

2021 MANAGEMENT AND ORGANIZATIONAL PRACTICES SURVEY

SECTION A Management Practices

- 1** In 2021, what best describes what happened at this establishment when a problem in the production process arose?

Examples: Finding a quality defect in a product or a piece of machinery breaking down.

- We fixed it but did not take further action
- We fixed it and took action to make sure that it did not happen again
- We fixed it and took action to make sure that it did not happen again, and had a continuous improvement process to anticipate problems like these in advance
- No action was taken

- 2** In 2021, how many key performance indicators were monitored at this establishment?

Examples: Metrics on production, cost, waste, quality, inventory, energy, absenteeism, and deliveries on time.

- 1-2 key performance indicators
- 3-9 key performance indicators
- 10 or more key performance indicators
- No key performance indicators (If no key performance indicators, SKIP to Question 6.)

- 3** During 2021, how frequently were the key performance indicators **reviewed** by **managers** at this establishment?

A manager is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with, e.g., Plant Manager, Human Resource Manager, Quality Manager.

Select all that apply

- Yearly
- Quarterly
- Monthly
- Weekly
- Daily
- Hourly or more frequently
- Never

4 During 2021, how frequently were the key performance indicators **reviewed** by **non-managers** at this establishment?

Non-managers are all employees at the establishment who are not managers as defined in Question 3.

Select all that apply

- Yearly
- Quarterly
- Monthly
- Weekly
- Daily
- Hourly or more frequently
- Never

5 During 2021, where were the production display boards showing output and other key performance indicators located at this establishment?

- All display boards were located in one place (e.g. at the end of the production line)
- Display boards were located in multiple places (e.g. at multiple stages of the production line)
- We did not have any display boards

6 In 2021, what best describes the time frame of production targets at this establishment?

Examples of production targets are: production, quality, efficiency, waste, on-time delivery.

- Main focus was on short-term (less than one year) production targets
- Main focus was on long-term (more than one year) production targets
- Combination of short-term and long-term production targets
- No production targets (If no production targets, SKIP to Question 13.)

7 In 2021, how easy or difficult was it for this establishment to achieve its production targets?

- Possible to achieve without much effort
- Possible to achieve with some effort
- Possible to achieve with normal amount of effort
- Possible to achieve with more than normal effort
- Only possible to achieve with extraordinary effort

8 In 2021, who was aware of the production targets at this establishment?

- Only senior managers
- Most managers and some production workers
- Most managers and most production workers
- All managers and most production workers

9 In 2021, what were **non-managers'** performance bonuses usually based on at this establishment?

Select all that apply

- Their own performance as measured by production targets
- Their team or shift performance as measured by production targets
- Their establishment's performance as measured by production targets
- Their company's performance as measured by production targets
- No performance bonuses (If no performance bonuses, SKIP to Question 11.)

10 In 2021, when production targets were met, what percent of **non-managers** at this establishment received performance bonuses?

- 0%
- 1-33%
- 34-66%
- 67-99%
- 100%
- Production targets not met

11 In 2021, what were **managers'** performance bonuses usually based on at this establishment?

Select all that apply

- Their own performance as measured by production targets
- Their team or shift performance as measured by production targets
- Their establishment's performance as measured by production targets
- Their company's performance as measured by production targets
- No performance bonuses (If no performance bonuses, SKIP to Question 13.)

12 In 2021, when production targets were met, what percent of **managers** at this establishment received performance bonuses?

- 0%
- 1-33%
- 34-66%
- 67-99%
- 100%
- Production targets not met

13 In 2021, what was the primary way **non-managers** were promoted at this establishment?

- Promotions were based solely on performance and ability
- Promotions were based partly on performance and ability, and partly on other factors (for example, tenure or family connections)
- Promotions were based mainly on factors other than performance or ability (for example, tenure or family connections)
- Non-managers are normally not promoted

14 In 2021, what was the primary way **managers** were promoted at this establishment?

- Promotions were based solely on performance and ability
- Promotions were based partly on performance and ability, and partly on other factors (for example, tenure or family connections)
- Promotions were based mainly on factors other than performance or ability (for example, tenure or family connections)
- Managers are normally not promoted

15 In 2021, when was an under-performing **non-manager** reassigned or dismissed at this establishment?

- Within 6 months of identifying non-manager under-performance
- After 6 months of identifying non-manager under-performance
- Rarely or never

16 In 2021, when was an under-performing **manager** reassigned or dismissed at this establishment?

- Within 6 months of identifying manager under-performance
- After 6 months of identifying manager under-performance
- Rarely or never

SECTION B Organization

17 Was the headquarters for this company at the same location as this establishment?

Yes (If yes, SKIP to Question 21.)

