

## Codebook

### Bangladesh Firm-level Adoption of Technology (FAT) Survey

Variable Name	Variable Label	Variable Type	Answer Code	Answer Label
firm_id	Firm ID	Numeric		Open ended
firmid	Firm ID	long		Open ended
formality	Formal Sector	Numeric		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
country	Country	String		Open ended
survey_year	Survey Year	String		Open ended
base_wt	Sampling Weight	Numeric		Open ended
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
s4	Multi-Establishment	double		
			-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
s7	Screeener employment size	double		Open ended
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
a4b	Founder - Ownership	double		
			-9	Don't know
			-7	Not applicable
			1	Founder

a4c	Founder - Top Manager	double	2 Founder's family 3 No -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 -7 Not Applicable
a5a	Sector - group	Numeric	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

a7b	Top Manager - Female	double	-7 Not Applicable -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 2 No
b10a	Supply Mgt. - MOST used method	double	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
			1 Yes
			2 No
b10a6	Suppliers - other	double	
			-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
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	

b13a	Direct sale	double	-9 Don't Know -7 Not Applicable
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	<ul style="list-style-type: none"> <li>1 Sales - Establishment Premises</li> <li>2 Sales - Phone, email or sales representatives</li> <li>3 Sales - Social media platforms/apps</li> <li>4 Sales - Online Sales (ext. dig. platforms)</li> <li>5 Sales - Online Sales (own website)</li> <li>6 Sales - Electronic orders</li> <li>7 Sales - Other</li> </ul>
b13d	Years using b12b4, b13b5, b13b6	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> </ul>
b13e1	Sales share (%) - online (ext. dig.)	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> </ul>
b13e2	Sales share (%) - online (own website)	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> </ul>
b13e3	Sales share (%) - electronic orders	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> </ul>
b14a1	Payment - goods exchange	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
b14a2	Payment - cash	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
b14a3	Payment - Cheque, voucher, bank wire	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>

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 2 No
b14a7	Payment - Cryptocurrency	double	-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 2 No
b15a4	Quality Control - Automated	double	-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 1 Yes 2 No
b1a	Electrical Connection	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b1b	Power Outages - Year	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
b1c	Power Outages - Monthly	double	-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 -7 Not Applicable
b4a	No. of Desktop or Laptops	double	-9 Don't Know -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 Other
b5c	No. of internet service downs	double	Open ended
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
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
c3_0a1	Regulated/inspected by govt. agency	double	-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c3_0a2	Main agency regulating	String	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
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

c3_1b1	Input testing - Sensory	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c3_1b2	Input testing - Review of supplier testing	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c3_1b3	Input testing - Non-computer-controlled	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c3_1b4	Input testing - Computer testing	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c3_1b5	Input testing - Other	double	1 Yes 2 No -9 Don't Know -7 Not Applicable
c3_1c	Input testing - MOST used method	double	1 Yes 2 No -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
			2 No
c3_2b4	Food prep. - Power equipment (computers or robotics, minimal int.)	double	
			-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	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>1 Food prep. - Manual</li> <li>2 Food prep. - Mech. equipment (human force)</li> <li>3 Food prep. - Power equipment (human interaction)</li> <li>4 Food prep. - Power equipment (computers or robotics, minimal int.)</li> <li>5 Food prep. - Other</li> </ul>
c3_2d	Years using c3_2b3, c3_2b4	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> </ul>
c3_2e1_bd	Using c3_2b3, c3_2b4 - Reason 1	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>1 Save on labor cost</li> <li>2 Save the cost/usage of land</li> <li>3 Upgrade machines to improve production efficiency</li> <li>4 Improve product quality or meet quality standard</li> <li>5 Ensure compliance with labor and safety standard</li> <li>6 Ensure compliance with environmental standard</li> </ul>
c3_2e2_bd	Using c3_2b3, c3_2b4 - Reason 2	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>1 Save on labor cost</li> <li>2 Save the cost/usage of land</li> <li>3 Upgrade machines to improve production efficiency</li> </ul>

