

Establishment Survey in the Food and Beverage Sector in Honduras

Full Report

Lucy Cutting and Lauren Robertson

April 2022



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Recognitions

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Introduction

The American Institutes for Research (AIR),¹ funded by the US Department of Labor Bureau of International Labor Affairs, is implementing the project *Labor Market Supply and Demand in El Salvador, Guatemala, and Honduras: Leveraging Data to Build an Efficient Labor Market*. The objective of this project is to provide technical assistance to El Salvador, Guatemala, and Honduras to improve labor market efficiency and performance by assisting these countries to develop labor market information (LMI) systems that publish reliable, comprehensive, and current LMI in user-friendly formats. It also seeks to create local capacities in the use of LMI. One of the main components of this project is to facilitate the creation of a pilot establishment (Appendix E.I) survey for each country that captures labor demand data in a high-growth economic sector.

This report focuses on the establishment survey findings from Honduras. In collaboration with the National Association of Industrialists (*Asociación Nacional de Industriales*) (ANDI) and the Honduran Council of Private Enterprise (*Consejo Hondureño de la Empresa Privada*) (COHEP), the AIR team conducted a pilot telephone survey of establishments² between July and December 2021 in the food and beverage manufacturing (Appendix E.II) sector.

What is an Establishment Survey?

An establishment survey collects data to generate and disseminate LMI related to employment characteristics that are in demand in a country's chosen sector.

The AIR team implemented standardized methodologies and international best practices to collect information that



Characterizes the labor demand of the primary positions in the chosen sector (e.g., educational training, requirements, competencies);



Determines the number of current hires as well as the future demand for jobs in the chosen sector; and



Identifies the current and medium-term training needs of the chosen sector.

1. IMPAQ International LLC, the implementing entity on past LMI establishments surveys, was acquired by AIR in May 2020, formerly operated as a wholly owned subsidiary of AIR in 2021, and as of January 1, 2022, is now AIR.

2. The survey was titled the Food and Beverage Sector Survey in Honduras 2021 (*la Encuesta de Establecimientos en el Sector de Alimentos y Bebidas (ENESAB) en Honduras 2021*).

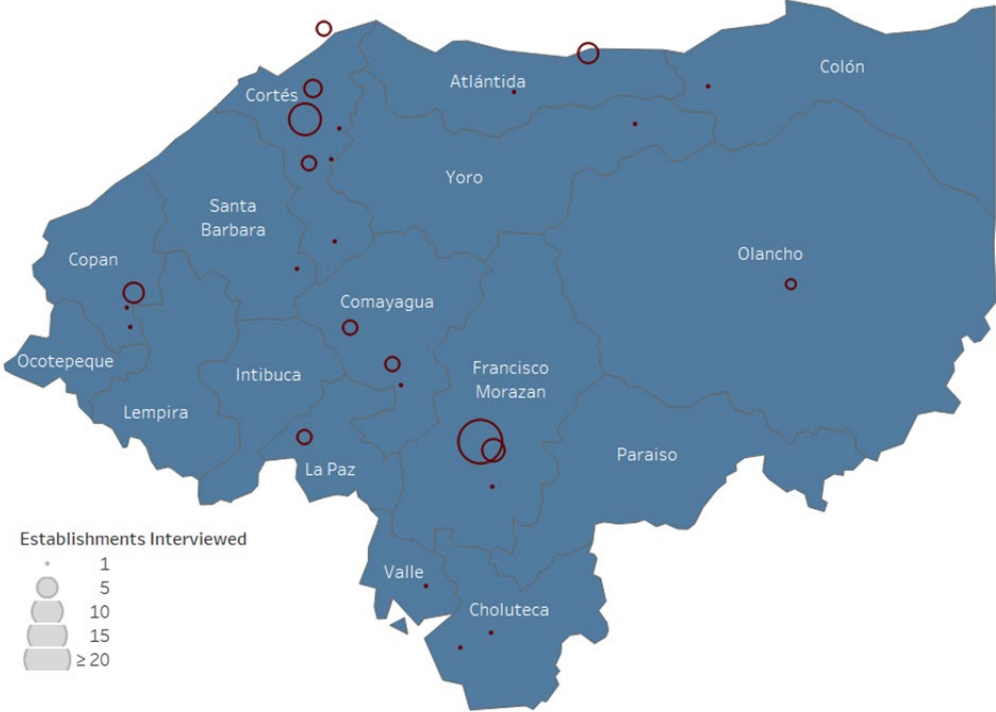
Nationally representative demand-side LMI could provide potential employees as well as universities and technical and vocational education and training institutions with crucial labor market demand information such as required qualifications, job positions that are in high demand, and remuneration across jobs. This information is a resource for potential employees’ decision-making about education, training, and career goals as well as for educational institutions, providing critical information to update their curricula in response to current labor market needs.

Implementation of the Establishment Survey in the Food and Beverage Sector in Honduras 2021

Geographic Reach

The AIR team successfully implemented the pilot survey in all departments of Honduras in which establishments are registered with ANDI, the National Statistical Institute of Honduras (*Instituto Nacional de Estadísticas de Honduras*) (INE Honduras), and the Trade Map database of the International Trade Centre (ITC). Exhibit 1 illustrates the geographic distribution of the surveyed establishments³ by department.⁴

Exhibit 1. Geographic Reach of the Establishment Survey, by Department



3. The term surveyed establishments refers to the 100 establishments that completed the survey.
 4. Survey respondents spanned 12 of the 18 departments of Honduras; the six departments which are not in the Honduras pilot survey results, due to no establishments being in those departments, include Ocatepeque, Lempira, Gracias a Dios, Islas de la Bahía, Intibucá, and El Paraíso.

Coverage by Size

During the data collection and data cleaning process, the AIR team decided to exclude establishments with fewer than two workers, which represents one of the eligibility criteria for the pilot establishment survey. This criterion reflects concerns that workers in very small establishments, namely establishments with less than two employees, typically execute a wide variety of tasks that correspond to more than one job position, making it difficult to classify their job position.

Unit of Analysis and Key Informants

The unit of analysis is the establishment, compensated employees, and job positions for filled and future demand. In most cases, the informant was the establishment's owner, manager, administrator, or human resources manager.

Target Population and Survey Objective

The population of interest for the survey was private sector establishments that were operational with two or more employees between March 2020 and March 2021 and whose principal or secondary economic activity during that time included at least one of the following activities in the manufacturing sector: Manufacture of Food Products ([Appendix E.III](#)) and/or Manufacture of Beverages ([Appendix E.IV](#)).

Due to the lack of updated, nationally representative administrative records on establishments in the sector of interest, the AIR team identified establishments for this pilot survey with available data. More specifically, the AIR team compiled a list of potentially eligible establishments with three sources: (1) ANDI's 2020 registry of associates; (2) the 2015 business registry of INE Honduras; and (3) the Trade Map database of the International Trade Centre (ITC) that we accessed and cleaned in March 2021.⁵ In total, the pilot survey establishment list consisted of 344 establishments with economic activities or products that pertain to the food and beverage manufacturing sector. For further details on the establishment list construction, please refer to [Appendix A](#).

In considering the available data, the objective of the pilot survey was to take a census of local registries of establishments operating in the sector of interest. However, due to constraints in constructing the compiled establishment list and field challenges with telephone data collection (e.g., did not answer, refusals) ([Appendix A](#)), the pilot survey did not yield a census of the ANDI and INE Honduras registries. Of the 344 establishments we attempted to contact for the pilot survey, 100 establishments responded to the survey, which represents a 35 percent response rate ([Appendix A](#)).

5. By source, the compiled pilot survey establishment list included 240 establishments from the INE Honduras registry, 56 from the ANDI registry, and 48 from the Trade Map database. After accounting for duplicates among these three sources, we attempted to include all potentially eligible establishments (i.e., with economic activities and/or products relevant to the food and beverage manufacturing sector) from these sources with, at minimum, valid telephone numbers.

Results

In this section, we present general information about the surveyed establishments as well as demographic data about their employees. We also highlight the characteristics of the key occupations that the surveyed establishments identified, including their educational requirements, core competencies, current employment levels, and future staff demand. We conclude this section with information regarding personnel training tendencies among surveyed establishments as well as information that specifically pertains to the state of these establishments in the context of the COVID-19 pandemic. All results reflect the situation of the establishments at the time of data collection, which occurred amid the COVID-19 pandemic, and are rounded to the nearest whole number.⁶

For general establishment-level information, we disaggregate the results by establishment size and by region where possible. We define establishment size in terms of number of employees, which includes four categories: (1) micro (1 to 10 employees)⁷; (2) small (11 to 50 employees); (3) medium (51 to 150 employees); and (4) large (more than 150 employees) ([Appendix E.V](#)). By region, we disaggregate results into four regions: (1) the Central Region, (2) the Western Region, (3) the Eastern Region, and (4) the Southern Region.⁸

For occupation-level information, we disaggregate results by the job positions that surveyed establishments most frequently reported as their most numerous in terms of recruitment volume. These results depict the characteristics of the job positions, not of the workers who occupy these positions.

