

Codebook

India Firm-level Adoption of Technology (FAT) Survey

Variable Name	Variable Label	Variable Type	Answer Code	Answer Label
firm_id	Firm ID	double		Open ended
firmid	Firm ID	long		Open ended
country	Country	String		Open ended
survey_year	Survey Year	String		Open ended
base_wt	Sampling Weight	Numeric		Open ended
formality	Formal Sector	Numeric		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s1a	Sampling sector	String		Open ended
s1b	Sampling size	String		Open ended
s1c	Sampling location	String		Open ended
s2e	State/Province	String		Open ended
s2f	Country	String		Open ended
s3a	Formal Registration	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s3b	State Owned	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s3c	Worker Owned	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s4	Multi-Establishment	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s4a	No. of establishments	double		
			-9	Don't Know
			-7	Not Applicable
s7	Screener employment size	double		
			-9	Don't Know
			-7	Not Applicable
			-1000000000	missing

ref_year1	Reference Year 1	String	Open ended
ref_year2	Reference Year 2	String	Open ended
a3a	Private domestic ownership %	double	-9 Don't Know -7 Not Applicable
a3b	Private foreign ownership %	double	-9 Don't Know -7 Not Applicable
a3c	Government or state ownership %	double	-9 Don't Know -7 Not Applicable
a3d	Other ownership %	double	-9 Don't Know -7 Not Applicable
a4a	Publicly Traded	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
a4b	Founder - Ownership	double	-9 Don't know -7 Not applicable 1 Founder 2 Founder's family 3 No
a4c	Founder - Top Manager	double	-9 Don't know -7 Not applicable 1 Founder 2 Founder's family 3 No
a4d	Largest Owner - Top Manager	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
a4e	Female Owner	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
a4f	Female Ownership %	double	-9 Don't Know

a5a	Sector - group	double	-7 Not Applicable 1 Agriculture 2 Livestock 3 Food Processing 4 Wearing apparel 5 Motor vehicles 6 Pharmaceuticals 7 Wholesale or retail 8 Financial services 9 Land transport 10 Health services 11 Leather goods 12 Accommodation 13 Bricks 14 Cement 15 Iron and Steel 101 Other manufacturing 102 Other services
a6	Year of beginning operations	double	-9 Don't Know -7 Not Applicable
a7a	Top Manager - Experience Same Sector	double	-9 Don't Know -7 Not Applicable
a7b	Top Manager - Female	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
a7c	Top Manager - Highest Education	double	-9 Don't know 1 Primary school 2 Secondary school 3 Complete high-school 4 College degree 5 Post-Graduation (MBA, Master or PhD) 6 Vocational training
a7d	Top Manager - Studied Abroad	double	-9 Don't Know -7 Not Applicable 1 Yes

b10a	Supply Mgt. - MOST used method	double	2 No 1 Suppliers - manual search 2 Suppliers - management of supply chain info 3 Suppliers - online social media 4 Suppliers - SRM (not integrated w prod planning) 5 Suppliers - SRM (integrated w prod planning) 6 Suppliers - other
b10a1	Suppliers - manual search	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b10a2	Suppliers - management of supply chain info	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b10a3	Suppliers - online social media	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b10a4	Suppliers - SRM (not integrated w prod planning)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b10a5	Suppliers - SRM (integrated w prod planning)	double	-9 Don't Know -7 Not Applicable

b10a6	Suppliers - other	double	1 Yes 2 No -9 Don't Know -7 Not Applicable 1 Yes 2 No
b10b	Searching employees - Procedure	double	-9 Don't know 1 Direct reference 2 Job search announcements (newspapers and magazines) 3 Job search online networks 4 Job search announcements (own website) 5 Recruitment agencies 6 Other
b10c	Years using b10a4, b10a5	double	-9 Don't Know -7 Not Applicable
b11a1	Marketing - Face to Face Chat	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b11a2	Marketing - Online Chat	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b11a3	Marketing - Structured Surveys	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b11a4	Marketing - CRM	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

b11a5	Marketing - Big Data Analytics	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b11a6	Marketing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b11b	Marketing - MOST used method	double	1 Marketing - Face to Face Chat 2 Marketing - Online Chat 3 Marketing - Structured Surveys 4 Marketing - CRM 5 Marketing - Big Data Analytics 6 Marketing - Other
b11c	Years using b11a4, b11a5	double	-9 Don't Know -7 Not Applicable
b12a1	Fabrication - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12a2	Fabrication - Machines w/o computer	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12a3	Fabrication - Computer	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12a4	Fabrication - Robots	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

b12a5	Fabrication - Additive manufacturing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12a6	Fabrication - Other Adv. Processes	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12a7	Fabrication - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b12b	Fabrication - MOST used method	double	1 Fabrication - Manual 2 Fabrication - Machines w/o computer 3 Fabrication - Computer 4 Fabrication - Robots 5 Fabrication - Additive manufacturing 6 Fabrication - Other Adv. Processes 7 Fabrication - Other
b12c	Years using b12a3, b12a4, b12a5, b12a6	double	-9 Don't Know -7 Not Applicable
b13a	Direct sale	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b1	Sales - Establishment Premises	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b2	Sales - Phone, email or sales representatives	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
b13b3	Sales - Social media platforms/apps	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b4	Sales - Online Sales (ext. dig. platforms)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b5	Sales - Online Sales (own website)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b6	Sales - Electronic orders	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13b7	Sales - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b13c	Sales - MOST used method	double	1 Sales - Establishment Premises 2 Sales - Phone, email or sales representatives 3 Sales - Social media platforms/apps 4 Sales - Online Sales (ext. dig. platforms) 5 Sales - Online Sales (own website) 6 Sales - Electronic orders 7 Sales - Other
b13d	Years using b12b4, b13b5, b13b6	double	

b13e1	Sales share (%) - online (ext. dig.)	double	-9 Don't Know -7 Not Applicable
b13e2	Sales share (%) - online (own website)	double	-9 Don't Know -7 Not Applicable
b13e3	Sales share (%) - electronic orders	double	-9 Don't Know -7 Not Applicable
b14a1	Payment - goods exchange	double	-9 Don't Know -7 Not Applicable
b14a2	Payment - cash	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b14a3	Payment - Cheque, voucher, bank wire	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b14a4	Payment - Cards	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b14a5	Payment - Online/electronic	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b14a6	Payment - Online (platforms)	double	-9 Don't Know -7 Not Applicable 1 Yes

b14a7	Payment - Cryptocurrency	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b14a8	Payment - Other	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b14b	Payment - MOST used method	double	1 Payment - goods exchange
			2 Payment - cash
			3 Payment - Cheque, voucher, bank wire
			4 Payment - Cards
			5 Payment - Online/electronic
			6 Payment - Online (platforms)
			7 Payment - Cryptocurrency
			8 Payment - Other
b14c	Years using b14a5, b14a6	double	-9 Don't Know
			-7 Not Applicable
b15a1	Quality Control - Manual, Visual or Written	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15a2	Quality Control - Human Inspection	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15a3	Quality Control - Statistical Control	double	-9 Don't Know
			-7 Not Applicable
			1 Yes

b15a4	Quality Control - Automated	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15a5	Quality Control - Other	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15b	Quality Control - MOST used method	double	1 Quality Control - Manual, Visual or Written
			2 Quality Control - Human Inspection
			3 Quality Control - Statistical Control
			4 Quality Control - Automated
			5 Quality Control - Other
b15c	Years using b15a4, b15a5	double	-9 Don't Know
			-7 Not Applicable
b15c1	Qual. mgt. - Business certification	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15c2	Qual. mgt. - Six sigma	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15c3	Qual. mgt. - TQM	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
b15c4	Qual. mgt. - Lean, Just-in-Time, or Kaizen	double	-9 Don't Know
			-7 Not Applicable

b1a	Electrical Connection	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
b1b	Power Outages - Year	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
b1c	Power Outages - Monthly	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
b1d	Length of power outages- hours	double	-9 Don't Know -7 Not Applicable
b1e	Length of power outages- minutes	double	-9 Don't Know -7 Not Applicable
b2a	Own/Share Generator	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b2b	Generator - share of electricity %	double	-9 Don't Know -7 Not Applicable
b2c	Main source of energy	double	-9 Don't know 1 Solar power 2 Fuel 3 Grid or Battery-stored backup 4 Wind power 5 Other 6 Gas
b3a	No. of telephone lines	double	-9 Don't Know -7 Not Applicable
b3b	No. of mobile lines	double	-9 Don't Know

b4a	No. of Desktop or Laptops	double	-7 Not Applicable
b4b	No. of Tablets or Smartphones	double	-9 Don't Know -7 Not Applicable
b5a	Internet connection	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b5b	Fastest Internet Connection	double	-9 Don't know 1 Dial up 2 DSL or Fiber 3 Wireless or Satellite 4 BPL 5 Lease Line 6 Other
b5c	No. of internet service downs	double	-100 Too many to count -9 Don't Know 1 Less than one
b5d	Length of the Internet service down-hours	double	-9 Don't Know -7 Not Applicable
b5e	Length of the Internet service down-minutes	double	-9 Don't Know -7 Not Applicable
b5f	Own Website	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b5g	Online Social Media	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b5h	Cloud Computer Services	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
b6a	Water Connection	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b7a	Production compared to other firms in country	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b7b	Production compared to other firms in world	double	-9 Don't Know -7 Not Applicable
b8a1	Business Administration - Handwritten Processes	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b8a2	Business Administration - Computers (standard softwares)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b8a3	Business Administration - Mobile Apps or Digital Platform	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b8a4	Business Administration - Computers (specialised softwares)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b8a5	Business Administration - ERP	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
b8a6	Business Administration - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b8b	Business Administration - MOST used method	double	1 Business Administration - Handwritten Processes 2 Business Administration - Computers (standard softwares) 3 Business Administration - Mobile Apps or Digital Platform 4 Business Administration - Computers (specialised softwares) 5 Business Administration - ERP 6 Business Administration - Other
b8c	Years using b8a4, b8a5	double	-9 Don't Know -7 Not Applicable
b9a1	Production Planning - Handwritten processes	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b9a2	Production Planning - Computers (standard softwares)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

b9a3	Production Planning - Mobile Apps or digital platforms	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b9a4	Production Planning - Specialized software	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b9a5	Production Planning - ERP	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b9a6	Production Planning - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b9b	Production Planning - MOST used method	double	1 Production Planning - Handwritten processes 2 Production Planning - Computers (standard softwares) 3 Production Planning - Mobile Apps or digital platforms 4 Production Planning - Specialized software 5 Production Planning - ERP 6 Production Planning - Other
b9c	Years using b9a4, b9a5	double	-9 Don't Know -7 Not Applicable
c1_0a1	Crops: Info. sources - Radio	double	-9 Don't Know