No – If no, what state (if in the US) or country (if abroad)?

18 In 2021, where were the following decisions made for this establishment?

Select one for each row

Decisions	Only at this establishment	Only at headquarters	Both at this establishment and at headquarters	Other
Decisions on hiring permanent full-time employees.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decisions to give an employee a pay increase of at least 10%.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decisions on new product introductions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product pricing decisions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advertising decisions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19 In 2021, where were decisions to use this firm's own employees, contractors, temporary staff, or leased workers for the following activities made for this establishment?

Select one for each row

Activities	Only at this establishment	Only at headquarters	Both at this establishment and at headquarters	Other
Cleaning and janitorial services.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical security services including decisions related to hiring security personnel (for example, guards) and implementing security systems (for example, security cameras or monitoring systems).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direct production.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20 In 2021, what was the dollar amount that could be used to purchase a fixed/capital asset for this establishment without prior authorization from headquarters?

Under \$1,000

\$1,000 to \$9,999

\$10,000 to \$99,999

\$100,000 to \$999,999

\$1 million or more

SECTION C

Costs and Purchased Services

This section relates to the use of **this firm's own employees, contractors, temporary staff, and leased workers**. You will be asked a series of questions about the following categories of business expenses:

- Cleaning and janitorial services
- Repairs and maintenance
- Physical security services
- Transportation, logistics, and distribution services
- Direct production

For **total annual payroll for this firm's own employees**, report the annual payroll for employees at this establishment contributing to this category of business expenses, before deductions.

Include employees' Social Security contributions, withholding taxes, group insurance premiums, union dues, and savings bonds; commissions, dismissal pay, paid bonuses, employee contributions to pension plans such as 401(k), vacation and sick leave pay, and the cash equivalent of compensation paid in kind; spread on stock options that are taxable to employees as wages; salaries of officers of this establishment, if a corporation; paid leave; and non-production bonuses.

Exclude payroll for temporary staff and leased workers (report this figure in **Contractors, temporary staff, and leased workers**); employer's cost for fringe benefits; payments to fisherman, agricultural crews, members of the Armed Forces, and pensioners carried on your active payroll; and payments to proprietors or partners, if this is an unincorporated concern.

For expenses for **contractors, temporary staff, and leased workers**, include the **full cost** of all contracts for this category of expenses. For example, if the contract includes both labor and materials costs, include both.

Contractors can be companies or individuals.

Temporary staff and leased workers include staffing obtained from a staffing service or workers whose payroll was filed under an employee leasing company's EIN.

21 In 2021 and 2019, what were this establishment's expenses for **cleaning and janitorial services** for:

Estimates are acceptable

	2021	2019
Total annual payroll for this firm's own employees?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00
Contractors, temporary staff, and leased workers?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00

22 In 2021 and 2019, what were this establishment's expenses for **repairs and maintenance** for:

Estimates are acceptable

	2021	2019
Total annual payroll for this firm's own employees?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00
Contractors, temporary staff, and leased workers?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00

23 In 2021 and 2019, what were this establishment's expenses for **physical security services** for:

Include expenses for security personnel (for example, guards) and security systems (for example, security cameras or monitoring services).

Estimates are acceptable

	2021	2019
Total annual payroll for this firm's own employees?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00
Contractors, temporary staff, and leased workers?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00

24 In 2021 and 2019, what were this establishment's expenses for **transportation, logistics, and distribution services** for:

Include expenses related to freight in/freight out and use of common carriers.

Estimates are acceptable

	2021	2019
Total annual payroll for this firm's own employees?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00
Contractors, temporary staff, and leased workers?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00

25 In 2021 and 2019, what were this establishment's expenses for **direct production** for:

Estimates are acceptable

	2021	2019
Total annual payroll for this firm's own employees?	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00
Contractors, temporary staff, and leased workers? Include work done by others on your materials (work contracted to others).	\$ <input type="text"/> ,000.00	\$ <input type="text"/> ,000.00

SECTION D

Data, Decision Making, and Artificial Intelligence

26 In 2021, how much of the information related to each of the following functions for this establishment was **stored in a digital format**?

Select one for each row

Functions	None	Up to 50%	More than 50%, but not all	All or nearly all	Function not performed at this establishment
Production scheduling and monitoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality control.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental or safety compliance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment maintenance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply chain management and logistics.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sales forecasting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27 In 2021, who decided what type of digital information (data) to collect for this establishment?