Due to the presence of outliers in the demographic data on establishment workers, we trimmed outliers at the upper bound of the 95th percentile for the total number of full- and part-time employees, which serves as the determinant for associated statistics on workers by establishment size ([Exhibit 4](#)), gender ([Exhibit 5](#)), age range ([Exhibit 6](#)), job position ([Exhibit 7](#)), and training module ([Exhibit 15](#)). See [Appendix C](#) for robustness checks (i.e., Winsorization).

6. Since we round results to the nearest whole number, some results expressed in percentages may total to more or less than 100 percent though they indicate the total. Instances in which this occurs in the Results Section is due to rounding error.

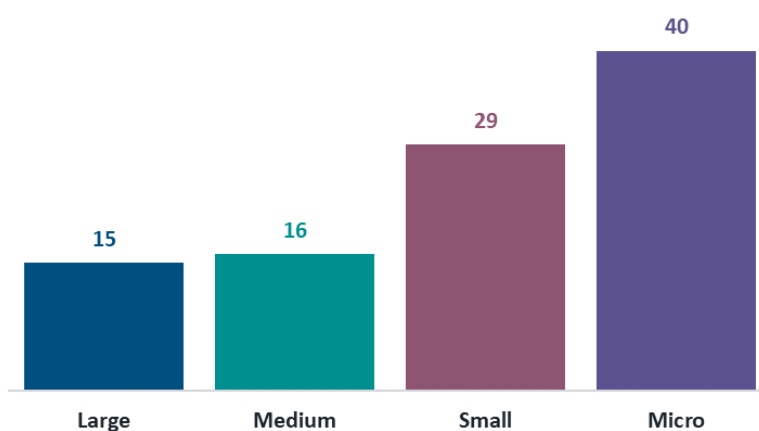
7. As previously mentioned in the Introduction Section, AIR only surveyed micro establishments that had a minimum of two employees.

8. Due to the low number of respondents by department, we disaggregate results by region rather than department. We sourced the list of Honduran regions and their corresponding departments from local partners at the Latin American Faculty of Social Sciences (*Facultad Latinoamericana de Ciencias Sociales*) of the National Autonomous University of Honduras (*Universidad Nacional Autónoma de Honduras*). This list specifies six regions: (1) the Western Central Region, (2) the Central Eastern Region, (3) the Northwestern Region, (4) the Northeastern Region, (5) the Western Region, and (6) the Southern Region. For illustrative purposes, we combined the Western Central Region (n = 11) and Central Eastern Region (n = 38) into the Central Region. Due to the low number of surveyed establishments in certain regions, we also combined the Western Region (n = 8) and the Northwestern Region (n = 29) into the Western region. For a list of departments by region, please refer to [Appendix B](#).

Number of Establishments

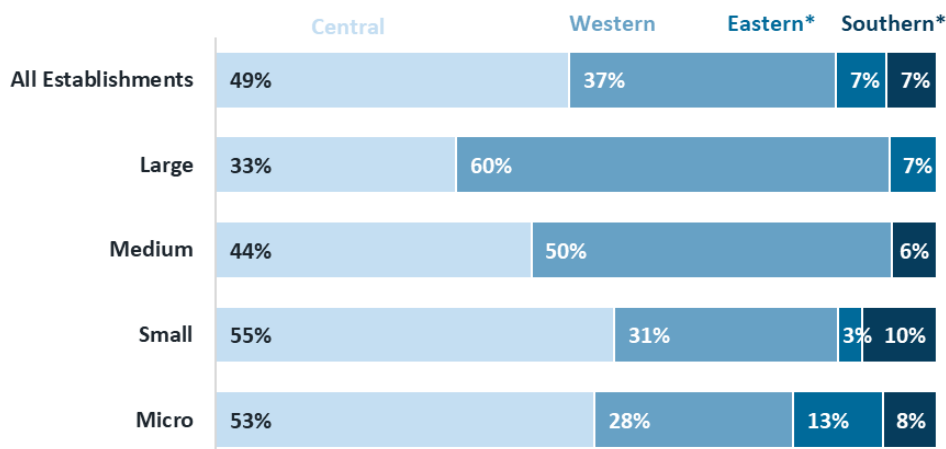
Of the 100 establishments in the food and beverage manufacturing sector that responded to the pilot survey, 40 percent (n = 40) are micro establishments, 29 percent (n = 29) are small establishments, 16 percent (n = 16) are medium establishments, and 15 percent (n = 15) are large establishments (Exhibit 2).

Exhibit 2. Number of Surveyed Establishments, by Establishment Size



As shown in Exhibit 3, the surveyed establishments are predominantly located in the Central Region (49 percent), which includes the departments of Intibucá, Comayagua, La Paz, Francisco Morazán,⁹ El Paraíso, and Olancho. By establishment size, a larger proportion of large and medium establishments are in the Western Region¹⁰ (60 and 50 percent, respectively) relative to the proportion of small and micro establishments (31 and 28 percent, respectively) in that region.

Exhibit 3. Regional Distribution of Establishments, by Establishment Size and Region



Note. *The number of surveyed establishments in both the Eastern and Southern Regions was seven each. Although robust estimates cannot be made with such a limited sample, we report results from these regions for illustrative purposes and include them in all aggregate results.

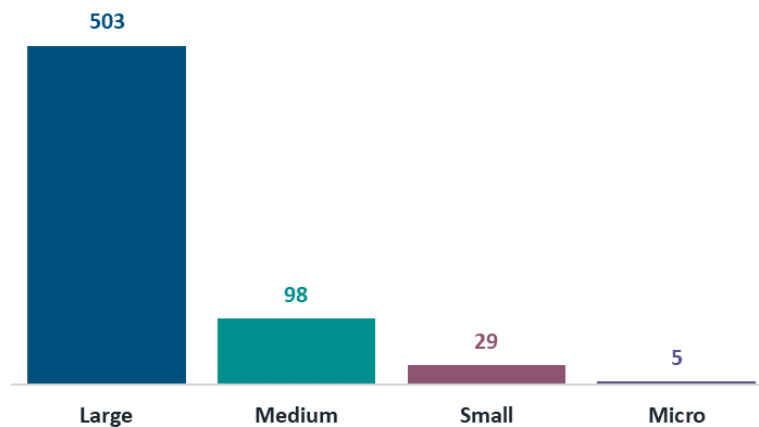
9. The capital city, Tegucigalpa, is located in the department Francisco Morazán.

10. The Western Region includes the departments *Cortés*, *Santa Bárbara*, and *Yoro* (i.e., Northwestern Region) as well as the departments *Ocatepeque*, *Copán*, and *Lempira* (i.e., the Western Region).

General Findings about Employees

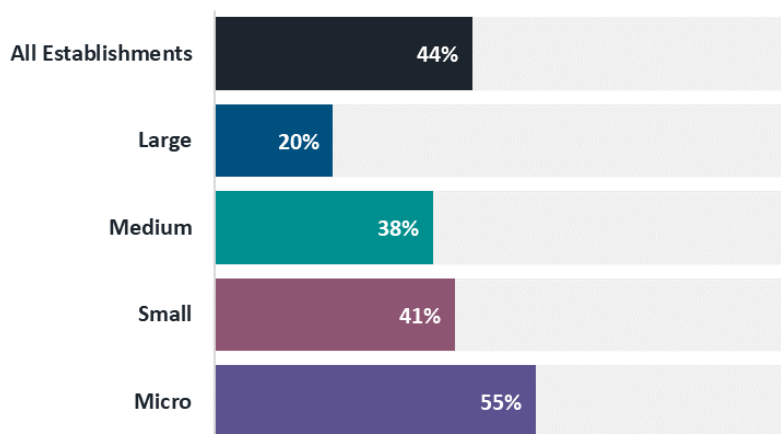
The surveyed establishments reported a total of 7,639 full- and part-time employees in 2021.¹¹ By establishment size, large establishments reported a total of 5,027 employees, which is equivalent to an average of 503 employees per establishment (Exhibit 4). Medium establishments reported 1,575 employees, representing an average of 98 employees per establishment. Small and micro establishments reported 828 and 209 employees, respectively, with an average of 29 and 5 employees, respectively, per establishment.