			-7 Not Applicable
			1 Yes
			2 No
c1_0a2	Crops: Info. sources - TV	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0a3	Crops: Info. sources - Non-internet mobile	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0a4	Crops: Info. sources - Mobile internet tech	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0a5	Crops: Info. sources - Meet other producers	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0a6	Crops: Info. sources - Pub. or Pvt. agent visit	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0a7	Crops: Info. sources - Precision agriculture	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0b1	Crops: Info. sources - MOST relevant source	double	1 Crops: Info. sources - Radio
			2 Crops: Info. sources - TV
			3 Crops: Info. sources - Non-internet mobile
			4 Crops: Info. sources - Mobile internet tech

			5 Crops: Info. sources - Meet other producers
			6 Crops: Info. sources - Pub. or Pvt. agent visit
			7 Crops: Info. sources - Precision agriculture
			8 Crops: Info. sources - Others
c1_0c1	Crops: N acres OWNED	double	-9 Don't Know
			-7 Not Applicable
c1_0c2	Crops: N acres RENTED or LEASED FROM OTHERS	double	-9 Don't Know
			-7 Not Applicable
c1_0c3	Crops: N acres RENTED or LEASED TO OTHERS	double	-9 Don't Know
			-7 Not Applicable
c1_0c4	Crops: N acres available - Total	double	-9 Don't Know
			-7 Not Applicable
c1_0c5	N tractors owned	double	-9 Don't Know
			-7 Not Applicable
c1_0c6	Rent tractor, equipment, or machines	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0c7	Use digital or online platform for c1_0c6	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_0d1	Main source of seeds used	double	-9 Don't know
			1 Own production
			2 Private providers
			3 Public programs
			4 Other
c1_0d2	Pre-treatment to seeds	double	-9 Don't Know

			-7 Not Applicable
			1 Yes
			2 No
c1_1a1	Land prep - own workers	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1a2	Land prep - outsourced (another unit - same enterprise)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1a3	Land prep - outsourced (other workers or enterprise)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1b1	Land prep - Manual plowing (simple tools)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1b2	Land prep - Animal Aided	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1b3	Land prep - Manually operated machines	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1b4	Land prep - Digitally operated tractors or equipment	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_1b5	Land prep - Other	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_1c	Land prep - MOST used method	double	-9 Don't Know 1 Land prep - Manual plowing (simple tools) 2 Land prep - Animal Aided 3 Land prep - Manually operated machines 4 Land prep - Digitally operated tractors or equipment 5 Land prep - Other
c1_1d	Years using c1_1b4	double	-9 Don't Know -7 Not Applicable
c1_2a1	Product requires irrigation	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b1	Irrig.- Rain-fed, no additional irrig.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b2	Irrig. - Manual irrig.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b3	Irrig. - Surface Flood Irrig.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b4	Irrig. - Small Pump	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c1_2b5	Irrig. - Drip, localized, underground, Sprinkler, centre pivot	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b6	Irrig. - Automated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2b7	Irrig.- Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_2c	Irrig. - MOST used method	double	1 Irrig.- Rain-fed, no additional irrig. 2 Irrig. - Manual irrig. 3 Irrig. - Surface Flood Irrig. 4 Irrig. - Small Pump 5 Irrig. - Drip, localized, underground, Sprinkler, centre pivot 6 Irrig. - Automated 7 Irrig.- Other
c1_2d	Years using c1_2b5, c1_2b6	double	-9 Don't Know -7 Not Applicable
c1_3a1	Weeding/pest control - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3a2	Weeding/pest control - outsourced (another unit - same enterprise)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c1_3a3	Weeding/pest control - outsourced (another enterprise)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b1	Weeding/pest control - Manual application	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b2	Weeding/pest control - Mechanical application	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b3	Weeding/pest control - Biological methods	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b4	Weeding/pest control - Precision agriculture	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b5	Weeding/pest control - Advanced precision agriculture	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3b6	Weeding/pest control - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_3c	Weeding/pest control - MOST used method	double	

			1 Weeding/pest control - Manual application
			2 Weeding/pest control - Mechanical application
			3 Weeding/pest control - Biological methods
			4 Weeding/pest control - Precision agriculture
			5 Weeding/pest control - Advanced precision agriculture
			6 Weeding/pest control - Other
c1_3d	Years using c1_3b6, c1_3b7	double	
			-9 Don't Know
			-7 Not Applicable
c1_3e	Use organic or chemicals for weeding/pest control	double	
			-9 Don't know
			1 Organic
			2 Chemical
			3 Both
c1_4a1	Harvesting, training or pruning - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_4a2	Harvesting, training or pruning - outsourced (another unit - same enterprise)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_4a3	Harvesting, training or pruning - outsourced (another enterprise)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_4b1	Harvesting, training, or pruning - Manual	double	
			-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c1_4b2	Harvesting, training, or pruning - Animal Aided	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_4b3	Harvesting, training, or pruning - Human-operated machines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_4b4	Harvesting, training, or pruning - Manually mechanised	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_4b5	Harvesting, training, or pruning - Digitally automated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_4b6	Harvesting, training, or pruning - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_4c	Harvesting, training, or pruning - MOST used method	double	-9 Don't know 1 Harvesting, training, or pruning - Manual 2 Harvesting, training, or pruning - Animal Aided 3 Harvesting, training, or pruning - Human-operated machines

			4 Harvesting, training, or pruning - Manually mechanised
			5 Harvesting, training, or pruning - Digitally automated
			6 Harvesting, training, or pruning - Other
c1_4d	Years using c1_4b4, c1_4b5	double	
			-9 Don't Know
			-7 Not Applicable
c1_5a1	Storage - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_5a2	Storage - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_5a3	Storage - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_5b1	Storage facility - Precarious	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_5b2	Storage facility - Protected (w/o temp. control)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c1_5b3	Storage facility - Special Storage (temp. control)	double	
			-9 Don't Know
			-7 Not Applicable

			1 Yes 2 No
c1_5b4	Storage facility - High-end central storage	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_5b5	Storage facility - Cont. temp. monitoring	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_5b6	Storage facility - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_5c	Storage facility - MOST used	double	-9 Don't know 1 Storage facility - Precarious 2 Storage facility - Protected (w/o temp. control) 3 Storage facility - Special Storage (temp. control) 4 Storage facility - High-end central storage 5 Storage facility - Cont. temp. monitoring 6 Storage facility - Other
c1_5d	Years using c1_5b3, c1_5b4, c1_5b5	double	-9 Don't Know -7 Not Applicable
c1_6a1	Packing - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6a2	Packing - outsourced (another unit - same firm)	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c1_6a3	Packing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6b1	Packing - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6b2	Packing - Human-operated mech. equip.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6b3	Packing - Automated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6b4	Packing - Modified atmosphere	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6b5	Packing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c1_6c	Packing - MOST used method	double	1 Packing - Manual 2 Packing - Human-operated mech. equip. 3 Packing - Automated 4 Packing - Modified atmosphere 5 Packing - Other
c1_6d	Years using c1_6b, c1_6b4	double	-9 Don't Know

c2_0a1	Livestock: Info sources - Radio	double	-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a2	Livestock: Info sources - TV	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a3	Livestock: Info sources - Non-internet mobile	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a4	Livestock: Info sources - Mobile internet tech	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a5	Livestock: Info sources - Meet other producers	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a6	Livestock: Info sources - Pub or pvt agen visits	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0a7	Livestock: Info sources - Precision agri tools	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_0b	Livestock: Info sources - MOST relevant source	double	
			-9 Don't Know

			1 Livestock: Info sources - Radio
			2 Livestock: Info sources - TV
			3 Livestock: Info sources - Non-internet mobile
			4 Livestock: Info sources - Mobile internet tech
			5 Livestock: Info sources - Meet other producers
			6 Livestock: Info sources - Pub or pvt agen visits
			7 Livestock: Info sources - Precision agri tools
			8 Livestock: Info sources - Others
c2_0c1	Livestocks: No. of acres OWNED	double	
			-9 Don't Know
			-7 Not Applicable
c2_0c2	Livestocks: No. of acres RENTED or LEASED FROM OTHERS	double	
			-9 Don't Know
			-7 Not Applicable
c2_0c3	Livestocks: No. of acres RENTED or LEASED TO OTHERS	double	
			-9 Don't Know
			-7 Not Applicable
c2_0c4	Livestocks: No. of acres OPERATES Total	double	
			-9 Don't Know
			-7 Not Applicable
c2_0d	Process production - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_1a1	Breeding/genetic - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c2_1a2	Breeding/genetic - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1a3	Breeding/genetic - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1b1	Breeding/genetic - Breed substitution	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1b2	Breeding/genetic - Inbreeding or Crossbreeding	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1b3	Breeding/genetic - Artificial insemination (AI)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1b4	Breeding/genetic - Selective breeding	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1b5	Breeding/genetic - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_1c	Breeding/genetic - MOST used method	double	