			4 Improve product quality or meet quality standard
			5 Ensure compliance with labor and safety standard
			6 Ensure compliance with environmental standard
c3_2f_bd	Ratio change - power adoption	double	-9 Don't know 1 Increase (relatively more than line workers) 2 Decrease (relatively fewer than line workers)
c3_3a1	Anti-bacterial - in house	double	3 Unchanged -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
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

c3_3b3	Anti-bacterial - Thermal Processing	double	2 No -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
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.)

c3_4d	Years using c3_4b3, c_3b4	double	5 Food pkg. - Other
			-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

			-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 -7 Not Applicable
c4_0a1	Prod. material - Printed fabric	double	-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

c4_0a4	Prod. material - Other	double	2 No -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 provd.	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	-9 Don't Know -7 Not Applicable 1 Yes 2 No
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

			<ul style="list-style-type: none"> <li>1 Cutting - Manual cutting</li> <li>2 Cutting - Cutting machine (manually operated)</li> <li>3 Cutting - Semi-Automatic cutting machine</li> <li>4 Cutting - Automatic/Computerized cutting machine (no Laser)</li> <li>5 Cutting - Automatic/Computerized cutting machine (Laser)</li> <li>6 Cutting - Other</li> </ul>
c4_2d	Years using c4_2b4, c4_2b5	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
c4_3a1	Sewing - in house	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
c4_3a2	Sewing - outsourced (another unit - same firm)	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
c4_3a3	Sewing - outsourced (another firm)	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
c4_3b1	Sewing - Manually	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
c4_3b2	Sewing - Machine (manually operated)	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>

			-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_3e_bd_a	Using c4_3b3, c4_3b4, c4_3b5 - Reason 1	double	-9 Don't Know 1 Save on labor cost

			<ul style="list-style-type: none"> <li>2 Save the cost/usage of land</li> <li>3 Upgrade machines to improve production efficiency</li> <li>4 Improve product quality or meet quality standard</li> <li>5 Ensure compliance with labor and safety standard</li> <li>6 Ensure compliance with environmental standard</li> </ul>
c4_3e_bd_b	Using c4_3b3, c4_3b4, c4_3b5 - Reason 2	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>1 Save on labor cost</li> <li>2 Save the cost/usage of land</li> <li>3 Upgrade machines to improve production efficiency</li> <li>4 Improve product quality or meet quality standard</li> <li>5 Ensure compliance with labor and safety standard</li> <li>6 Ensure compliance with environmental standard</li> </ul>
c4_3f_bd	Ratio change - sewing (apparel)	double	<ul style="list-style-type: none"> <li>-9 Don't know</li> <li>1 Increase (relatively more than line workers)</li> <li>2 Decrease (relatively fewer than line workers)</li> </ul>
c4_4a1	Finishing/ironing- in house	double	<ul style="list-style-type: none"> <li>3 Unchanged</li> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>

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
c4_6a	Use sewing machines - Apparel Sector	double	-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
c4_6b	No. of sewing machines - Apparel Sector	double	-9 Don't Know
			-7 Not Applicable
c4_6c1	Sewing machines - no motor - Apparel Sector	double	-9 Don't Know
			-7 Not Applicable
c4_6c2	Sewing machines - external motors - Apparel Sector	double	-9 Don't Know
			-7 Not Applicable
c4_6c3	Sewing machines - clutch motors - Apparel Sector	double	-9 Don't Know
			-7 Not Applicable
			-9 Don't Know
			-7 Not Applicable

c4_6c4	Sewing machines - servo motors - Apparel Sector	Numeric	-9 Don't Know -7 Not Applicable
c4_6f	Clutch motors replaced by servo? - Apparel Sector	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
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

			-7 Not Applicable 1 Yes 2 No
c6_2b5	Weighting - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_2c	Weighting - MOST used method	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_2d	Years using c6_2b4	double	-9 Don't Know -7 Not Applicable
c6_3b1	Mixing/compounding - Manual	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
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