Exhibit 4. Average Number of Employees per Establishment in 2021, by Establishment Size



Of the surveyed establishments, females represent 44 percent of employees, on average (Exhibit 5). This average, however, masks disparities by establishment size. Micro establishments have the highest average rate of female labor force participation (55 percent), followed by small establishments (41 percent). Large establishments, by contrast, report the lowest share of female employees (20 percent), on average.

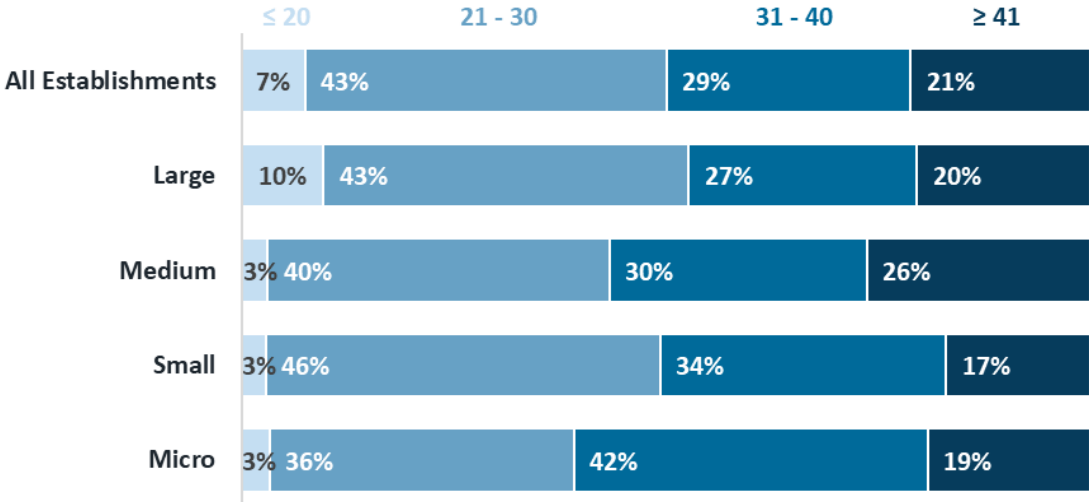
Exhibit 5. Average Female Labor Force Participation Rate, by Establishment Size



11. The total number of employees in 2021 corresponds to the pilot survey's reference period for this specific survey question, which asked establishments to report the number of full- and part-time employees they had within the last three months.

Among their employees, establishments reported that most, on average, are 21 to 30 years old (43 percent), followed by employees 31 to 40 years old (29 percent). While nearly a quarter (21 percent) of their employees are over 40 years old, only seven percent are under 21 years of age, on average (Exhibit 6). By establishment size, large establishments have a greater share of employees under the age of 21 (10 percent). By contrast, medium establishments report a higher proportion of employees ages 41 or older (26 percent) while micro establishments have a larger share of workers in the 31 to 40 age range (42 percent) relative to the other establishment sizes.

Exhibit 6. Worker Age Distribution, by Establishment Size



Note 1. Among survey respondents, three did not provide information on the number of workers by age range. By establishment size, one medium and two large establishments did not report this information. After trimming outliers, this exhibit represents results for 94 of the 100 surveyed establishments.

Note 2. Given the outlier detection and treatment method (Appendix C), four large establishments and one medium establishment report influential values for specific age ranges. Results for this exhibit are particularly sensitive to the outlier treatment method. Please refer to Appendix C for further details.

Key Occupations in the Food and Beverage Sector

In this section, we present information on the characteristics of key job positions in the food and beverage manufacturing sector. Prior to conducting the pilot survey, the AIR team consulted local experts on the sector to identify (1) the most important job positions and (2) the positions with the highest recruitment volume. Through these consultations, AIR narrowed a broad list of job positions in the food and beverage manufacturing sector to 19 key ones. Of these 19 positions, the AIR team asked respondents to indicate up to six positions that they consider the largest in terms of recruitment volume for their establishment.¹²

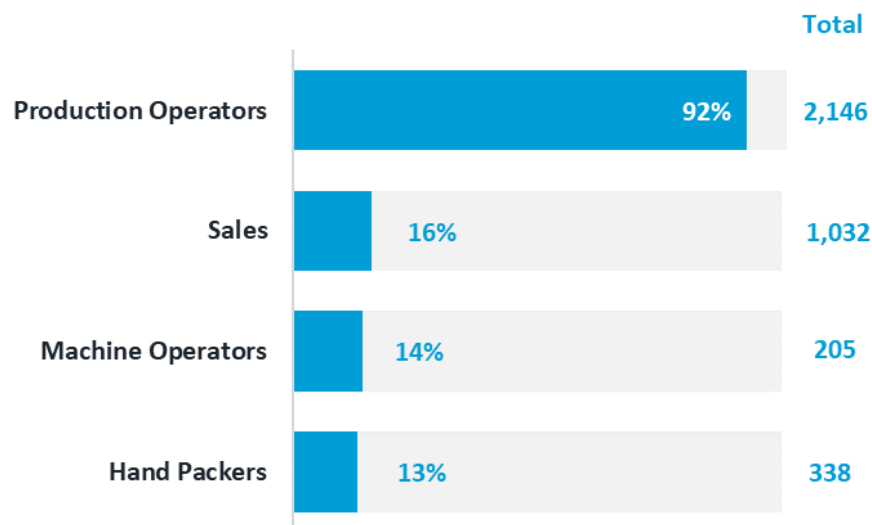
12. While establishments were able to select up to six positions for the pilot survey, some reported as few as one job. The 19 key positions on the list were processing operators; machine operators; hand packers; cleaners and assistants; accountants; packaging, bottling and labeling machine operators; vehicle drivers and mobile heavy equipment operators; commercial agents

In the following section, we delineate the pilot survey results for these job positions, specifically reporting on those most frequently cited across the surveyed establishments.

Most Common Positions

Exhibit 7 displays the job positions with the highest recruitment volume, showing the percent of surveyed establishments that identified those positions among their most highly recruited as well as the number of employees for each respective position. Most establishments (92 percent) reported production operators (Appendix E.VI) as a highly recruited position, reporting a total of 2,146 employees (Appendix E.VII) for this position. Following this position, the most frequently cited positions across surveyed establishments were sales positions¹³ (16 percent), machine operators (14 percent), and hand packers (13 percent). By position, these establishments employ a total of 1,032 as sales workers; 205 as machine operators; and 338 as hand packers.

Exhibit 7. Highly Recruited Job Positions among Surveyed Establishments and Number of Employees



Note. The total number of employees by job position solely represents the establishments that identified the position among their top six most highly recruited. By job position, the total number of observations: production operators (92), sales workers (16), machine operators (14), and hand packers (13).

and brokers; food and beverage tasters and classifiers; transport and storage workers; clerks; customer information services employees; employees in charge of the registration of materials and transportation; manufacturing industry supervisors; occupational, environmental and related health inspectors; mechanics and machine repairers; administrative and commercial directors; production and operations directors; and chemical engineers (i.e., food and beverage technologists). Respondents could also select “other” to specify job positions that were not in the aforementioned list.

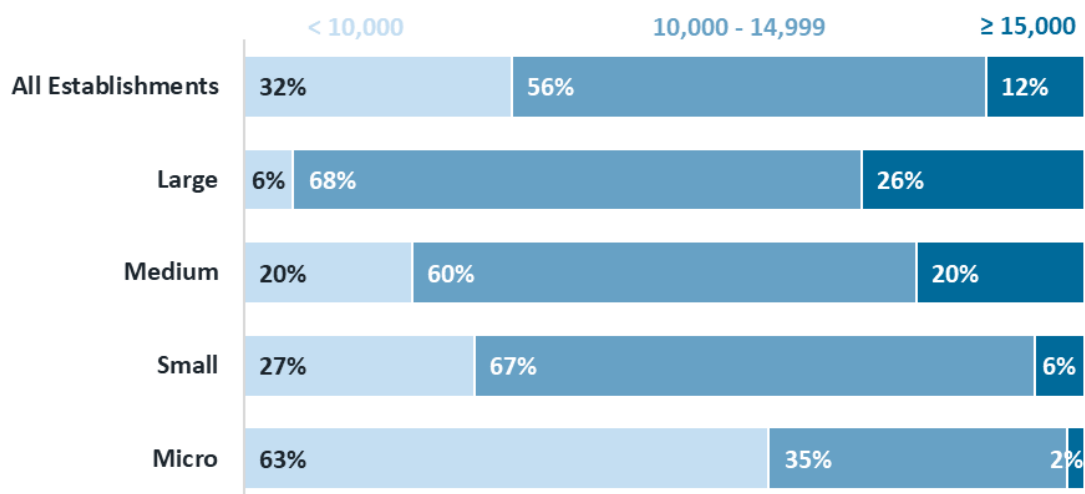
13. The sales position is shorthand for commercial agents and brokers. We use this shorthand within the report for illustrative purposes.