				-9 Don't Know 1 Breeding/genetic - Breed substitution 2 Breeding/genetic - Inbreeding or Crossbreeding 3 Breeding/genetic - Artificial insemination (AI) 4 Breeding/genetic - Selective breeding 5 Breeding/genetic - Other
c2_1d	Years using c2_1b3, c2_1b4	double		
c2_2a1	Animal nutrition/feeding - in house	double		-9 Don't Know -7 Not Applicable
c2_2a2	Animal nutrition/feeding-outsourced (another unit - same firm)	double		-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2a3	Animal nutrition/feeding - outsourced (another firm)	double		-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b1	Animal nutrition - Household waste or fibrous crop residues	double		-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b2	Animal nutrition - Natural grasslands and pastures	double		-9 Don't Know -7 Not Applicable 1 Yes 2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b3	Animal nutrition - Integrated crop-livestock systems	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b4	Animal nutrition - Production of forage crops	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b5	Animal nutrition - Production of supplementary feed	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b6	Animal nutrition - Manu. or mixing of feed	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b7	Animal nutrition - Prod. of genetically-modified feed	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2b8	Animal nutrition - Other	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_2c	Animal nutrition - MOST used method	double	
			-9 Don't Know

			1 Animal nutrition - Household waste or fibrous crop residues
			2 Animal nutrition - Natural grasslands and pastures
			3 Animal nutrition - Integrated crop-livestock systems
			4 Animal nutrition - Production of forage crops
			5 Animal nutrition - Production of supplementary feed
			6 Animal nutrition - Manu. or mixing of feed
			7 Animal nutrition - Prod. of genetically-modified feed
			8 Animal nutrition - Other
c2_2d	Years using c2_2b5, c2_2b6, c2_2b7	double	-9 Don't Know
			-7 Not Applicable
c2_3a1	Animal healthcare - in house	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_3a2	Animal healthcare - outsourced (another unit - same firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_3a3	Animal healthcare - outsourced (another firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_3b1	Animal healthcare - Rapid diagnostic tests	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3b2	Animal healthcare - Pest sprays	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3b3	Animal healthcare - Vaccines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3b4	Animal healthcare - DNA or RNA vaccine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3b5	Animal healthcare - Disease med.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3b6	Animal healthcare - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_3c	Animal healthcare - MOST used method	double	-9 Don't Know 1 Animal healthcare - Rapid diagnostic tests 2 Animal healthcare - Pest sprays 3 Animal healthcare - Vaccines 4 Animal healthcare - DNA or RNA vaccine 5 Animal healthcare - Disease med.

			6 Animal healthcare - Other
c2_3d	Years using c2_3b3, c2_3b4	double	
			-9 Don't Know
			-7 Not Applicable
c2_4a1	Herd mgt/monitoring - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4a2	Herd mgt/monitoring - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4a3	Herd mgt/monitoring - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4b1	Herd mgt/monitoring - Human	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4b2	Herd mgt/monitoring - Animal-aided	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4b3	Herd mgt/monitoring - Feedlots or grazing	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c2_4b4	Herd mgt/monitoring - Automated cameras/video	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_4b5	Herd mgt/monitoring - Unmanned aerial	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_4b6	Herd mgt/monitoring - Analog tracking	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_4b7	Herd mgt/monitoring - Digital tracking	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_4b8	Herd mgt/monitoring - Other	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_4c	Herd mgt/monitoring - MOST used method	double	
			-9 Don't Know 1 Herd mgt/monitoring - Human 2 Herd mgt/monitoring - Animal-aided 3 Herd mgt/monitoring - Feedlots or grazing 4 Herd mgt/monitoring - Automated cameras/video 5 Herd mgt/monitoring - Unmanned aerial 6 Herd mgt/monitoring - Analog tracking 7 Herd mgt/monitoring - Digital tracking

			8	Herd mgt/monitoring - Other
c2_4d	Years using c2_4b5, c2_4b6, c2_4b7	double		
			-9	Don't Know
			-7	Not Applicable
c2_5a1	Transp. livestock - in house	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5a2	Transp. livestock - outsourced (another unit - same enterprise)	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5a3	Transp. livestock - outsourced (another enterprise)	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5b1	Transp. livestock - Manual	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5b2	Transp. livestock - Non-motorized vehicles	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5b3	Transp. livestock - Motorized vehicles	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c2_5b4	Transp. livestock - Specialized/climate-controlled vehicles	double		

c2_5b5	Transp. livestock - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_5c	Transp. - MOST used method	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c2_5d	Years using c2_5b4	double	-9 Don't Know 1 Transp. livestock - Manual 2 Transp. livestock - Non-motorized vehicles 3 Transp. livestock - Motorized vehicles 4 Transp. livestock - Specialized/climate-controlled vehicles 5 Transp. livestock - Other
c3_0a1	Regulated/inspected by govt. agency	double	-9 Don't Know -7 Not Applicable
c3_0a2	Main agency regulating	String	-9 Don't Know -7 Not Applicable 1 Yes 2 No Open ended
c3_0b1	Finished - shelf stable	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_0b2	Finished - fresh/perishable	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_1a1	Input testing - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
			-9 Don't Know -7 Not Applicable

			1 Yes
			2 No
c3_1a2	Input testing - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1a3	Input testing - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1b1	Input testing - Sensory	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1b2	Input testing - Review of supplier testing	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1b3	Input testing - Non- computer-controlled	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1b4	Input testing - Computer testing	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1b5	Input testing - Other	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_1c	Input testing - MOST used method	double	
			-9 Don't Know

			1 Input testing - Sensory 2 Input testing - Review of supplier testing 3 Input testing - Non-computer-controlled 4 Input testing - Computer testing 5 Input testing - Other
c3_1d	Years using c3_1b4	double	-9 Don't Know -7 Not Applicable
c3_2a1	Food prep. - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_2a2	Food prep. - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_2a3	Food prep. - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_2b1	Food prep. - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_2b2	Food prep. - Mech. equipment (human force)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_2b3	Food prep. - Power equipment (human interaction)	double	-9 Don't Know -7 Not Applicable 1 Yes

c3_2b4	Food prep. - Power equipment (computers or robotics, minimal int.)	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_2b5	Food prep. - Other	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_2c	Food prep. - MOST used method	double	-9 Don't Know
			1 Food prep. - Manual
			2 Food prep. - Mech. equipment (human force)
			3 Food prep. - Power equipment (human interaction)
			4 Food prep. - Power equipment (computers or robotics, minimal int.)
			5 Food prep. - Other
c3_2d	Years using c3_2b3, c3_2b4	double	-9 Don't Know
			-7 Not Applicable
c3_3a1	Anti-bacterial - in house	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_3a2	Anti-bacterial - outsourced (another unit - same firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_3a3	Anti-bacterial - outsourced (another firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3b1	Anti-bacterial - Minimal-processing preservation	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3b2	Anti-bacterial - Anti-bacterial wash or soaking	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3b3	Anti-bacterial - Thermal Processing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3b4	Anti-bacterial - Other adv. methods	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3b5	Anti-bacterial - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_3c	Anti-bacterial - MOST used method	double	-9 Don't Know 1 Anti-bacterial - Minimal-processing preservation 2 Anti-bacterial - Anti-bacterial wash or soaking 3 Anti-bacterial - Thermal Processing 4 Anti-bacterial - Other adv. methods 5 Anti-bacterial - Other

c3_3d	Years using c3_3b3, c3_3b4	double	-9 Don't Know -7 Not Applicable
c3_4a1	Food pkg. - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4a2	Food pkg. - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4a3	Food pkg. - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4b1	Food pkg. - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4b2	Food pkg. - Human-operated mech. equip.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4b3	Food pkg. - Power equip. (human interaction)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4b4	Food pkg. - Power equip. (comp./robotics, min. human int.)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4b5	Food pkg. - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_4c	Food pkg. - MOST used method	double	-9 Don't Know 1 Food pkg. - Manual 2 Food pkg. - Human-operated mech. equip. 3 Food pkg. - Power equip. (human interaction) 4 Food pkg. - Power equip. (comp./robotics, min. human int.) 5 Food pkg. - Other
c3_4d	Years using c3_4b3, c_3b4	double	-9 Don't Know -7 Not Applicable
c3_5a1	Store food - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5a2	Store food - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5a3	Store food - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5b1	Food storage - Minimal protection (some exposure)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c3_5b2	Food storage - Ambient conditions (closed building)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5b3	Food storage - Some climate control (secured building)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5b4	Food storage - Automated climate (security-controlled building)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5b5	Food storage - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c3_5c	Food storage - MOST used method	double	-9 Don't Know 1 Food storage - Minimal protection (some exposure) 2 Food storage - Ambient conditions (closed building) 3 Food storage - Some climate control (secured building) 4 Food storage - Automated climate (security-controlled building) 5 Food storage - Other
c3_5d	Years using c3_5b3, c3_5b4	double	-9 Don't Know

c4_0a1	Prod. material - Printed fabric	double	-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0a2	Prod. material - White fabric	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0a3	Prod. material - Fabric threads	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0a4	Prod. material - Other	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0b1	Garments prod.- Basic	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0b2	Garments prod. - Fashion	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0b3	Garments prod. - Sports	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0b4	Garments prod. - Protective apparel	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_0b5	Garments prod. - Other	double	
			-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c4_0c1	Finishes - Silk screen	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_0c2	Finishes - Embroidery	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_0c3	Finishes - Washing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_0c4	Finishes - Waterproofing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_0c5	Finishes - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1a1	Provide files for design	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1a2	Most common file provid.	double	-9 Don't know 1 Graded file of all sizes ready to cut 2 A prototype cutting file for grading 3 Hand drawing of the design 4 Computer drawing of the design 5 3D file of the design 6 Other
c4_1a3	Design drawing - in house	double	