			-7 Not Applicable 1 Yes 2 No
c6_3b5	Mixing/compounding - Fully Automated Compounding	double	
			-9 Don't Know -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 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_3d	Years using c6_3b3, c6_3b4, c6_3b5	double	
			-9 Don't Know -7 Not Applicable
c6_3e1_bd	Using c6_3b3, c6_3b4, c6_3b5 - Reason 1	double	
			-9 Don't Know 1 Save on labor cost 2 Save the cost/usage of land

c6_3e2_bd	Using c6_3b3, c6_3b4, c6_3b5 - Reason 2	double	<p>3 Upgrade machines to improve production efficiency</p> <p>4 Improve product quality or meet quality standard</p> <p>5 Ensure compliance with labor and safety standard</p> <p>6 Ensure compliance with environmental standard</p> <p>-9 Don't Know</p> <p>1 Save on labor cost</p> <p>2 Save the cost/usage of land</p>
c6_3f_bd	Ratio change - mixing and compounding	double	<p>3 Upgrade machines to improve production efficiency</p> <p>4 Improve product quality or meet quality standard</p> <p>5 Ensure compliance with labor and safety standard</p> <p>6 Ensure compliance with environmental standard</p> <p>-9 Don't know</p> <p>1 Increase (relatively more than line workers)</p> <p>2 Decrease (relatively fewer than line workers)</p>
c6_4a1	Compression/encapsulation in house	double	<p>3 Unchanged</p> <p>-9 Don't Know</p> <p>-7 Not Applicable</p> <p>1 Yes</p> <p>2 No</p>
c6_4a2	Compression/encapsulation outsourced (another unit - same firm)	double	

			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4a3	Compression/encapsulation outsourced (another firm)	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4b1	Compression/encapsulation Manual	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4b2	Compression/encapsulation Motorized	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4b3	Compression/encapsulation Automated	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4b4	Compression/encapsulation Integrated	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4b5	Compression/encapsulation Other	-double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c6_4c	Compression/encapsulation MOST used method	-double	
			-9 Don't know 1 Compression/encapsulatio n - 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
			2 No

c6_5b3	Quality control - Elec. chromatography w data acquisition	double	-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
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
c11_01a	Material - natural leather	double	-9 Don't Know -7 Not Applicable

c11_01b	Material - man-made leather	double	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 2 No
c11_02a	Leather goods - basic	double	-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 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_1a3	Design drawing - in house	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
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
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 1 Design - Manual 2 Design - Digital or semi-digital 3 Design - CAD, 3D, or virtual 4 Design - Other
c11_1d	Years using c11_1b2, c11_1b3	double	
			-9 Don't Know -7 Not Applicable
c11_2a1	Cutting - in-house	double	
			-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_2a2	Cutting - outsourced (another unit - same firm)	double	
			-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_3e1_bd	Using c11_3b3, c11_3b4, c11_3b5 - Reason 1	double	-9 Don't Know 1 Save on labor cost 2 Save the cost/usage of land 3 Upgrade machines to improve production efficiency 4 Improve product quality or meet quality standard 5 Ensure compliance with labor and safety standard 6 Ensure compliance with environmental standard
c11_3e2_bd	Using c11_3b3, c11_3b4, c11_3b5 - Reason 2	double	-9 Don't Know 1 Save on labor cost 2 Save the cost/usage of land 3 Upgrade machines to improve production efficiency 4 Improve product quality or meet quality standard

			5	Ensure compliance with labor and safety standard
			6	Ensure compliance with environmental standard
c11_3f_bd	Ratio change - sewing (leather)	double	-9	Don't know
			1	Increase (relatively more than line workers)
			2	Decrease (relatively fewer than line workers)
			3	Unchanged
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
			2	No
c11_4a3	Assembly/Finishing - outsourced (another firm)	double	-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c11_4b1	Assembly/Finishing - manual	double	-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No
c11_4b2	Assembly/Finishing - conveyor/assembly (static/semi-automated)	double	-9	Don't Know
			-7	Not Applicable
			1	Yes
			2	No

c11_4b3	Assembly/Finishing - conveyor/assembly (dynamic/automated)	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_4b4	Assembly/Finishing - injection machine	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_4b5	Assembly/Finishing - 3D printing	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_4b6	Assembly/Finishing - Other	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_4c	Assembly/Finishing - MOST used method	double	-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	-9 Don't Know -7 Not Applicable