Select all that apply

- Managers at this establishment
- Managers at headquarters and/or other establishments
- Production workers at this establishment
- Engineers at this establishment
- Customers
- Government regulations or agencies
- Consultants (including systems integrators)

28A In 2021, what descriptive analyses of data were **typically** used to support making key decisions at this establishment?

Select all that apply

- Little to no use of descriptive analyses (If little to no use, SKIP to Question 29.)
- Use of summary statistics (examples: maximum, average, count per category, variance)
- Use of trends and comparisons across time periods
- Use of real-time dashboards reflecting current data (possibly along with past data)
- Use of customized or interactive descriptive analysis requested by decision makers

28B In 2021 and 2019, how often did decision makers rely on descriptive analyses of data when making key decisions at this establishment?

Select one for each year

	2021	2019
Did not use.....	<input type="checkbox"/>	<input type="checkbox"/>
Up to 50% of the time	<input type="checkbox"/>	<input type="checkbox"/>
More than 50% of the time, but not all of the time	<input type="checkbox"/>	<input type="checkbox"/>
All or nearly all of the time.....	<input type="checkbox"/>	<input type="checkbox"/>

29 In 2021, what share of **expenses for data processing and other purchased computer services** paid by this establishment was spent on **cloud services**?

Cloud services are services provided by a third party that is accessed on demand via the internet and includes software, storage, platform capabilities, and other digital infrastructure services.

Estimates are acceptable

- None
- Up to 50%
- More than 50% but not all
- All or nearly all
- Not applicable. This establishment did not have expenses for data processing and other purchased computer services in 2021.

30 In 2021, to what extent did this establishment use **predictive analytics** to support each of the following functions?

Predictive analytics are statistical or algorithm-based models that analyze historical and current data to make predictions about future or unknown events in areas such as demand forecasting, production planning, or human resources management.

Select one for each row

Functions	None	Up to 50%	More than 50%, but not all	All or nearly all	Function not performed at this establishment
Production scheduling and monitoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality control.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental or safety compliance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment maintenance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply chain management and logistics.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sales forecasting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31 In 2021, to what extent did this establishment **use artificial intelligence** (including machine learning algorithms in software applications) to support each of the following functions?

Select one for each row

Functions	None	Up to 50%	More than 50%, but not all	All or nearly all	Function not performed at this establishment
Production scheduling and monitoring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality control.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental or safety compliance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment maintenance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply chain management and logistics.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sales forecasting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

32 In 2021, to what extent did this establishment use the following **technical applications of artificial intelligence**?

Artificial intelligence is a machine-based system that can perceive and learn about its environment and then make relevant predictions, recommendations, or decisions for an objective that is determined by humans.

Select one for each row

Applications	Did not use	Testing or piloting only	Up to 50% of direct production	More than 50% of direct production, but not all	All direct production	Don't know
Machine vision.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speech recognition.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Predictive maintenance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Artificial intelligence-enabled industrial robots.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automated guided vehicles (AGV).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

33 In 2019, to what extent did this establishment use the following **technical applications of artificial intelligence**?

Select one for each row

Applications	Did not use	Testing or piloting only	Up to 50% of direct production	More than 50% of direct production, but not all	All direct production	Don't know
Machine vision.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speech recognition.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Predictive maintenance.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Artificial intelligence-enabled industrial robots.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automated guided vehicles (AGV).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34 In 2021, which of the following factors **prevented or delayed the use of artificial intelligence** at this establishment?

Select all that apply

- Difficulty identifying activities or business use cases to which artificial intelligence can be applied
- Uncertainty about government regulations or industry standards
- Level of artificial intelligence expertise or skills at this establishment
- Cost
- Employee attitudes towards artificial intelligence
- None of the above. Artificial intelligence is widely or increasingly used at this establishment.

SECTION E Expectations

The following examples illustrate how a plant could complete the type of questions asked in this section. All examples are fictional. If your forecasts do not include the level of detail requested or do not exist, please report according to your best judgment. **Estimates are acceptable.**

Example A: Jane Doe is filling out this survey for Plant A. In 2021, Plant A had approximately \$4,500,000 in products shipped, with a forecast of \$4,750,000 in 2022.

For calendar years 2021 and 2022, what are the approximate dollar values of products shipped, including interplant transfers, exports, and other receipts at this establishment? Exclude freight charges and excise taxes.