c4_1a4	Design drawing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1a5	Design drawing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1b1	Design drawing - Manual/hand-draw	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1b2	Design drawing - Digital/semi-digital design	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1b3	Design drawing - CAD	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1b4	Design drawing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_1c	Design drawing - MOST used method	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c4_1d	Years using c4_1b2, c4_1b3	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2a1	Cutting - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2a2	Cutting - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2a3	Cutting - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2b1	Cutting - Manual cutting	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2b2	Cutting - Cutting machine (manually operated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2b3	Cutting - Semi-Automatic cutting machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2b4	Cutting - Automatic/Computerized cutting machine (no Laser)	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c4_2b5	Cutting - Automatic/Computerized cutting machine (Laser)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2b6	Cutting - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_2c	Cutting - MOST used method	double	-9 Don't know 1 Cutting - Manual cutting 2 Cutting - Cutting machine (manually operated) 3 Cutting - Semi-Automatic cutting machine 4 Cutting - Automatic/Computerized cutting machine (no Laser) 5 Cutting - Automatic/Computerized cutting machine (Laser) 6 Cutting - Other
c4_2d	Years using c4_2b4, c4_2b5	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3a1	Sewing - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c4_3a2	Sewing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3a3	Sewing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b1	Sewing - Manually	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b2	Sewing - Machine (manually operated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b3	Sewing - Semi-automated machines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b4	Sewing - Automated machines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b5	Sewing - 3D Knitting	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_3b6	Sewing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c4_3c	Sewing - MOST used method	double	-9 Don't know 1 Sewing - Manually 2 Sewing - Machine (manually operated) 3 Sewing - Semi-automated machines 4 Sewing - Automated machines 5 Sewing - 3D Knitting 6 Sewing - Other
c4_3d	Years using c4_3b3, c4_3b4, c4_3b5	double	-9 Don't Know -7 Not Applicable
c4_4a1	Finishing/ironing- in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4a2	Finishing/ironing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4a3	Finishing/ironing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4b1	Finishing/ironing - Basic manual ironing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4b2	Finishing/ironing - Electric high-pressure steam iron	double	-9 Don't Know -7 Not Applicable

			1 Yes 2 No
c4_4b3	Finishing/ironing - Tunnel finisher	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4b4	Finishing/ironing - Form finishing machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4b5	Finishing/ironing - High tech pressing machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4b6	Finishing/ironing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c4_4c	Finishing/ironing - MOST used method	double	-9 Don't know 1 Finishing/ironing - Basic manual ironing 2 Finishing/ironing - Electric high-pressure steam iron 3 Finishing/ironing - Tunnel finisher 4 Finishing/ironing - Form finishing machine 5 Finishing/ironing - High tech pressing machine 6 Finishing/ironing - Other
c4_4d	Years using c4_4b3, c4_4b4, c4_4b5	double	-9 Don't Know -7 Not Applicable
c5_1a1	Assemble vehicles - in house	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1a2	Assemble vehicles - outsourced (another unit - same firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1a3	Assemble vehicles - outsourced (another firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b1	Assembly/fabrication - Machines (controlled by operators)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b2	Assembly/fabrication - FMC or FMS	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b3	Assembly/fabrication - Lasers (materials processing)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b4	Assembly/fabrication - CNC machinery	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b5	Assembly/fabrication - Robots	double	
			-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c5_1b6	Assembly/fabrication - Additive manufacturing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1b7	Assembly/fabrication - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_1c	Assembly/fabrication- MOST used method	double	-9 Don't know 1 Assembly/fabrication - Machines (controlled by operators) 2 Assembly/fabrication - FMC or FMS 3 Assembly/fabrication - Lasers (materials processing) 4 Assembly/fabrication - CNC machinery 5 Assembly/fabrication - Robots 6 Assembly/fabrication - Additive manufacturing 7 Assembly/fabrication - Other
c5_1d	Years using c5_1b4, c5_1b5, c5_1b6	double	-9 Don't Know -7 Not Applicable
c5_2a1	Body press/welding - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2a2	Body press/welding - outsourced (another unit - same firm)	double	

c5_2a3	Body press/welding - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b1	Body press/welding - Pressing of skin panels (operators)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b2	Body press/welding - Pressing of structural components (operators)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b3	Body press/welding - Welding of main body (operators)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b4	Body press/welding - Pressing of skin panels (automated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b5	Body press/welding - Pressing of structural components (automated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c5_2b6	Body press/welding - Welding of main body (automated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2b7	Body press/welding - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_2c	Pressing/welding method - MOST used method	double	-9 Don't know 1 Body press/welding - Pressing of skin panels (operators) 2 Body press/welding - Pressing of structural components (operators) 3 Body press/welding - Welding of main body (operators) 4 Body press/welding - Pressing of skin panels (automated) 5 Body press/welding - Pressing of structural components (automated) 6 Body press/welding - Welding of main body (automated) 7 Body press/welding - Other
c5_2d	Years using c5_2b4, c5_2b5 ,c5_2b6	double	-9 Don't Know -7 Not Applicable
c5_3a1	Painting - in house	double	-9 Don't Know -7 Not Applicable 1 Yes

c5_3a2	Painting - outsourced (another unit - same firm)	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3a3	Painting - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3b1	Painting - Water-based painting (operators)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3b2	Painting - Solvent-based painting (operators)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3b3	Painting - Water-based painting (automated)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3b4	Painting - Solvent-based painting (automated)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3b5	Painting - Other	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_3c	Painting - MOST used method	double	
			-9 Don't know

			1 Painting - Water-based painting (operators)
			2 Painting - Solvent-based painting (operators)
			3 Painting - Water-based painting (automated)
			4 Painting - Solvent-based painting (automated)
			5 Painting - Other
c5_3d	Years using c5_3b3, c5_3b4	double	
			-9 Don't Know
			-7 Not Applicable
c5_4a1	Plastic injection molding - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_4a2	Plastic injection molding - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_4a3	Plastic injection molding - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_4b1	Plastic injection- Non-visible interior plastic (operators)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c5_4b2	Plastic injection - Plastic exterior body parts (operators)	double	
			-9 Don't Know
			-7 Not Applicable

c5_4b3	Plastic injection- Non-visible interior plastic (robotics)	double	1 Yes 2 No -9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_4b4	Plastic injection - Plastic exterior body parts (robotics)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_4b5	Plastic injection - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_4c	Plastic injection - MOST used method	double	-9 Don't know 1 Plastic injection- Non-visible interior plastic (operators) 2 Plastic injection - Plastic exterior body parts (operators) 3 Plastic injection- Non-visible interior plastic (robotics) 4 Plastic injection - Plastic exterior body parts (robotics) 5 Plastic injection - Other
c5_4d	Years using c5_4b3, c5_4b4	double	-9 Don't Know -7 Not Applicable
c5_5a1	Productive assets mgt. - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c5_5a2	Productive assets mgt. - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5a3	Productive assets mgt. - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5b1	Productive asset mgt. - Breakdown maintenance	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5b2	Productive asset mgt. - Preventative/predictive maintenance	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5b3	Productive asset mgt. - Model Based Condition Monitoring	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5b4	Productive asset mgt. - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c5_5c	Productive asset mgt. - MOST used method	double	-9 Don't know 1 Productive asset mgt. - Breakdown maintenance

			2 Productive asset mgt. - Preventative/predictive maintenance
			3 Productive asset mgt. - Model Based Condition Monitoring
			4 Productive asset mgt. - Other
c5_5d	Years using c5_5b2, c5_5b3	double	
			-9 Don't Know
			-7 Not Applicable
c6_0a1	Produce tablets and capsules	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_0a2	Produce creams and ointments	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_0a3	Produce eye and ear solutions	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_0a4	Produce syrups and dry powders	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_0b1	Main product produced	double	
			1 Tablets and capsules
			2 Creams and ointments
			3 Eye and ear solutions
			4 Syrups and dry powders
c6_0c1	Research with new-drug discovery	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c6_0c2	Lead researchers - direct employees	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1a1	Mix raw mat./compounding in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1a2	Mix raw mat./ compounding - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1a3	Mix raw mat./compounding outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1b1	Air filtration - Unfiltered air	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1b2	Air filtration - Basic	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1b3	Air filtration - HEPA	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c6_1b4	Air filtration - Ultra HEPA, pressurization control	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1b5	Air filtration - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_1c	Air filtration - MOST used method	double	-9 Don't know 1 Air filtration - Unfiltered air 2 Air filtration - Basic 3 Air filtration - HEPA 4 Air filtration - Ultra HEPA, pressurization control 5 Air filtration - Other
c6_1d	Years using c6_1b3, c6_1b4	double	-9 Don't Know -7 Not Applicable
c6_2b1	Weighting - Beam Scales	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_2b2	Weighting - Analog Scales	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_2b3	Weighting - Electronic Scales	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_2b4	Weighting - Automated Weighing	double	-9 Don't Know

c6_2b5	Weighting - Other	double	-7 Not Applicable 1 Yes 2 No
c6_2c	Weighting - MOST used method	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_2d	Years using c6_2b4	double	-9 Don't know 1 Weighting - Beam Scales 2 Weighting - Analog Scales 3 Weighting - Electronic Scales 4 Weighting - Automated Weighing 5 Weighting - Other
c6_3b1	Mixing/compounding - Manual	double	-9 Don't Know -7 Not Applicable
c6_3b2	Mixing/compounding - Planetary Mixers OR homogenizers	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_3b3	Mixing/compounding - High Speed, High Shear Granulators	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_3b4	Mixing/compounding - Fluid Bed Processors (not with syrups)	double	-9 Don't Know

c6_3b5	Mixing/compounding - Fully Automated Compounding	double	-7 Not Applicable 1 Yes 2 No
c6_3b6	Mixing/compounding - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_3c	Mixing/compounding - MOST used method	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_3d	Years using c6_3b3, c6_3b4, c6_3b5	double	-9 Don't know 1 Mixing/compounding - Manual 2 Mixing/compounding - Planetary Mixers OR homogenizers 3 Mixing/compounding - High Speed, High Shear Granulators 4 Mixing/compounding - Fluid Bed Processors (not with syrups) 5 Mixing/compounding - Fully Automated Compounding 6 Mixing/compounding - Other
c6_4a1	Compression/encapsulation in house	double	-9 Don't Know -7 Not Applicable -9 Don't Know -7 Not Applicable 1 Yes 2 No

