₃ University
₄ Community College
₅ Vocational School
₆ High School
₇ Other (please specify) _____

30. Do you PRIMARILY work on your own premises or at other sites?

- ₁ Own premises ₂ At other sites

31. Are you PRIMARILY subcontracted by other marine industry businesses or do you work for private individuals? Please check ONLY ONE.

- ₁ Subcontracted by other businesses ₂ Work for individuals

32. How many businesses subcontract with you in a typical year? _____ (Number)

33. If you would like to receive a copy of the survey results, please write your email address here. _____

34. Additional Comments:

THANK YOU FOR TAKING YOUR VALUABLE TIME TO RESPOND TO THIS IMPORTANT SURVEY OF THE WORKFORCE NEEDS OF YOUR MARINE INDUSTRY.

Please return your completed survey to
Dr. Lenore Alpert, FAU CUES, 111 E. Las Olas Blvd., AT 709
Ft. Lauderdale, FL 33301

or
fax it to 954-762-5666 or e-mail to mmille20@fau.edu

If you have any questions, please call Lenore Alpert at 954-762-5268.

Appendix B: Sample of Marine Association E-mail

Dear Member:

The industry is concerned about having adequate numbers of qualified workers, both now and in the future. If you have just received a survey that was sent out by Florida Atlantic University, please take the 10 minutes to complete and return it. Your input and opinions are **crucial** to the Tri-County area marine workforce. The Marine Industries Association of South Florida, the Marine Industries Association of Palm Beach County, and the Marine Council in Miami-Dade County are partnering with Workforce One in this study of workforce needs.