Food and Beverage Sector Remuneration

Among their most highly recruited job positions, survey respondents reported average monthly remuneration rates¹⁴ for each respective position (Exhibit 8).¹⁵ The monthly remuneration rate range that surveyed establishments most frequently reported was between 10,000 and 14,999 Lempiras (HNL) per month across all jobs. For their most highly recruited job positions, over half of large, medium, and small establishments (68, 60, and 67 percent, respectively) offer an average monthly salary in that range while just over a third (35 percent) of micro establishments reported doing so.

In general, the distribution suggests that as establishment size increases, so does the average monthly salary they offer for these highly recruited positions.¹⁶ By establishment size, for instance, large establishments more frequently pay employees, across all positions, a monthly salary equal to or greater than 15,000 HNL (26 percent).

Exhibit 8. Monthly Salary Range (in HNL), by Establishment Size



Note. These values reflect all job positions reported as most numerous by establishments (n = 163). The graph does not include the percentage without data due to the structure of the survey question. Responses to the question about salary ranges depends on the positions that each establishment chose as one of the six most numerous.

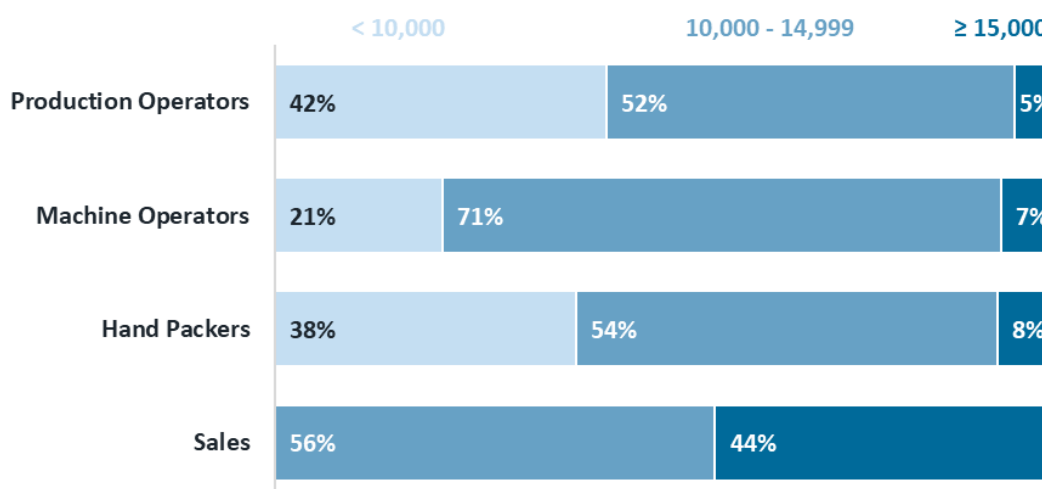
14. The remuneration rates reflect base salary, overtime, benefits, in-kind remuneration, and other types of remuneration. The average monthly earnings in Honduras in 2020 was 8,296 HNL (ILOSTAT, 2020). In the manufacturing sector, the average 2020 salary was 8,743 HNL (ILOSTAT Explorer, 2020). The gross national income per capita, PPP (current international \$) for Honduras in 2020 was 5,050, which equates to an average of 421 per month (World Bank Data).

15. The third (15,000 to 19,999 HNL); fourth (20,000 to 24,999 HNL); and fifth (equal to or greater than 25,000 HNL) salary range options were combined into one category due to low frequencies. Only large (n = 3) and medium (n = 2) establishments reported offering the fourth salary range choice, and only one medium establishment reported offering the fifth salary range choice.

16. The results in Exhibit 8 capture salaries for the most highly recruited job positions across surveyed establishments. As previously mentioned, respondents were able to indicate up to six positions, and the job positions they identified as highly recruited varied. Therefore, the results in Exhibit 8 do not solely reflect the top four positions across all surveyed establishments (i.e., production operators, sales, machine operators, and hand packers).

By job position, production operators and hand packers are paid less on average than the other two highly recruited occupations. A comparatively larger share of establishments¹⁷ reported paying production operators (42 percent) and hand packers (38 percent) less than 10,000 HNL per month ([Exhibit 9](#)).¹⁸ Conversely, none reported paying sales workers a salary below that threshold (i.e., 10,000 HNL); rather, they predominantly (56 percent) pay sales workers between 10,000 and 14,999 HNL a month. For an estimation of average salary by job position, please refer to [Appendix D](#).

Exhibit 9. Monthly Salary Range (In HNL), by Job Position



Note. The percentage of monthly salary range by job position solely represents the establishments that identified the position among their top six most highly recruited. By job position, the total number of observations (denominator): production operators (92), sales workers (16), machine operators (14), and hand packers (13).

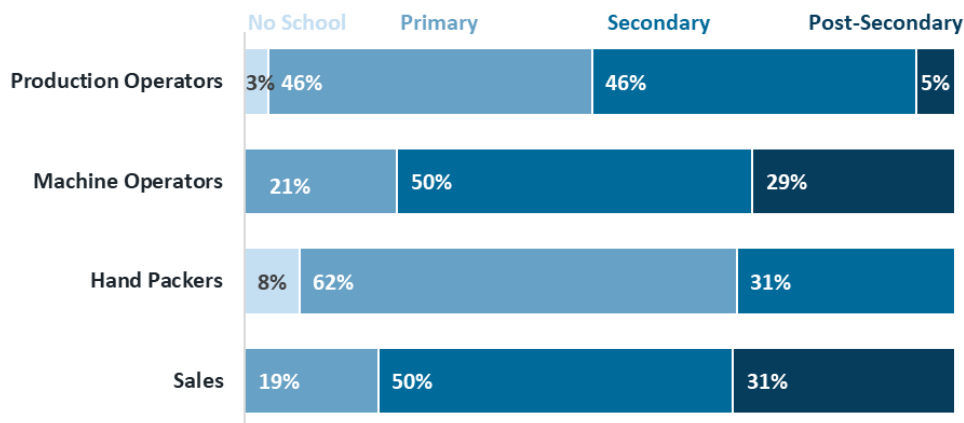
Academic Training, Competencies, and other Requirements

According to survey respondents, machine operators and sales workers have higher minimum education requirements than production operators and hand packers ([Exhibit 10](#)). Fifty percent of surveyed establishments require secondary education for both machine operators and sales workers and roughly 30 percent require post-secondary education for these positions. For production operators, minimum education requirements are equally split between primary and secondary education (46 percent respectively), as reported by surveyed establishments; by contrast, for hand packers, most (62 percent) require a minimum of primary education. No surveyed establishments require a minimum of university education for these four job positions.

17. As previously stated, only establishments that reported these jobs among their most highly recruited provided this job-specific information on remuneration rate ranges. For example, 92 establishments provided this information for production operators.

18. For the four most highly recruited positions, no surveyed establishments reported offering a salary range above 24,999 HNL. Therefore, the results in the combined salary range (equal to or greater than 15,000 HNL) for Exhibit 9 only reflect the percentage of establishments offering a range between 15,000 to 24,999 HNL.

Exhibit 10. Minimum Required Academic Training, by Job Position

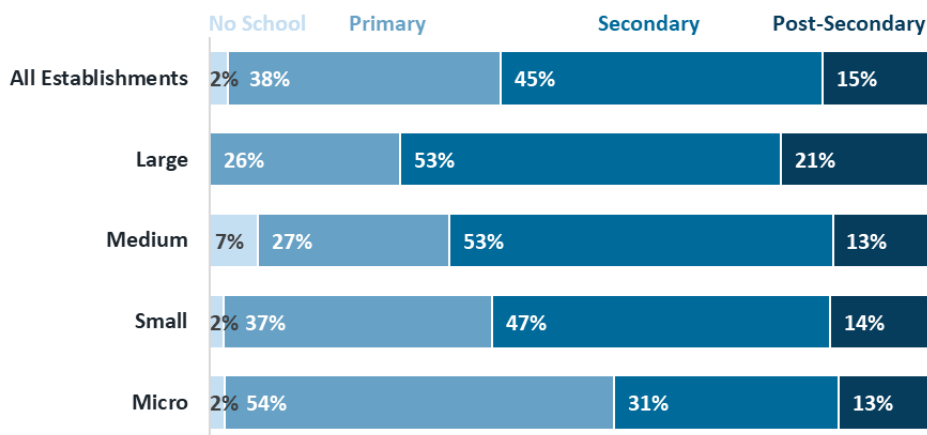


Note 1. The category post-secondary refers to technical and vocational training, technical university, and incomplete university education.