			-9 Don't know 1 Compression/encapsulation - Manual 2 Compression/encapsulation - Motorized 3 Compression/encapsulation - Automated 4 Compression/encapsulation - Integrated 5 Compression/encapsulation - Other
c6_4d	Years using c6_4b3, c6_4b4	double	
			-9 Don't Know -7 Not Applicable
c6_5a1	Quality control - in-house	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_5a2	Quality control - outsourced (another unit - same firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_5a3	Quality control - outsourced (another firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_5b1	Quality control - Manual, titrimetric/chromatographic	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_5b2	Quality control - Elec. chromatography	double	
			-9 Don't Know -7 Not Applicable 1 Yes

c6_5b3	Quality control - Elec. chromatography w data acquisition	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_5b4	Quality control - Other	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_5c	Quality Control - MOST used method	double	-9 Don't know
			1 Quality control - Manual, titrimetric/chromatographic
			2 Quality control - Elec. chromatography
			3 Quality control - Elec. chromatography w data acquisition
			4 Quality control - Other
c6_5d	Years using c6_5b2, c6_5b3	double	-9 Don't Know
			-7 Not Applicable
c6_6a1	Package pharma. products - in house	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_6a2	Package pharma. products - outsourced (another unit - same firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c6_6a3	Package pharma. products - outsourced (another firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_6b1	Packaging - Manual filling pills or syrups	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_6b2	Packaging - Slat Counters, Cottoners, etc; machine filling	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_6b3	Packaging - Automated, integrated packaging lines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_6b4	Packaging - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_6c	Packaging - MOST used method	double	-9 Don't know 1 Packaging - Manual filling pills or syrups 2 Packaging - Slat Counters, Cottoners, etc; machine filling 3 Packaging - Automated, integrated packaging lines 4 Packaging - Other
c6_6d	Years using c6_6b2, c6_6b3	double	-9 Don't Know -7 Not Applicable
c7_1a1	Cust. supp. - in house	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c7_1a2	Cust. supp. - outsourced (another unit - same firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1a3	Cust. supp. - outsourced (another firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b1	Cust. serv. - Store	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b2	Cust. serv. - Phone or Help Desk	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b3	Cust. serv. - Social Media	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b4	Cust. serv. - Online requests	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b5	Cust. serv. - Chatbots	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_1b6	Cust. serv. - Other	double	
			-9 Don't Know -7 Not Applicable 1 Yes

c7_1c	Service procedure - MOST used method	double	2 No -9 Don't know 1 Cust. serv. - Store 2 Cust. serv. - Phone or Help Desk 3 Cust. serv. - Social Media 4 Cust. serv. - Online requests 5 Cust. serv. - Chatbots 6 Cust. serv. - Other
c7_1d	Years using c7_1b3, c7_1b4, c7_1b5	double	-9 Don't Know -7 Not Applicable
c7_2a1	Pricing - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2a2	Pricing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2a3	Pricing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2b1	Pricing - Manual Cost	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2b2	Pricing - Automated markup	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c7_2b3	Pricing - Automated promotional	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2b4	Pricing - Dynamic pricing systems	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2b5	Pricing - Personalized pricing (predictive analytics)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2b6	Pricing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_2c	Pricing - MOST used method	double	-9 Don't know 1 Pricing - Manual Cost 2 Pricing - Automated markup 3 Pricing - Automated promotional 4 Pricing - Dynamic pricing systems 5 Pricing - Personalized pricing (predictive analytics) 6 Pricing - Other
c7_2d	Years using c7_2b4, c7_2b5	double	-9 Don't Know -7 Not Applicable
c7_2da	Regulation - price mechanism	double	-9 Don't Know -7 Not Applicable 1 Yes

c7_2db	Agency regulating price	String	2	No
c7_3a1	Merchandising - in house	double		Open ended
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3a2	Merchandising - outsourced (another unit - same firm)	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3a3	Merchandising - outsourced (another firm)	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3b1	Merchandising - Manually selection	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3b2	Merchandising - Category mgt.	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3b3	Merchandising - Retail Merch. Systems or Digital Merch.	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3b4	Merchandising - Product trend analytics	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c7_3b5	Merchandising - Other	double		

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_3c	Merchandising - MOST used method	double	-9 Don't know 1 Merchandising - Manually selection 2 Merchandising - Category mgt. 3 Merchandising - Retail Merch. Systems or Digital Merch. 4 Merchandising - Product trend analytics 5 Merchandising - Other
c7_3d	Years using c7_3b3, c7_3b4	double	
c7_4a1	Mgt. inventory - in house	double	-9 Don't Know -7 Not Applicable
c7_4a2	Mgt. inventory - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4a3	Mgt. inventory - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4b1	Inventory - Handwritten record keeping	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c7_4b2	Inventory - Computer databases (manual updates)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4b3	Inventory - WMS (specialised software)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4b4	Inventory - CAO, vendor-managed, and/or radio-frequency identification	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4b5	Inventory - AS/RS	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4b6	Inventory - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_4c	Inventory - MOST used method	double	-9 Don't know 1 Inventory - Handwritten record keeping 2 Inventory - Computer databases (manual updates) 3 Inventory - WMS (specialised software) 4 Inventory - CAO, vendor-managed, and/or radio-frequency identification 5 Inventory - AS/RS 6 Inventory - Other

c7_4d	Years using c7_4b4, c7_4b5	double	-9 Don't Know -7 Not Applicable
c7_5a1	Ads - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5a2	Ads - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5a3	Ads - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b1	Ad channels - Paper based communication	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b2	Ad channels - Radio, Billboards, TV	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b3	Ad channels - Email or mobile phone	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b4	Ad channels - Social Media	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c7_5b5	Ad channels - Search Engine Marketing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b6	Ad channels - Big data Analytics or AI	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5b7	Ad channels - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c7_5c	Ad channels - MOST used method	double	-9 Don't know 1 Ad channels - Paper based communication 2 Ad channels - Radio, Billboards, TV 3 Ad channels - Email or mobile phone 4 Ad channels - Social Media 5 Ad channels - Search Engine Marketing 6 Ad channels - Big data Analytics or AI 7 Ad channels - Other
c7_5d	Years using c7_5b5, c7_5b6	double	-9 Don't Know -7 Not Applicable
c8_0a	N checking accounts managed	double	-9 Don't Know -7 Not Applicable
c8_0b	N saving acc. managed	double	-9 Don't Know -7 Not Applicable
c8_0c	N loans managed	double	-9 Don't Know -7 Not Applicable

c8_1a1	Cust. serv. (checking + savings acc) - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1a2	Cust. serv. (checking + savings acc) - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1a3	Cust. serv. (checking + savings acc) - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1b1	Cust. serv. - Teller	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1b2	Cust. serv. - ATM machines	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1b3	Cust. serv. - On-line on company website	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1b4_ind	Cust. serv. - Mobile app	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_1b6	Cust. serv. - Other	double	-9 Don't Know -7 Not Applicable 1 Yes

c8_1c	Cust. serv. - MOST used method	double	2 No -9 Don't know 1 Cust. serv. - Teller 2 Cust. serv. - ATM machines 3 Cust. serv. - On-line on company website 4 Cust. serv. - Mobile app 6 Cust. serv. - Other
c8_1d	Years using c8_1b3, c8_1b4	double	-9 Don't Know -7 Not Applicable
c8_2a1	Client id/fraud - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2a2	Client id/fraud - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2a3	Client id/fraud - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b1	Verification id - Teller	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b2	Verification id - online passwords	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b3	Verification id - online passwords (combined)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b4	Verification id - Digital auth.	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b5	Verification id - Biometrics	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b6	Verification id - Blockchain	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2b7	Verification id - Other	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_2c	Verification - MOST used method	double	
			-9 Don't know 1 Verification id - Teller 2 Verification id - online passwords 3 Verification id - online passwords (combined) 4 Verification id - Digital auth. 5 Verification id - Biometrics 6 Verification id - Blockchain 7 Verification id - Other
c8_2d	Years using c8_2b4, c8_2b5, c8_2b6	double	
			-9 Don't Know -7 Not Applicable
c8_3a1	Loan app - in house	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3a2	Loan app - outsourced (another unit - same firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3a3	Loan app - outsourced (another firm)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3b1	Loan app - Loan officer (paper-based)	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3b2	Loan app - Mobile app + paper	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3b3	Loan app - Channel partners	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3b4	Loan app - Mobile app + digital process	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_3b5	Loan app - Other	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No

c8_3c	Loan app - MOST used method	double	-9 Don't know 1 Loan app - Loan officer (paper-based) 2 Loan app - Mobile app + paper 3 Loan app - Channel partners 4 Loan app - Mobile app + digital process 5 Loan app - Other
c8_3d	Years using c8_3b2, c8_3b4	double	-9 Don't Know -7 Not Applicable
c8_4a1	Credit approvals - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_4a2	Credit approvals - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_4a3	Credit approvals - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_4b1	Credit approvals - Analyst (paper-based)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_4b2	Credit approvals - Analyst (digital info)	double	-9 Don't Know -7 Not Applicable 1 Yes

c8_4b3	Credit approvals - Automated	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c8_4b4	Credit approvals - Algorithm (AI or Big-Data)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c8_4b5	Credit approvals - Other	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c8_4c	Credit approvals - MOST used method	double	
			-9 Don't know
			1 Credit approvals - Analyst (paper-based)
			2 Credit approvals - Analyst (digital info)
			3 Credit approvals - Automated
			4 Credit approvals - Algorithm (AI or Big-Data)
			5 Credit approvals - Other
c8_4d	Years using c8_4b3, c8_4b4	double	
			-9 Don't Know
			-7 Not Applicable
c8_5a1	Operational supp. - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c8_5a2	Operational supp. - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable

			1 Yes 2 No
c8_5a3	Operational supp. - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_5b1	Op. supp. - writing records	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_5b2	Op. supp. - dig. accounting (PCs)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_5b3	Op. supp. - dig. network	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_5b4	Op. supp. - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c8_5c	Op. supp. - MOST used method	double	-9 Don't know 1 Op. supp. - writing records 2 Op. supp. - dig. accounting (PCs) 3 Op. supp. - dig. network 4 Op. supp. - other
c8_5d	Years using c8_5b2, c8_5b3	double	-9 Don't Know -7 Not Applicable
c9_0a1	Transport serv. - Passengers	double	-9 Don't Know

			-7 Not Applicable
			1 Yes
			2 No
c9_0a2	Transport serv. - Freight	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0a3	Transport serv. - Other	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0b1	Fleet type - Trucks	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0b10	N of vehicles with GPS tracking	double	-9 Don't Know
			-7 Not Applicable
c9_0b2	Fleet type - Cars	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0b3	Fleet type - Motorcycle	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0b4	Fleet type - Others	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_0b5	N of vehicles - Trucks	double	-9 Don't Know
			-7 Not Applicable
c9_0b6	N of vehicles - Cars	double	-9 Don't Know
			-7 Not Applicable
c9_0b7	N of vehicles - Motorcycle	double	-9 Don't Know
			-7 Not Applicable

c9_0b8	N of vehicles with automatic transmission	double	-9 Don't Know -7 Not Applicable
c9_0b9	N of vehicles with hybrid or electric	double	-9 Don't Know -7 Not Applicable
c9_0c1	Regulations - hours uninterrupted driving	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_0c2	Regulations - type of vehicles allowed	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1a1	Load optimization - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1a2	Load optimization - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1a3	Load optimization - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1b1	Transportation planning - handwritten info.	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c9_1b2	Transportation planning - electronic file share	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1b3	Transportation planning - installed software	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1b4	Transportation planning - real time info. with ERP	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1b5	Transportation planning - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_1c	Transportation planning - MOST used method	double	-9 Don't know 1 Information collected by non-specialized workers to create load plans 2 Information collected by electronic file share (e.g. Email or FAX to create load plans) 3 Batch information collected by software installed ERP to create ERP generated load plans 4 Real time information by online software interface with ERP to create load plans 5 Other
c9_1d	Years using c9_1b3, c9_1b4	double	

c9_2a1	Execute transp. load plans - in house	double	-9 Don't Know -7 Not Applicable
c9_2a2	Execute transp. load plans - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2a3	Execute transp. load plans - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2b1	Loading - Manual process (fax, text, phone)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2b2	Loading - Manual process (dig. platforms)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2b3	Loading - web-based	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2b4	Loading - specific software interface via Internet	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c9_2b5	Loading - file exchange (ERP integrated apps)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2b6	Loading - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_2c	Loading - MOST used method	double	-9 Don't know 1 Loading - Manual process (fax, text, phone) 2 Loading - Manual process (dig. platforms) 3 Loading - web-based 4 Loading - specific software interface via Internet 5 Loading - file exchange (ERP integrated apps) 6 Loading - Other
c9_2d	Years using c9_2b3, c9_2b4, c9_2b5	double	-9 Don't Know -7 Not Applicable
c9_3a1	Monitor load/delivery - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3a2	Monitor load/delivery - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3a3	Monitor load/delivery - outsourced (another firm)	double	-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c9_3b1	Monitoring load/delivery - Event driven (fax, text, phone calls)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3b2	Monitoring load/delivery - Event driven (digital)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3b3	Monitoring load/delivery - Paper documentation	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3b4	Monitoring load/delivery - installed softwares	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3b5	Monitoring load/delivery - ERP integrated apps	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3b6	Monitoring load/delivery - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_3c	Transportation monitoring - MOST used method	double	-9 Don't know

			1 Monitoring load/delivery - Event driven (fax, text, phone calls)
			2 Monitoring load/delivery - Event driven (digital)
			3 Monitoring load/delivery - Paper documentation
			4 Monitoring load/delivery - installed softwares
			5 Monitoring load/delivery - ERP integrated apps
			6 Monitoring load/delivery - Other
c9_3d	Years using c9_3b3, c9_3b4, c9_3b5	double	
			-9 Don't Know
			-7 Not Applicable
c9_4a1	Transport performance - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_4a2	Transport performance - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_4a3	Transport performance - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_4b1	Transp. perf. - manually	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c9_4b2	Transp. perf. - computer (non-specialized software)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_4b3	Transp. perf. - computer (specialised transp. reporting)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_4b4	Transp. perf. - installed software	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_4b5	Transp. perf. - file exchange between ERP integrated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_4b6	Transp. perf. - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_4c	Transp. Perf. - MOST used method	double	-9 Don't know 1 Transp. perf. - manually 2 Transp. perf. - computer (non-specialized software) 3 Transp. perf. - computer (specialised transp. reporting) 4 Transp. perf. - installed software 5 Transp. perf. - file exchange between ERP integrated

c9_4d	Years using c9_4b3, c9_4b4, c9_4b5	double	6 Transp. perf. - Other
			-9 Don't Know
			-7 Not Applicable
c9_5a1	Fleet assets - in house	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5a2	Fleet assets - outsourced (another unit - same firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5a3	Fleet assets - outsourced (another firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5b1	Fleet management - manual	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5b2	Fleet management - electronic file	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5b3	Fleet management - ETM	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c9_5b4	Fleet management - ERP and software	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c9_5b5	Fleet management - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c9_5c	Fleet management - MOST used method	double	-9 Don't know 1 Fleet management - manual 2 Fleet management - electronic file 3 Fleet management - ETM 4 Fleet management - ERP and software 5 Fleet management - Other
c9_5d	Years using c9_5b3, c9_5b4	double	-9 Don't Know -7 Not Applicable
c10_0	Complexity of health treatment	double	-9 Don't know -7 Not applicable 1 Level 1: Primary Care 2 Level 2: Specialty Physician Care 3 Level 3: Acute Care General Hospital or Ambulatory Surgical Center 4 Level 4: Specialty Acute Care Hospital 5 Other
c10_0a	No. of patients per day	double	-9 Don't Know -7 Not Applicable
c10_0b	No. of patients night, per day	double	-9 Don't Know -7 Not Applicable
c10_0c	No. of full-time doctors	double	-9 Don't Know -7 Not Applicable

c10_0d	No. of full-time nurses	double	-9 Don't Know -7 Not Applicable
c10_1a1	Hosp. facilities - ER	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a11	Hosp. facilities - Pulse oximetry	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a12	Hosp. facilities - ECG	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a2	Hosp. facilities - Postoperative care area	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a3	Hosp. facilities - ICU	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a4	Hosp. facilities - Blood Bank	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a5	Hosp. facilities - Testing labs	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a6	Hosp. facilities - X-ray	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c10_1a7	Hosp. facilities - ultrasound machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a8	Hosp. facilities - CT scan	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1a9	Hosp. facilities - MRI machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_1b1	Hosp. facilities - ER no.	double	-9 Don't Know -7 Not Applicable
c10_1b11	Hosp. facilities - Pulse oximetry no.	double	-9 Don't Know -7 Not Applicable
c10_1b12	Hosp. facilities - ECG no.	double	-9 Don't Know -7 Not Applicable
c10_1b2	Hosp. facilities - Postoperative care area no.	double	-9 Don't Know -7 Not Applicable
c10_1b3	Hosp. facilities - ICU no.	double	-9 Don't Know -7 Not Applicable
c10_1b4	Hosp. facilities - Blood Bank no.	double	-9 Don't Know -7 Not Applicable
c10_1b5	Hosp. facilities - Testing labs no.	double	-9 Don't Know -7 Not Applicable
c10_1b6	Hosp. facilities - X-ray no.	double	-9 Don't Know -7 Not Applicable

c10_1b7	Hosp. facilities - ultrasound machine no.	double	-9 Don't Know -7 Not Applicable
c10_1b8	Hosp. facilities - CT scan no.	double	-9 Don't Know -7 Not Applicable
c10_1b9	Hosp. facilities - MRI machine no.	double	-9 Don't Know -7 Not Applicable
c10_2a1	Appt. - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_2a2	Appt. - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_2a3	Appt. - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_2b1	Scheduling - Personal visit and paper	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_2b2	Scheduling - Phone call, SMS, or Email	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_2b3	Scheduling - Software or app (w/o automated reminders)	double	-9 Don't Know -7 Not Applicable

c10_2b4	Scheduling - Software or app (w automated reminders)	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c10_2b5	Scheduling - Other	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c10_2c	Scheduling - MOST used method	double	1 Yes 2 No -9 Don't know 1 Scheduling - Personal visit and paper 2 Scheduling - Phone call, SMS, or Email 3 Scheduling - Software or app (w/o automated reminders) 4 Scheduling - Software or app (w automated reminders) 5 Scheduling - Other
c10_2d	Years using c10_2b3, c10_2b4	double	-9 Don't Know -7 Not Applicable
c10_3a1	Patient records - in house	double	-9 Don't Know -7 Not Applicable
c10_3a2	Patient records - outsourced (another unit - same firm)	double	1 Yes 2 No -9 Don't Know -7 Not Applicable

c10_3a3	Patient records - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3b1	Patient records - Handwritten process	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3b2	Patient records - Digital patient records	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3b3	Patient records - EHR	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3b4	Patient records - Cloud-based HER	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3b5	Patient records - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_3c	Patient record - MOST used method	double	-9 Don't know 1 Patient records - Handwritten process 2 Patient records - Digital patient records 3 Patient records - EHR 4 Patient records - Cloud-based HER 5 Patient records - Other