c11_5a_bd	Use sewing machines - Leather Sector	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_5b_bd	No. of sewing machines - Leather Sector	double	-9 Don't Know -7 Not Applicable
c11_5c1_bd	Sewing machines - no motor - Leather Sector	double	-9 Don't Know -7 Not Applicable
c11_5c2_bd	Sewing machines - external motors - Leather Sector	double	-9 Don't Know -7 Not Applicable
c11_5c3_bd	Sewing machines - clutch motors - Leather Sector	double	-9 Don't Know -7 Not Applicable
c11_5c4_bd	Sewing machines - servo motors - Leather Sector	double	-9 Don't Know -7 Not Applicable
c11_5da1_bd	Sewing Machines - NEW purchases 2016-19	double	-9 Don't Know -7 Not Applicable
c11_5da2_bd	Sewing Machines - NEW purchases 2012-15	double	-9 Don't Know -7 Not Applicable
c11_5da3_bd	Sewing Machines - NEW purchases 2011 or before	double	-9 Don't Know -7 Not Applicable
c11_5db1_bd	Sewing Machines - SECOND- HAND purchases 2016-19	double	-9 Don't Know -7 Not Applicable
c11_5db2_bd	Sewing Machines - SECOND- HAND purchases 2012-15	double	-9 Don't Know -7 Not Applicable

				-9 Don't Know -7 Not Applicable
c11_5db3_bd	Sewing Machines - SECOND-HAND purchases 2011 or before	double		
				-9 Don't Know -7 Not Applicable
c11_5e1_bd	Monthly units of electricity (ref_year1)	double		
				-9 Don't Know -7 Not Applicable
c11_5e2_bd	Monthly pay per unit (ref_year1)	double		
				-9 Don't Know -7 Not Applicable
c11_5e3_bd	Monthly units generate electricity (ref_year1)	double		
				-9 Don't Know -7 Not Applicable
c11_5e4_bd	Monthly cost per unit (ref_year1)	double		
				-9 Don't Know -7 Not Applicable
c11_5f_bd	Clutch motors replaced by servo? - Leather Sector	double		
				-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_5g_bd	Technician - in-house or outside	double		
				-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_5h_bd	Subcontract - bigger firms in leather and footwear	double		
				-9 Don't Know -7 Not Applicable 1 Yes 2 No
c11_5i_bd	Factory manager - ILET graduate	double		
				-9 Don't Know -7 Not Applicable

d1a	Purchase/Lease - Equip. or Mach.	double	<ul style="list-style-type: none"> <li>1 Yes</li> <li>2 No</li> <li>-9 Don't know</li> <li>1 Yes, new</li> <li>2 Yes, second hand</li> <li>3 Yes, both (new and second hand)</li> <li>4 No</li> </ul>
d1b	Purchase or Lease - Software License	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
d1c	Dev., Custom. or Modif. of Machine or Software	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
d1d	Partnership - Development	double	<ul style="list-style-type: none"> <li>-9 Don't Know</li> <li>-7 Not Applicable</li> <li>1 Yes</li> <li>2 No</li> </ul>
d1e	Most contributing partner - Software/Machine Dev	double	<ul style="list-style-type: none"> <li>-9 Don't know</li> <li>1 Academic or research organization</li> <li>2 Other enterprises</li> <li>3 Both</li> </ul>
d2a	Most used info. source for decision making	double	<ul style="list-style-type: none"> <li>-9 Don't know</li> <li>1 Oth. firms in the sector</li> <li>2 Oth. firms in the locality, but diff. sector</li> <li>3 Suppliers or buyers</li> <li>4 Industrial or trade assoc.</li> <li>5 Public tech. extension services</li> </ul>