Note 2. The percentage of minimum required academic training by job position solely represents the establishments that identified the position among their top six most highly recruited. By job position, the total number of observations (denominator): production operators (92), sales workers (16), machine operators (14), and hand packers (13).

By establishment size, over half of large and medium establishments (both 53 percent) and nearly half of small establishments (47 percent) require a minimum of secondary education for their most highly recruited positions (Exhibit 11).¹⁹ For these job positions, a slightly greater share of large establishments require post-secondary education (21 percent) relative to the other establishment sizes.

Exhibit 11. Minimum Required Academic Training, by Establishment Size






Note 1. The category post-secondary refers to technical and vocational training, technical university, and incomplete university education.

Note 2. The values reflect all job positions reported as most numerous by establishments (n = 163), which varies by establishment. Responses to the question about minimum required academic training depend on the positions that each establishment chose as one of the six most numerous.

19. Values reflect positions other than the four positions that establishments most frequently cited (i.e., production operators, machine operators, hand packers, and sales workers), as establishments had the option to list up to six job positions among their most numerous in terms of recruitment volume.

AIR asked respondents to identify the most important skills for their most highly recruited job positions.²⁰ For the four most highly recruited positions across surveyed establishments, the most important skill was *being proactive and willing to work under pressure*. For production operators and hand packers, *attention to detail* was the second most reported skill, followed by *teamwork*. Other important skills for these four positions were *effective and clear written and spoken communication* and *updated knowledge to improve the performance of duties* (Exhibit 12).

Exhibit 12. Required Skills in Order of Importance, by Job Position





		01	02	03	04
Production Operators		Proactive and willing to work under pressure	Attention to detail	Teamwork	Effective and clear written and spoken communication
Sales		Proactive and willing to work under pressure	Effective and clear written and spoken communication	Attention to detail	Teamwork
Machine Operators		Proactive and willing to work under pressure	Teamwork	Updated knowledge to improve the performance of duties	Effective and clear written and spoken communication
Hand Packers		Proactive and willing to work under pressure	Attention to detail	Teamwork	Effective and clear written and spoken communication

Establishments reported job requirements, by order of importance, for each job position (Exhibit 13). All surveyed establishments listed *availability of schedule* as the most important requirement across the four most common job positions.²¹ The second most important requirement, with the exception of sales, was *letters of recommendation*. For sales positions, a *lack of criminal and police records* was the second most important requirement. Establishments only listed *living in the area* as an important requirement for production operators. Likewise, *basic machine handling* was only identified as an important requirement for machine operators. Other important requirements include *having a health certificate* and *ability to work overtime*.

20. Establishments had the option to select up to five required skills per job position that they identified as most numerous. The survey listed 11 key job skills: (1) knowledge about topics that improve job performance, (2) effective and clear written and spoken communication, (3) knowledge and information dissemination abilities, (4) proactive and willingness to work under pressure, (5) innovation abilities, (6) leadership abilities, (7) time management, (8) capacity to generate solutions and offer good service to customers, (9) attention to detail, (10) teamwork, and (11) management in times of crisis. Respondents could also report other skills that were not in this list.

21. Establishments had the option to select up to five job requirements per job position that they identified as most numerous. The 14 key job requirements listed in the survey included (1) live in the area, (2) ability to work overtime, (3) basic machinery handling skills, (4) have a health certificate, (5) ability to use specialized tools, (6) job-related certifications, (7) letters of recommendation, (8) membership in a professional association, (9) availability of schedule, (10) ability to work on repetitive tasks, (11) possession of a driver's license, (12) lack of criminal and police records, (13) product knowledge, and (14) knowledge of safety in food production. Respondents also had the option to report other requirements.

Exhibit 13. Job Requirements in Order of Importance, by Position

		01	02	03	04
Production Operators		Availability of schedule	Letters of recommendation	Live in the area	Have a health certificate
Sales		Availability of schedule	Lack of criminal and police records	Letters of recommendation	Have a health certificate
Machine Operators		Availability of schedule	Letters of recommendation	Basic machine handling	Ability to work overtime
Hand Packers		Availability of schedule	Letters of recommendation	Have a health certificate	Ability to work overtime

Personnel Training

The following section describes trends in personnel training among surveyed establishments, including trainings they conducted within the past 12 months as well as future needs for training.

Trainings Provided, Training Plan and Training Budget

Most surveyed establishments have a training plan for their personnel (57 percent) and held trainings for their personnel in the past 12 months (61 percent); however, only 43 percent reportedly have a budget for personnel training (Exhibit 14). Among surveyed establishments, a vast majority of large and medium establishments (80 and 81 percent, respectively) have a training plan, followed by small and micro establishments (59 and 38 percent, respectively). Likewise, most large and medium establishments have a training budget (80 and 75 percent, respectively), while fewer than half of small and micro establishments do (45 and 15 percent, respectively).

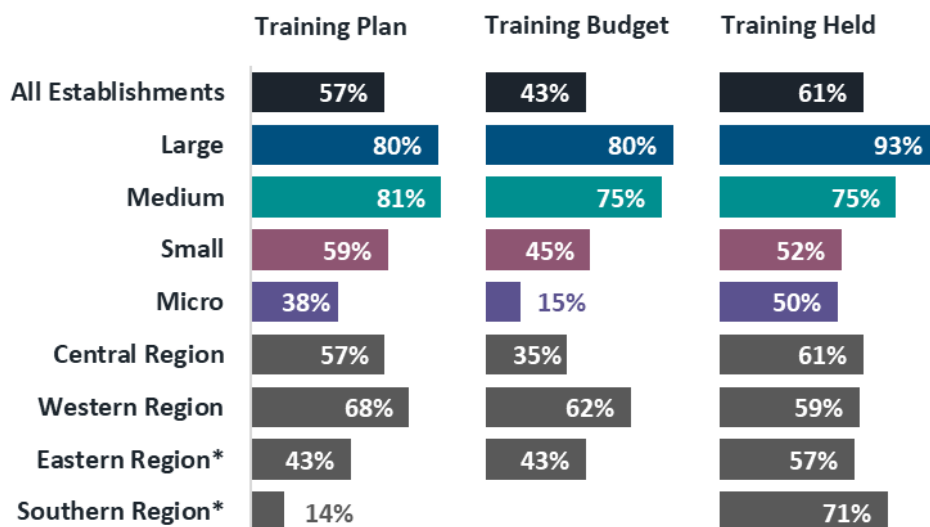
By region, most surveyed establishments in the Western and Central Regions have a training plan (68 and 57 percent, respectively), which compares high to those in the Eastern and Southern Region.²² Nevertheless, a greater proportion of surveyed establishments in the Western Region have a training budget (62 percent) than in the Central Region (35 percent).

Most surveyed establishments (61 percent) conducted trainings for their personnel within the last 12 months. This trend was consistent across establishment sizes and regions, though a larger share of large and medium establishments (93 and 75 percent, respectively) conducted these trainings relative to small (52 percent) and micro (50 percent) establishments.

22. The total number of surveyed establishments in the Eastern and Southern Regions was seven each. Although robust estimates cannot be made with such a limited sample, results from these regions are reported illustrative purposes and are included in all aggregate results.

The establishments that did not conduct any trainings (n = 39) in the past 12 months indicated that they did not do so because they did not prioritize or perceive such trainings as necessary (n = 12) or they cited other reasons such as not having time for training (n = 6), a lack of interest from personnel in training (n = 4), and the COVID-19 pandemic (n = 4).

Exhibit 14. Proportion of Establishments with a Personnel Training Plan, Training Budget, and that Held Personnel Training in the Past 12 Months, by Establishment Size and Region



Note. *The total number of surveyed establishments in the Eastern and Southern Regions was seven each. Although robust estimates cannot be made with such a limited sample, results from these regions are reported for illustrative purposes and are included in all aggregate results.

Characteristics of the Personnel Trainings

Within the last 12 months, establishments that held trainings (n = 61) most often convened trainings on the following topics:

- Food Handling
- Biosecurity Protocols for COVID-19²³
- Customer Service

Among those topics, training on biosecurity protocols for COVID-19 reached the largest number of employees on average, followed by food handling and customer service. Additionally, average training duration by topic generally varied between five and eight hours (Exhibit 15).