c10_3d	Years using c10_3b3, c10_3b4	double	-9 Don't Know -7 Not Applicable
c10_4a1	Pharmacy - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_4b1	Medication - Internal Pharmacy	double	-9 Don't know 1 Med. mgt./admin. - Handwritten 2 Med. mgt./admin. - Barcode/electronic id 3 Med. mgt./admin. - Other
c10_4b2	Medication - Order of medication	double	-9 Don't know -7 Not applicable 1 Manual order 2 Electronic order
c10_4c1	Med. mgt./admin. - Handwritten	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_4c2	Med. mgt./admin. - Barcode/electronic id	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_4c3	Med. mgt./admin. - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c10_4d	Years using c10_4c2	double	-9 Don't Know -7 Not Applicable
c10_5a1	Sepsis treat. - antibiotics	double	-9 Don't know

c10_5a2	Sepsis treat. - adv. therapies	double	-7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c10_5b1	Childbirth - C-section	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c10_5b2	Childbirth - High-risk labor	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c10_5c1	Trauma - Traction (closed fracture)	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c10_5c2	Trauma - Open Treatment of Fracture	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c10_5d1	Myocardial infarction/Strokes - defibrillation	double	3 It is NEVER available

c10_5d2	Myocardial infarction/-strokes - angiography	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c11_01a	Material - natural leather	double	-9 Don't know -7 Not applicable 1 It is always available 2 It is NOT always available 3 It is NEVER available
c11_01b	Material - man-made leather	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_01c	Material - textile	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_01d	Material - synthetic + textile	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_01e	Material - synthetic + textile + leather	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_01f	Material - other	double	-9 Don't Know -7 Not Applicable 1 Yes

c11_02a	Leather goods - basic	double	2 No -9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_02b	Leather goods - fashion	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_02c	Leather goods - sports	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_02d	Leather goods - shoes	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_02e	Leather goods - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_03a	Finishes - screen print	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_03b	Finishes - embroidery	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_03c	Finishes - seamless	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_03d	Finishes - ink or wax	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_03e	Finishes - waterproofing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c11_03f	Finishes - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1a1	Provide files for design	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1a2	Most common files	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1a3	Design drawing - in house	double	-9 Don't know 1 Graded file of all sizes ready to cut 2 A prototype cutting file for grading 3 Hand drawing of the design 4 Computer drawing of the design 5 3D file of the design 6 Other
c11_1a4	Design drawing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1a5	Design drawing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1b1	Design - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1b2	Design - Digital or semi-digital	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1b3	Design - CAD, 3D, or virtual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1b4	Design - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1c	Design - MOST used method	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_1d	Years using c11_1b2, c11_1b3	double	-9 Don't know 1 Design - Manual 2 Design - Digital or semi-digital 3 Design - CAD, 3D, or virtual 4 Design - Other
c11_2a1	Cutting - in-house	double	-9 Don't Know -7 Not Applicable
c11_2a2	Cutting - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
			-9 Don't Know -7 Not Applicable 1 Yes 2 No

c11_2a3	Cutting - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b1	Cutting - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b2	Cutting - Machine manually- operated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b3	Cutting - Semi-automatic machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b4	Cutting - Automatic/Computerised (no Laser)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b5	Cutting - Automatic/Computerised (Laser)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2b6	Cutting - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2c	Cutting - MOST used method	double	-9 Don't know 1 Cutting - Manual

			2 Cutting - Machine manually-operated
			3 Cutting - Semi-automatic machine
			4 Cutting - Automatic/Computerised (no Laser)
			5 Cutting - Automatic/Computerised (Laser)
			6 Cutting - Other
c11_2d	Years using c11_2b4, c11_2b5	double	
			-9 Don't Know
			-7 Not Applicable
c11_3a1	Sewing - in-house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c11_3a2	Sewing - outsourced (another unit - same firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c11_3a3	Sewing - outsourced (another firm)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c11_3b1	Sewing - Manually	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c11_3b2	Sewing - Machine (manually)	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c11_3b3	Sewing - Machine (semi-automated)	double	
			-9 Don't Know

			-7 Not Applicable 1 Yes 2 No
c11_3b4	Sewing - Machine (automated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_3b5	Sewing - 3D Knitting	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_3b6	Sewing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_3c	Sewing - MOST used method	double	-9 Don't know 1 Sewing - Manually 2 Sewing - Machine (manually) 3 Sewing - Machine (semi-automated) 4 Sewing - Machine (automated) 5 Sewing - 3D Knitting 6 Sewing - Other
c11_3d	Years using c11_3b3, c11_3b4, c11_cb5	double	-9 Don't Know -7 Not Applicable
c11_4a1	Assembly/Finishing - in-house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_4a2	Assembly/Finishing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes

c11_4a3	Assembly/Finishing - outsourced (another firm)	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b1	Assembly/Finishing - manual	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b2	Assembly/Finishing - conveyor/assembly (static/semi-automated)	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b3	Assembly/Finishing - conveyor/assembly (dynamic/automated)	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b4	Assembly/Finishing - injection machine	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b5	Assembly/Finishing - 3D printing	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
c11_4b6	Assembly/Finishing - Other	double	2 No
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c11_4c	Assembly/Finishing - MOST used method	double	<ul style="list-style-type: none"> -9 Don't know 1 Assembly/Finishing - manual 2 Assembly/Finishing - conveyor/assembly (static/semi-automated) 3 Assembly/Finishing - conveyor/assembly (dynamic/automated) 4 Assembly/Finishing - injection machine 5 Assembly/Finishing - 3D printing 6 Assembly/Finishing - Other
c11_4d	Years using c11_4b3, c11_4b4, c11_4b5	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable
c12_0	Accommodation classification	double	<ul style="list-style-type: none"> -9 Don't know -7 Not applicable 1 Hotel: Luxury (De Luxe or First Class) 2 Hotel: Standard or budget (Standard or Economy Class) 3 Resort: Luxury (AAA) 4 Resort: Standard or budget (AA, A, or Special Interest) 5 Apart-hotel/Pension house/bed & breakfast 6 Motel
c12_0a	No. of rooms available	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable
c12_0b	Max. capacity of guests	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable
c12_0c	N rooms - internet connection	double	<ul style="list-style-type: none"> -9 Don't Know

c12_0d	N rooms - AC	double	-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable
c12_0e	N rooms - TV	double	-9 Don't Know
			-7 Not Applicable
c12_0f	N rooms - cable	double	-9 Don't Know
			-7 Not Applicable
c12_0g	N rooms - minibar	double	-9 Don't Know
			-7 Not Applicable
c12_0h	N rooms - coffee maker	double	-9 Don't Know
			-7 Not Applicable
c12_0i	N rooms - telephone	double	-9 Don't Know
			-7 Not Applicable
c12_0j	N rooms - hairdryer	double	-9 Don't Know
			-7 Not Applicable
c12_0k	N of years with internet connections	double	-9 Don't Know
			-7 Not Applicable
c12_1a1	Reservations - in house	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1a2	Reservations - outsourced (another unit - same firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1a3	Reservations - outsourced (another firm)	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1b1	Reservations - handwritten	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1b2	Reservations - digital (std software)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1b3	Reservations - dedicated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1b4	Reservations - PMS	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1b5	Reservations - cloud-based	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1b6	Reservations - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_1c	Reservations - MOST used method	double	-9 Don't know 1 Reservations - handwritten 2 Reservations - digital (std software) 3 Reservations - dedicated 4 Reservations - PMS 5 Reservations - cloud-based 6 Reservations - other
c12_1d	Years using c12_1b3, c12_1b4, c12_1b5	double	-9 Don't Know

c12_1e1	Online travel agency for booking	double	-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e2	Share of booking - online agency	double	
			-9 Don't Know
			-7 Not Applicable
c12_1e3	Online travel agency - MOST used	String	Open ended
c12_1e4_1	Online agency - Booking.com	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e4_2	Online agency - Trip Advisor	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e4_3	Online agency - Expedia	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e4_4	Online agency - AirBnB	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e4_5	Online agency - Others	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c12_1e5	Other online agencies	String	Open ended
c12_2a1	Accom Pricing - in house	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No

c12_2a2	Accom Pricing - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2a3	Accom Pricing - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b1	Accom Pricing - manual cost	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b2	Accom Pricing - automated markup	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b3	Accom Pricing - automated promotional	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b4	Accom Pricing - dynamic pricing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b5	Accom Pricing - personalised pricing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2b6	Accom Pricing - other	double	-9 Don't Know -7 Not Applicable

c12_2c	Accom Pricing - MOST used method	double	1 Yes 2 No -9 Don't know 1 Accom Pricing - manual cost 2 Accom Pricing - automated markup 3 Accom Pricing - automated promotional 4 Accom Pricing - dynamic pricing 5 Accom Pricing - personalised pricing 6 Accom Pricing - other
c12_2d	Years using c12_2b4, c12_2b5	double	-9 Don't Know -7 Not Applicable
c12_2da	Regulation limiting price accom	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_2db	Agency regulating price accom	String	Open ended
c12_3a1	Housekeeping - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3a2	Housekeeping - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3a3	Housekeeping - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c12_3b1	Housekeeping - handwritten	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3b2	Housekeeping - digital (std. software)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3b3	Housekeeping - dedicated	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3b4	Housekeeping - PMS	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3b5	Housekeeping - cloud-based	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3b6	Housekeeping - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3c	Housekeeping - MOST used method	double	-9 Don't know 1 Housekeeping - handwritten 2 Housekeeping - digital (std. software) 3 Housekeeping - dedicated 4 Housekeeping - PMS 5 Housekeeping - cloud-based 6 Housekeeping - other

c12_3d	Years using c12_3b3, c12_3b4, c12_3b5	double	-9 Don't Know -7 Not Applicable
c12_3e1	Use vacuum cleaner	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_3e2	N of vacuum cleaners used	double	-9 Don't Know -7 Not Applicable
c12_4a1	Laundry - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4a2	Laundry - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4a3	Laundry - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4b1	Laundry - manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4b2	Laundry - domestic	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4b3	Laundry - industrial (w automatic sheet fold)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