For 2021 calendar year	\$	4,500	,000.00
Estimate for 2022 calendar year.....	\$	4,750	,000.00

Example B: Jane also knows that business at Plant A is forecasted to grow approximately an additional 5% in 2023, with predicted annual value of products shipped of \$5 million. However, Jane knows there is some uncertainty with that forecast and that the value of products shipped next year could be more or less than \$5 million depending on consumer demand, price of materials, and other uncertainties in the market. Given this uncertainty, this is how Jane would complete the following uncertainty forecast table for Plant A's values of products shipped for 2023.

Looking ahead to the 2023 calendar year, what is the approximate dollar value of products shipped you would anticipate for this establishment in the following scenarios, and what likelihood do you assign to each scenario?

2023 scenarios, from lowest to highest	Approximate dollar value of shipments in 2023	Percentage likelihood (values in this column should sum to 100)
LOWEST	\$ 2,800,000.00	5 %
LOW	\$ 4,200,000.00	10 %
MEDIUM	\$ 5,000,000.00	60 %
HIGH	\$ 6,300,000.00	20 %
HIGHEST	\$ 7,500,000.00	5 %
	Total	100 %

35 For calendar years 2021 and 2022, what are the approximate dollar values of **products shipped**, including interplant transfers, exports, and other receipts at this establishment? Exclude freight charges and excise taxes.

For 2021 calendar year.....	\$,000.00
Estimate for 2022 calendar year.....	\$,000.00

36 Looking ahead to the 2023 calendar year, what is the approximate dollar value of **products shipped** you would anticipate for this establishment in the following scenarios, and what likelihood do you assign to each scenario?

2023 scenarios, from lowest to highest	Approximate dollar value of shipments in 2023	Percentage likelihood (values in this column should sum to 100)			
LOWEST	\$,000.00		%
LOW	\$,000.00		%
MEDIUM	\$,000.00		%
HIGH	\$,000.00		%
HIGHEST	\$,000.00		%
	Total	100			%

37 For the following dates, what was the total number of **employees** (full-time plus part-time) on the payroll at this establishment? Exclude full- or part-time leased employees whose payroll was filed by an employee leasing company, temporary staffing obtained from a staffing service, and purchased professional and technical services.

	Number
On March 12, 2021.....	
On March 12, 2022.....	

38 Looking ahead to the 2023 calendar year, approximately how many **employees** would you anticipate on this establishment's payroll as of March 12, 2023 in the following scenarios, and what likelihood do you assign to each scenario?

2023 scenarios, from lowest to highest	Approximate number of employees on payroll as of March 12, 2023	Percentage likelihood (values in this column should sum to 100)
LOWEST		
LOW		
MEDIUM		
HIGH		
HIGHEST		
Total		100

SECTION F
Background Characteristics

39 What year did you start working at this establishment?.....

Year
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

40 What was the number of **managers** at this establishment for the pay period including March 12, 2021?
A manager is someone who has employees reporting directly to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with, e.g., Plant Manager, Human Resource Manager, Quality Manager.

Estimates are acceptable

Number of managers at this establishment.....

Number

41 In 2021, what was the percent of **managers** at this establishment with a bachelors degree?

- 20% or less
- 21-40%
- 41-60%
- 61-80%
- More than 80%

42 In 2021, what was the percent of **non-managers** at this establishment with a bachelors degree?

- 0%
- 1-10%
- 11-20%
- More than 20%

43 In 2021, what percent of all **employees** at this establishment were members of a labor union?

- 0%
- 1-20%
- 21-40%
- 41-60%
- 61-80%
- More than 80%

44 In 2021, which of the following **best** described the production of this establishment?

- Job shop
- Batch production
- Cellular manufacturing
- Continuous flow (other than cellular manufacturing)
- Research and development or prototyping

45 In 2021, was this establishment part of a firm which had production establishments in other countries?

- Yes
- No

46 In 2021, did your company retain an external Certified Public Accountant to conduct an audit, review, or compilation of its financial statements?

An **audit** is the examination of an entity's accounting records and the physical inspection of the company's assets. The audit is conducted by a certified public accountant who reports the results of the audit in a written audit opinion given to the company.

A **review** is a reduced form of an audit. The main difference between a review and an audit is that the review does not involve any tests of balances, which are a core part of the steps involved in an audit. This means there are no independent verifications of the client's account balances.

A **compilation** refers to a company's financial statements that have been prepared or compiled by an outside accountant. Unlike a review or audit, in a compilation the outside accountant only converts the client's data into financial statements without providing any assurances or auditing services.

- Yes - To conduct an audit
- Yes - To conduct a review
- Yes - To conduct a compilation
- No (If no, SKIP to Question 49.)
- Do not know (If do not know, SKIP to Question 49.)