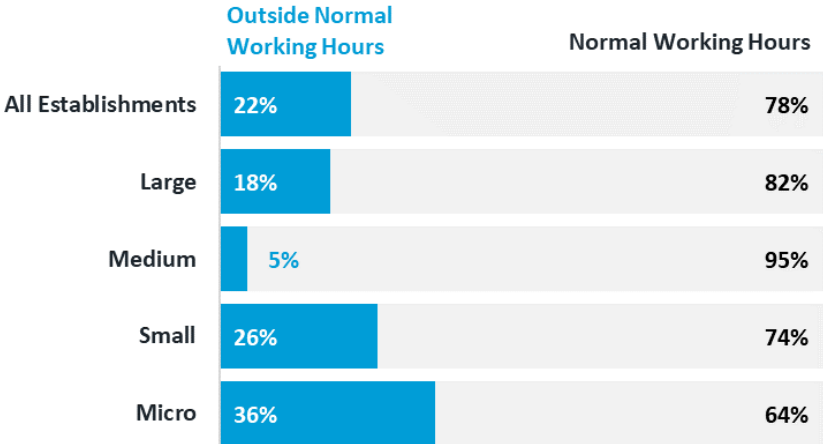
23. In general, Biosecurity Protocols for COVID-19 training included measures to mitigate the spread of COVID-19, such as use of face masks in public and common areas. Required measures varied by establishment.

Exhibit 15. Frequency of Training Topics and Average Personnel Trained and Average Hours, by Training Topic

Course Name	Frequency	Average Personnel	Average Hours
Food Handling	29	72	8
Biosecurity Protocols for COVID-19	18	79	5
Customer Service	15	36	6

Of the establishments that held trainings (n = 61), most facilitated them internally; however, a comparatively smaller share had other institutions (e.g., the Honduran Chamber of Commerce) facilitate these personnel trainings. In addition, most establishments (78 percent) only conducted their personnel trainings during the establishment’s standard working hours²⁴ whereas 22 percent only did so outside of normal working hours (see Exhibit 16). Training personnel outside of working hours was more common among micro and small establishments (36 and 26 percent, respectively) relative to medium (five percent) and large (18 percent) establishments.

Exhibit 16. Trainings Schedule, by Establishment Size



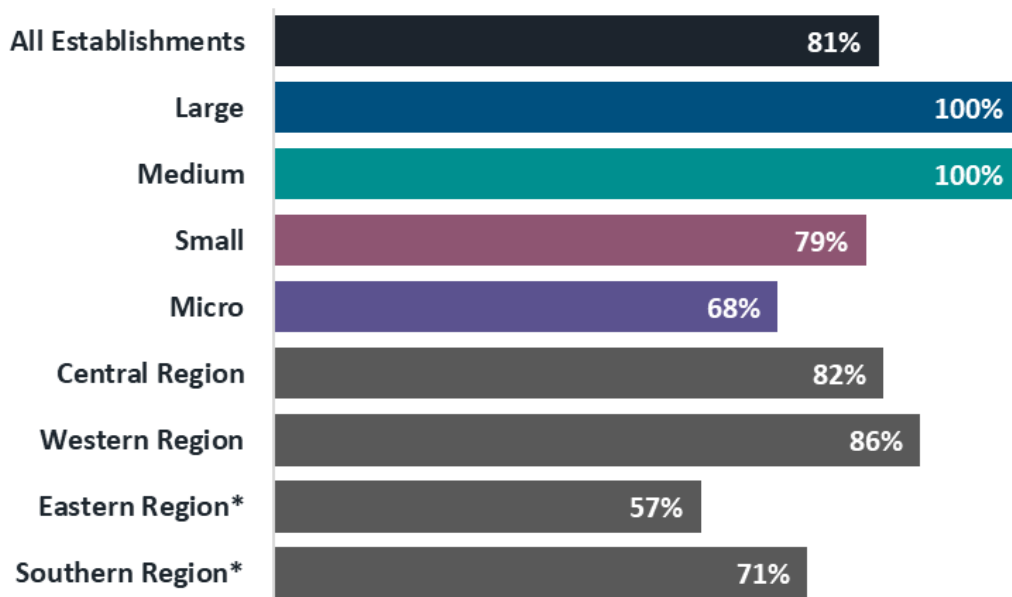
Note. The denominator for all establishments is 61 since it only reflects establishments that held personnel trainings in the past 12 months.

Training Needs

Among surveyed establishments, 81 percent reported having training needs within the 12 months following their survey date. By establishment size, all large and medium establishments (100 percent) reported training needs whereas a comparatively smaller share of small (79 percent) and micro (68 percent) establishments reported as such (see Exhibit 17). By region, more establishments in the Western Region reported training needs (86 percent) than those in the Central Region (82 percent).

24. Standard working hours may vary from establishment to establishment.

Exhibit 17. Proportion of Establishments with Training Needs, by Size and Region



Note 1. *The total number of surveyed establishments in the Eastern and Southern Regions was seven each. Although robust estimates cannot be made with such a limited sample, results from these regions are reported for illustrative purposes and are included in all aggregate results.

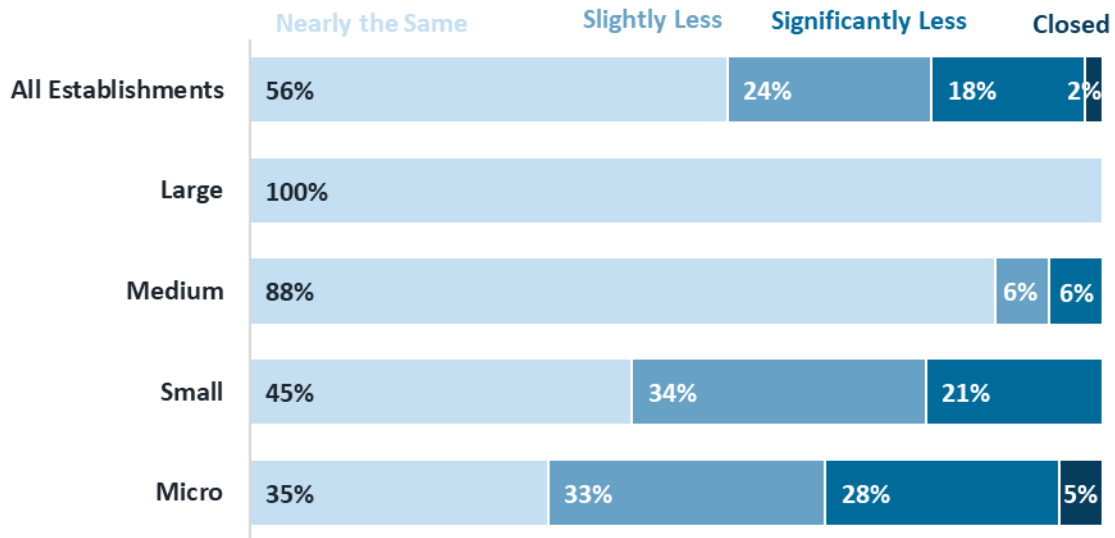
Note 2. Among the establishments with training needs (n = 81), frequently mentioned training topics include (1) production processes, (2) customer service, (3) sales and marketing, (4) interpersonal dynamics, (5) leadership and management, and (6) biosecurity protocols.

The State of the Food and Beverage Sector Amid the COVID-19 Pandemic

Given that data collection for this survey occurred during the COVID-19 pandemic, the results partially reflect pandemic-related changes among the surveyed establishments. Despite the challenges associated with the COVID-19 pandemic, however, nearly all establishments (98 percent) that responded to the survey were open and operational—albeit to varying degrees—when contacted for the survey ([Exhibit 18](#)).²⁵ By establishment size, all large, medium, and small establishments were open; all large establishments (100 percent) and most medium establishments (88 percent) reported nearly the same operational capacity relative to a normal, pre-pandemic year. Conversely, a majority of small and micro establishments reported being open but either at slightly less (34 and 33 percent) or significantly less capacity (21 and 28 percent, respectively) than in a pre-pandemic year. Across the different establishment sizes, only micro establishments reported being closed and unable to operate (five percent).

25. Surveyed establishments were asked to report whether they were currently open and, if so, at what capacity relative to a “normal” year (i.e., “before the COVID-19 pandemic”).