c12_4b4	Laundry - industrial (w/o automatic sheet fold)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4b5	Laundry - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_4c	Laundry - MOST used method	double	-9 Don't know 1 Laundry - manual 2 Laundry - domestic 3 Laundry - industrial (w automatic sheet fold) 4 Laundry - industrial (w/o automatic sheet fold) 5 Laundry - other
c12_4d	Years using c12_4c	double	-9 Don't Know -7 Not Applicable
c12_5a1	F and B - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5a2	F and B - outsourced (another unit - same firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5a3	F and B - outsourced (another firm)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5b1	PoS - handwritten	double	-9 Don't Know -7 Not Applicable 1 Yes

c12_5b2	PoS - digital records	double	2 No -9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5b3	PoS - specialised software	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5b4	PoS - PMS	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5b5	PoS - cloud-based	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5b6	PoS - other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c12_5c	PoS - MOST used method	double	-9 Don't know 1 PoS - handwritten 2 PoS - digital records 3 PoS - specialised software 4 PoS - PMS 5 PoS - cloud-based 6 PoS - other
c12_5d	Years using c12_5b3, c12_5b4, c12_5b5	double	-9 Don't Know -7 Not Applicable
c12_6a1	N. reviews - Booking.com	double	-9 Don't Know -7 Not Applicable
c12_6a2	Rate - Booking.com	double	-9 Don't Know -7 Not Applicable

c12_6b1	N. reviews - Trip Advisor	double	-9 Don't Know -7 Not Applicable
c12_6b2	Rate - Trip Advisor	double	-9 Don't Know -7 Not Applicable
c12_6c1	N. reviews - Expedia	double	-9 Don't Know -7 Not Applicable
c12_6c2	Rate - Expedia	double	-9 Don't Know -7 Not Applicable
c12_6d1	N. reviews - AirBnB	double	-9 Don't Know -7 Not Applicable
c12_6d2	Rate - AirBnB	double	-9 Don't Know -7 Not Applicable
d1a	Purchase/Lease - Equip. or Mach.	double	-9 Don't know 1 Yes, new 2 Yes, second hand 3 Yes, both (new and second hand) 4 No
d1b	Purchase or Lease - Software License	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d1c	Dev., Custom. or Modif. of Machine or Software	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d1d	Partnership - Development	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d1e	Most contributing partner - Software/Machine Dev	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No

d2a	Most used info. source for decision making	double	<ul style="list-style-type: none"> -9 Don't know 1 Academic or research organization 2 Other enterprises 3 Both
d2b	Firm with >= 50 employees in around 50 kms	double	<ul style="list-style-type: none"> -9 Don't know 1 Oth. firms in the sector 2 Oth. firms in the locality, but diff. sector 3 Suppliers or buyers 4 Industrial or trade assoc. 5 Public tech. extension services 6 Private consultants 7 Fairs, events, and missions 8 Other
d2c	Business Relationship - >= 50 emp. and around 50 kms	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable 1 Yes 2 No
d2d	Business Relationship - Multinational firm	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable 1 Yes 2 No
d2e	CEO Experience - Large firm in same sector/multinational firm	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable 1 Yes

d3a	Loan - mach., equip or licensing	double	2 No -9 Don't Know -7 Not Applicable 1 Yes 2 No
d3b	Interest rate on loan	double	-9 Don't Know -7 Not Applicable
d3c	No. - needed to borrow but not get it	double	-9 Don't Know -7 Not Applicable
d4a	Formal Incentives - Money, gift, or recognition	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d4b	No. KPIs monitored	double	-9 Don't know 1 1-2 key performance indicators 2 3-9 key performance indicators 3 10 or more key performance indicators 4 No key performance indicators
d4c	Frequency monitoring the KPIs	double	-9 Don't know 1 Yearly 2 Quarterly 3 Monthly 4 Weekly 5 Daily 6 Hourly or more frequently 7 Never
d4d	Time frame - production targets	double	-9 Don't know 1 Short-term (< 1 yr) prod. targets

d5a	Hired engineers, computer programmers, or eq.	double	<ul style="list-style-type: none"> 2 Long-term (>=1 yr) prod. targets 3 Comb. of short and long-term prod. targets 4 No prod. targets
d5b	Challenge to hiring engineers, computer programmers, or equivalent	double	<ul style="list-style-type: none"> -9 Don't know 1 Yes, hired 2 Yes, tried but not hired 3 No
d5c	Used external consultants or organisations	double	<ul style="list-style-type: none"> -9 Don't know 1 No challenges 2 Lack of available prof. 3 Lack of available high-skill prof. 4 High salaries required
d5d	Main source of external consultants or organisations	double	<ul style="list-style-type: none"> -9 Don't Know -7 Not Applicable 1 Yes 2 No
d5e	Why not consultants or organisations	double	<ul style="list-style-type: none"> -9 Don't know 1 Universities 2 Government agency 3 Other local companies 4 Foreign company 5 Business associations 6 Other sources
			<ul style="list-style-type: none"> -9 Don't know 1 DK. any consultant or organization 2 Lack of trust in the service quality

			3 Too costly or not convinced of the economic benefit
			4 There was no need
			5 Other
d5f	Adjustment of labour during technological changes	double	
			-9 Don't know
			0 No changes to N of workers
			1 Same workers & some special. training
			2 Fired some workers & did not replace them
			3 Hire more workers with same skills
			4 Hire more workers with more special. skills
			5 Other sources
d6a	Did export?	double	
			-9 Don't know
			1 Exported directly
			2 Exported through trading firms
			3 Did not export
d6b	Direct Exports (% of sales)	double	
			-9 Don't Know
			-7 Not Applicable
d6c	Imported inputs, machines or equipment?	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d6d	Avg. final price paid (base = 100)	double	
			-9 Don't Know
			-7 Not Applicable
d6e	Number of days from entry to customs	double	
			-9 Don't Know
			-7 Not Applicable
d7a	Awareness - govt. support program/subsidy for tech. adoption	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
d7b	Benefitted from any govt. program/subsidy	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d7c	Which kind of govt program/subsidy benefitted from	double	1 Information 2 Technical assistance 3 Tax incentive 4 Grant 5 Loan 6 Other
d8a	1st obstacle to adopt technology	String	Open ended
d8b	2nd obstacle to adopt technology	String	Open ended
d8c	3rd obstacle to adopt technology	String	Open ended
d8d	1st reason for the acquisition of technology	String	Open ended
d8e	2nd reason for the acquisition of technology	String	Open ended
d8f	3rd reason for the acquisition of technology	String	Open ended
e10a	Main product - % share in total sales	double	-9 Don't Know -7 Not Applicable
e10b	Main product - average markup	double	-9 Don't Know -7 Not Applicable
e1a	No. of permanent workers, full-time (ref_year1)	double	-9 Don't Know -7 Not Applicable
e1b	No. of permanent workers, part-time (ref_year1)	double	-9 Don't Know -7 Not Applicable

e1c	No. of temporary or seasonal workers, full-time (ref_year1)	double	-9 Don't Know -7 Not Applicable
e1d	No. of temporary or seasonal workers, part-time (ref_year1)	double	-9 Don't Know -7 Not Applicable
e1e	Average length of temporary or seasonal workers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e1f	Total share of female workers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e2a	No. of permanent workers, full-time (ref_year2)	double	-9 Don't Know -7 Not Applicable
e2b	No. of permanent workers, part-time (ref_year2)	double	-9 Don't Know -7 Not Applicable
e2c	No. of temporary or seasonal workers, full-time (ref_year2)	double	-9 Don't Know -7 Not Applicable
e2d	No. of temporary or seasonal workers, part-time (ref_year2)	double	-9 Don't Know -7 Not Applicable
e2e	Average length of temporary or seasonal workers (ref_year2)	double	-9 Don't Know -7 Not Applicable

e2f	Total share of female workers by the end of the year (ref_year2)?	double	-9 Don't Know -7 Not Applicable
e3a	No. of CEOs and Managers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3b	No. of Professionals (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3c	No. of Technicians (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3d	No. of Clerical support workers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3e	No. of Production workers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3f	No. of Service or sales workers (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3g	Workers dedicated to R&D activities?	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
e3h	No. of workers dedicated to R&D activities?	double	-9 Don't Know -7 Not Applicable
e4a	No. of CEOs and Managers (ref_year2)	double	-9 Don't Know -7 Not Applicable
e4b	No. of Professionals (ref_year2)	double	-9 Don't Know -7 Not Applicable

e4c	No. of Technicians (ref_year2)	double	-9 Don't Know -7 Not Applicable
e4d	No. of Clerical support workers (ref_year2)	double	-9 Don't Know -7 Not Applicable
e4e	No. of Production workers (ref_year2)	double	-9 Don't Know -7 Not Applicable
e4f	No. of Service or sales workers (ref_year2)	double	-9 Don't Know -7 Not Applicable
e5a	% of workers - completed primary education	double	-9 Don't Know -7 Not Applicable
e5b	% of workers - completed secondary education	double	-9 Don't Know -7 Not Applicable
e5c	% of workers - vocational training	double	-9 Don't Know -7 Not Applicable
e5d	% of workers - completed college degree or more	double	-9 Don't Know -7 Not Applicable
e5e	No. of workers - engineering or applied science	double	-9 Don't Know -7 Not Applicable
e5f	No. of workers - MBA, Masters or Doctoral degree	double	-9 Don't Know -7 Not Applicable
e6a	Total sales (ref_year1)	double	-9 Don't Know

e6b	Total sales (ref_year2)	double	-7 Not Applicable
			-9 Don't Know
e7a	Total labor cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e7b	Total material cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e7c	Total energy cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e7d	Operation cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e8a	Equipment cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e8b	Building cost (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e9a	Salaries - CEOs and Managers (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e9b	Salaries - Professionals (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e9c	Salaries - Technicians (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e9d	Salaries - Clerical support workers (ref_year1)	double	-7 Not Applicable
			-9 Don't Know
e9e	Salaries - Production workers (ref_year1)	double	-7 Not Applicable
			-9 Don't Know

e9f	Salaries - Service or sales workers (ref_year1)	double		
			-9	Don't Know
			-7	Not Applicable