			6 Private consultants 7 Fairs, events, and missions 8 Other -9 Don't know 1 Domestic competitors 2 Foreign competitors 3 Domestic buyers/customers 4 Foreign buyers/customers 5 Domestic suppliers 6 Foreign suppliers
d2a1_bd	Type of firms using info	double	
d2b	Firm with >= 50 employees in around 50 kms	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d2c	Business Relationship - >= 50 emp. and around 50 kms	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d2d	Business Relationship - Multinational firm	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d2e	CEO Experience - Large firm in same sector/multinational firm	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d3a	Loan - mach., equip or licensing	double	-9 Don't Know -7 Not Applicable 1 Yes

d3b	Interest rate on loan	double	2 No -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 2 Long-term (>=1 yr) prod. targets 3 Comb. of short and long-term prod. targets 4 No prod. targets

d5a	Hired engineers, computer programmers, or eq.	double	-9 Don't know 1 Yes, hired 2 Yes, tried but not hired 3 No
d5b	Challenge to hiring engineers, computer programmers, or equivalent	double	-9 Don't know 1 No challenges 2 Lack of available prof. 3 Lack of available high-skill prof. 4 High salaries required
d5c	Used external consultants or organisations	double	-9 Don't Know -7 Not Applicable 1 Yes 2 No
d5d	Main source of external consultants or organisations	double	-9 Don't know 1 Universities 2 Government agency 3 Other local companies 4 Foreign company 5 Business associations 6 Other sources
d5e	Why not consultants or organisations	double	-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
d6a1_bd	No. of days from main point to custom clear	double	-9 Don't Know -7 Not Applicable
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_1	Govt support - information	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d7c_2	Govt support - tech assistance	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d7c_3	Govt support - tax incentive	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d7c_4	Govt support - grant	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d7c_5	Govt support - loan	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
d7c_6	Govt support - other	double	
			-9 Don't Know
			-7 Not Applicable
			1 Yes
			2 No
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
e3c1_bd	No. of Manufacturing Supervisors (ref_year1)	double	-9 Don't Know -7 Not Applicable
e3c2_bd	No. of Other 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
e4c1_bd	Manufacturing Supervisors (ref_year2)	double	-9 Don't Know -7 Not Applicable
e4c2_bd	Other 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
e4g_bd	No. of Production line supervisors	double	-9 Don't Know -7 Not Applicable
e4h_bd	No. of Production line workers	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 -7 Not Applicable
e6b	Total sales (ref_year2)	double	-9 Don't Know -7 Not Applicable

e6c_bd	Sales (ref_year1) - calendar or fiscal year	double	1 Calendar year 2 Fiscal year
e6d_bd	Sales (ref_year2) - calendar or fiscal year	double	1 Calendar year 2 Fiscal year
e7a	Total labor cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
e7b	Total material cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
e7c	Total energy cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
e7d	Operation cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
e8a	Equipment cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
e8b	Building cost (ref_year1)	double	-9 Don't Know -7 Not Applicable
f1a_bd	F1.a Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1b_bd	F1.b Using the response options on the card, to what degree are the following fa	double	-9 Don't Know

f1c_bd	F1.c Using the response options on the card, to what degree are the following fa	double	-7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1d_bd	F1.d Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1e_bd	F1.e Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1f_bd	F1.f Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
			-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle

f1g_bd	F1.g Using the response options on the card, to what degree are the following fa	double	2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle  -9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1h_bd	F1.h Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1i_bd	F1.i Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1j_bd	F1.j Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle

f1k_bd	F1.k Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f1l_bd	F1.l Using the response options on the card, to what degree are the following fa	double	-9 Don't Know -7 Does Not Apply 0 No obstacle 1 Minor obstacle 2 Moderate obstacle 3 Major obstacle 4 Very severe obstacle
f3a_bd	F3a In a typical week over the last year, what percentage of total senior manage	double	Open ended
f4a_bd	F4a Over the last complete fiscal year, please estimate the proportion of this e	double	Open ended
f4b_bd	F4b Over the last complete fiscal year, please estimate the proportion of this e	double	Open ended
f4c_bd	F4c Over the last complete fiscal year, please estimate the proportion of this e	double	Open ended
f4d_bd	F4d Over the last complete fiscal year, please estimate the proportion of this e	double	Open ended
f4e_bd	F4e Over the last complete fiscal year, please estimate the proportion of this e	double	Open ended