Exhibit 18. Operational Capacity Relative to a Pre-Pandemic Year, by Establishment Size

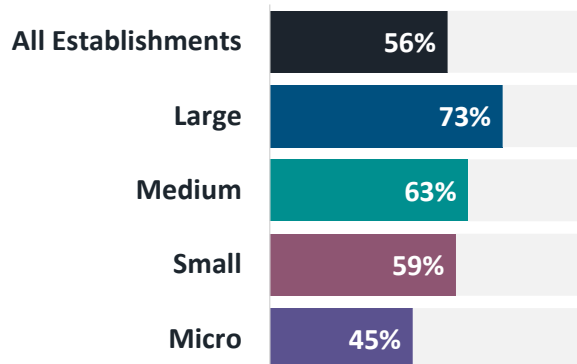


The establishments that were open when surveyed (n = 98) undertook various measures to remain open and reduce their pandemic-related economic losses. With respect to personnel and operational expenses, the most common measures were the reduction of hours and/or employee work schedules (31 percent) and layoffs (22 percent); nevertheless, roughly a quarter of these establishments reported that they did not take any measures (26 percent). With respect to production expenses, the most frequent measure was partially reducing production, stocks, or inventories (54 percent). However, just over a third (34 percent) reported that they did not take any production-related measures to reduce pandemic-related economic losses.

Changes in Personnel Demand

A majority of surveyed establishments (56 percent) indicated that they would require more staff in the next 12 months (Exhibit 19). When analyzing the projected increase in labor demand by establishment size, 73 percent of large, 63 percent of medium, 59 percent of small, and 45 percent of micro establishments expect increased demand for staff in the following 12 months. By job position, establishments that require additional staff expected greatest demand for production operators (73 percent) and sales positions (30 percent) in the next 12 months.

Exhibit 19. Proportion of Establishments that Project Increased Staff Demand, by Establishment



Final Reflections

In this report, we present results from the pilot establishment survey for the food and beverage manufacturing sector in Honduras, focusing on variation by establishment size with respect to labor demand, personnel dynamics, and training needs. While the pilot survey results do not represent sector trends due to the sample design and size, they underscore the potential insights establishment surveys could yield on labor market dynamics, such as future labor demand within the food and beverage manufacturing sector.

In our presentation of establishment-level information, two personnel demographic trends stand out: (1) the most representative age group among employees is 21 to 40 years, which accounts for 72 percent of reported workers and (2) female labor participation accounts for less than half (44 percent) of the reported workforce but varies greatly by establishment size, suggesting a seemingly inverse relationship between the share of female employees and establishment size.

In addition to these demographic trends among respondents' personnel, it appears that the key job position across respondents is production operators, which greatly outpaced the other highly recruited job positions (i.e., sales workers, machine operators, and hand packers) for their establishments. While production operators are the most highly recruited, they also appear to earn lower monthly remuneration relative to the other three job positions according to pilot survey respondents. Additionally, establishments expect an increase in staff demand for production operators (n = 41) and sales workers (n = 17) in the next 12 months. Interestingly, 16 establishments reported sales workers as a currently highly recruited job position whereas 17 establishments reported an expected increase in demand for sales workers. While machine operators and hand packers were among currently highly recruited positions across establishments, establishments that indicated need for future personnel seldom indicated an intent to hire for these positions in the future.

Lastly, the majority of small and micro establishments reported having less capacity to receive clients compared to a pre-pandemic year whereas the majority of large and medium establishments reported having nearly the same capacity. However, with the exception of micro establishments, no other establishment sizes reported being closed and unable to operate.

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Appendix A. Establishment List Construction and Response Rate

Since Honduras does not have an updated, nationally representative registry of establishments in the food and beverage manufacturing sector, AIR compiled a list of potentially eligible establishments for the pilot survey with available data. As noted in the [Introduction Section](#), the AIR team constructed this establishment list with three sources: (1) ANDI's 2020 registry of associates; (2) INE Honduras' 2015 business registry; and (3) the Trade Map database of the International Trade Centre.

The objective of the pilot survey was to take a census of local registries, offering information regarding their specific target populations. Since ANDI was one of AIR's local survey implementing partners in Honduras, AIR prioritized this registry, taking it as the basis for the compiled establishment list. However, due to the limited number of establishments in the ANDI registry that produced goods related to the sector of interest ($n = 56$), AIR sought to augment the establishment list by including the INE Honduras registry, which had substantially more establishments in the sector of interest ($n = 1,847$) but was outdated and lacked contact information for 88 percent of the establishments classified under the food and beverage manufacturing sector.

Prior to survey data collection activities, AIR attempted to (1) complete the missing contact information for the establishments in the INE Honduras registry and (2) verify the existence of establishments, using the contact information from the three data sources. For the former, AIR conducted systematic online searches through Google and social media platforms (i.e., Facebook, Instagram, Twitter, LinkedIn) to locate missing establishment contact information, namely a telephone number. However, we were unable to locate this information for a vast majority of these establishments ($n = 1,241$).²⁶

We conducted initial screening calls with all three data sources given concerns regarding outdated and missing information. In these screening calls, we endeavored to verify the existence of each establishment with the available contact information. If we were unable to verify the establishment through these initial screening calls, we eliminated them from the establishment list for the survey.

Given the constraints in constructing the compiled establishment list exclusively with the ANDI and INE Honduras registries as well as challenges with telephone survey data collection (e.g.,

26. This is potentially attributable to informality and establishment size, among other reasons. In addition, some establishments, despite having social networks or having a presence on Google Maps, did not register contact information.

non-response, refusals), AIR decided to complement the local registries with the Trade Map database. See [Exhibit A1](#) for the final survey response rates, which we predominantly calculated with formulas from the American Association for Public Opinion Research (AAPOR) *Standard Definitions* (2016). We specify our response rate formulas below.

Exhibit A1. AAPOR Response Rates

AAPOR Response Rates	Survey Screener	Survey Part 1	Survey Part 2	Consolidated
Eligibility Rate (E)	76%	100%	100%	76%
Response Rate (RR1)	35%	100%	100%	35%
Contact Rate (CONT1)	46%	100%	100%	46%
Rejection Rate (REF1)	10%	0%	0%	10%
Cooperation Rate (COOP1)	78%	100%	100%	78%

AAPOR’s **Response Rate RR1** includes Complete Interviews (I) in the numerator. The denominator includes Eligible (Complete Interview [I], Partial Interview [P], Refusal [R], Non-Contact [NC], Other cases of Non-Response [O]) and Unknown Eligibility (Unknown [UH], Other cases of Unknown [UO]) cases. The denominator excludes Not Eligible (NE) cases. The formula for calculating the Response Rate RR1:

$$RR1 = 100 * \frac{I}{(I + P) + (R + NC + O) + (UH + UO)}$$

AAPOR’s **Cooperation Rate COOP1** includes Complete Interviews (I) in the numerator and eligible, contacted cases (I, P, R, O) in the denominator. The denominator excludes Not Contacted (NC) cases; Unknown Eligibility (UH, UO) cases; and Not Eligible (NE) cases. The formula for calculating the Cooperation Rate COOP1:

$$COOP1 = 100 * \frac{I}{(I + P) + R + O}$$

AAPOR’s **Contact Rate CONT1** includes cases in the numerator where it was possible to contact someone on the phone and invite them to participate in the study. These cases correspond to Complete (I) and Partial (P) Interviews, Rejections (R), and Other Cases of Non-Response (O). The denominator includes Eligible (I, P, R, NC, O) and Unknown Eligibility (UH, UO) cases. The denominator excludes Not Eligible (NE) cases. The formula for calculating the Contact Rate CONT1:

$$CONT1 = 100 * \frac{(I + P) + R + O}{(I + P) + (R + NC + O) + (UH + UO)}$$

AAPOR's **Rejection Rate REF1** includes Rejections (R) in the numerator and Eligible (I, P, R, NC, O) and Unknown Eligibility (UH, UO) cases in the denominator. The denominator excludes Not Eligible (NE) cases. The formula for calculating the Rejection Rate REF1:

$$REF1 = 100 * \frac{R}{(I + P) + (R + NC + O) + (UH + UO)}$$

The AAPOR does not propose a formula to calculate the **Eligibility Rate (E)**²⁷ for surveys but rather suggests that each study should use the most appropriate formula to estimate the percentage of cases in the sample that could have been eligible for the study. The AAPOR (2016) refers to the manuscript by Smith (2009), which presents and discusses different calculation formulas for eligibility rates as well as the assumptions associated with each of them. For this pilot survey, we used one of the formulas from Smith (2009) to calculate the Eligibility Rate, where the Eligible cases (I, P, R, NC, O) are in the numerator, and the Eligible (I, P, R, NC, O) and the Not Eligible (NE) cases are in the denominator. The denominator excludes Unknown Eligibility (UH, UO) cases. The formula for calculating the Eligibility Rate E:

$$E = 100 * \frac{(I + P) + (R + NC + O)}{(I + P) + (R + NC + O) + (NE)}$$

27. The Anglo-Saxon literature refers to the Out-of-Sample Rate, which is the complement of the Eligibility Rate (E) and is calculated as (100%-E).

Appendix B. Regional Definition

Exhibit B1 below shows the correspondence between the six official Honduran regions, which local partners at the Latin American Faculty of Social Sciences of the National Autonomous University of Honduras provided, and the consolidated regions we used for illustrative purposes in the Results Section. The exhibit also shows these regions' corresponding departments.

Exhibit B1. Honduras Regions and Departments

Official Honduran Regions	Consolidated Regions	Corresponding Departments
Western Central	Central	<i>Intibucá, Comayagua, La Paz</i>
Central Eastern		<i>Francisco Morazán, El Paraíso, Olancho</i>
Western	Western	<i>Ocatepeque, Copán, Lempira</i>
Northwestern		<i>Cortés, Santa Bárbara, Yoro</i>
Northeastern	Eastern	<i>Atlántida, Colón, Gracias a Dios, Islas de la Bahía</i>
Southern	Southern	<i>Choluteca, Valle</i>

Appendix C. Robustness Checks

As previously mentioned in the [Introduction Section](#), we trimmed outliers for demographic data on establishment workers at the upper bound of the 95th percentile for the total number of full- and part-time employees as well as for associated statistics on workers by establishment size ([Exhibit 4](#)), gender ([Exhibit 5](#)), age range ([Exhibit 6](#)), job position ([Exhibit 7](#)), and training module ([Exhibit 15](#)).

To demonstrate the sensitivity of these aforementioned results by outlier treatment method, we document illustrative robustness checks below.²⁸ More specifically, we winsorized the demographic data on establishment workers with the 95th percentile of each variable, anchoring our outlier detection for these variables to the total number of full- and part-time employees. This method of outlier detection,²⁹ which we also implemented for the trimmed mean, is consistent with the survey design insofar as it places an upper-bound constraint on demographic variables for establishment workers. This constraint is conditioned on the total number of full- and part-time employees the respondent reported.

Comparative Statistics: Measures of Central Tendency

In considering the centrality of the total number of full- and part-time employees in our outlier treatment method, we first present several measures of central tendency, namely the median, winsorized mean, and trimmed mean,³⁰ of this variable ([Exhibit C1](#)).

Exhibit C1. Full- and Part-Time Employees, by Measure of Central Tendency and Establishment Size

Measure of Central Tendency	All Establishments	Large	Medium	Small	Micro
Median	20	700	97	25	5
Winsorized Mean	130	692	98	29	5
Trimmed Mean	80	503	98	29	5

In a similar fashion to [Exhibit C1](#), we present three key worker demographic variables by outlier treatment method. These variables are particularly salient in the purview of this report and thus serve as illustrative robustness checks.

28. With a larger sample, we recommend those replicating the establishment survey conduct more intensive robustness checks and consider additional outlier detection and treatment (e.g., imputing the median) methods. Given the limited number of pilot survey respondents, their non-random composition, and the scope of this pilot survey, our sensitivity analysis is purely illustrative.

29. For related practices with firm-level data, please refer to Aguinis et al. (2013) and Ishikawa et al. (2010), among others.

30. The trimmed mean calculations are in the Results Section. We include them in the appendix tables to facilitate comparison between outlier treatment methods.

Exhibit C2. Proportion of Female Employees, by Outlier Treatment Method and Establishment Size

Outlier Treatment Method	All Establishments	Large	Medium	Small	Micro
Winsorized	27%	24%	37%	38%	53%
Trimmed	44%	20%	38%	41%	55%

Exhibit C3. Proportion of Employees, by Age Range (Winsorized) and Establishment Size

	≤ 20	21 - 30	31 - 40	≥ 41
All Establishments	7%	42%	29%	22%
Large	8%	42%	27%	22%
Medium	3%	40%	30%	26%
Small	3%	46%	34%	17%
Micro	3%	36%	42%	19%

Note. Given the outlier detection and treatment method, four large establishments and one medium establishment report influential values for specific age ranges. While these influential values potentially reflect lumpy, multimodal distributions of employees by age range, which may be consistent with ex ante expectations, it also skews the share of workers by age range in this exhibit. Therefore, results for this exhibit are particularly sensitive to the outlier treatment method.

Exhibit C4. Number Employees, by Outlier Treatment Method and Job Position

Outlier Treatment Method	Production Operators	Machine Operators	Hand Packers	Sales Workers
Winsorized	3,646	405	498	3,032
Trimmed	2,146	205	338	1,032

Appendix D. Estimated Average Salary by Job Position

The average salary is an estimate based on the salary ranges the surveyed establishments reported for each of their highly recruited job positions ([Exhibit D1](#)). The estimate uses the midpoint of each salary range, rounded to an even number, and defines the lower bound as 1,000 HNL less than the minimum salary (10,000 HNL) and the upper bound as 1,000 HNL greater than the maximum salary (25,000 HNL). For example, for the 10,000 to 14,999 HNL salary range, we use 12,500 HNL as the midpoint.

Exhibit D1. Average Salary (HNL), by Job Position

	Production Operators	Machine Operators	Hand Packers	Sales Workers
Average Salary (HNL)	11,342	12,464	11,538	15,313

Note. The number of establishments that reported the average salary for the following positions: production operators (n = 92), machine operators (n = 14), hand packers (n = 13), and sales workers (n = 16).

Appendix E. Definitions

- I. Establishment: a part of a business with less decision-making autonomy that depends upon the business for administrative matters.
- II. In the context of this report, the term manufacturing alludes to Section C, Manufacturing, of the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4 (2009). This section encompasses one of the eligibility criteria for the pilot survey's target population. The term alludes to the distinction between food and beverage *manufacturing* economic activities and other food and beverage economic activities within the ISIC, Revision 4 such as wholesale and retail trade or accommodation and food service activities.
- III. This sector corresponds to Division 10 of the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4 (2009). At the four-digit level, this includes the following classes: processing and preserving of meat (1010); processing and preserving of fish, crustaceans and mollusks (1020); processing and preserving of fruit and vegetables (1030); manufacture of vegetable and animal oils and fats (1040); manufacture of dairy products (1050); manufacture of grain mill products (1061); manufacture of starches and starch products (1062); manufacture of bakery products (1071); manufacture of sugar (1072); manufacture of cocoa, chocolate and sugar confectionery (1073); manufacture of macaroni, noodles, couscous and similar farinaceous products (1074); manufacture of prepared meals and dishes (1075); manufacture of other food products not elsewhere classified (1079); and manufacture of prepared animal feeds (1080).
- IV. This sector corresponds to Division 11 of the ISIC, Revision 4. At the four-digit level, this includes the following classes: distilling, rectifying and blending of spirits (1101); manufacture of wines (1102); manufacture of malt liquors and malt (1103); and manufacture of soft drinks, production of mineral waters and other bottled waters (1104).
- V. The employee ranges for the establishment size categories correspond to the Government of Honduras' specifications for their 2021 minimum wage legislation, which we confirmed with our local survey partner; within this legislation, these categories specifically pertain to establishments in the manufacturing industry (The Republic of Honduras, 2021).
- VI. This job position corresponds to the International Standard Classification of Occupations (ISCO) (2008) Minor Group 751, Food Processing and Related Trades Workers, except for Unit Group 7516, Tobacco Preparers and Tobacco Products Makers (ILO, 2012). Other Unit Groups in this Minor Group include butchers, fishmongers and related food preparers (7511); bakers, pastry-cooks and confectionery makers (7512); dairy products makers (7513); fruit, vegetable and related preservers (7514); and food and beverage tasters and graders (7515). For the Spanish translation of this job position, we referred to the equivalent term in the Honduran

National Occupational Classifier, Revision 2018 (*Clasificador Nacional de Ocupaciones de Honduras, Revisión 2018*) (INE, 2019).

- VII. For the pilot survey, respondents reported the number of employees by position based on their high and low seasons of production, if applicable. The survey required that respondents report these two values only if (1) they reported seasonal variation in production volume (77 percent) *and* (2) if they hired more personnel during their high season (65 percent). Otherwise, the survey only required that respondents report one value for their number of employees by position. To aggregate the number of employees by position, we created a single, weighted value among the surveyed establishments that hire more employees during their high season. To construct this weighted average, we used the number of months in each establishments' respective high and low seasons as the weights. In short, the total employees by position within this report represent this weighed average combined with the number of employees by position reported by establishments (1) that did not have a high season or (2) that did not hire more employees during their high season.

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