

Methodological Annex – Chapter 7

Technological innovation by business in São Paulo State: an analysis based on the findings of the PINTEC survey

Chart M7.1

Calculation of indicators used in Chapter 7, based on PINTEC (2003 & 2005) and PIA (2005)

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Table name	Statistical details required	Disaggregations/ Crosstabulations	Coverage
1.1 Introduction of a new product.	Number of firms introducing Product new to firm, PINTEC 10.1 and/or Product new to market, 11.1.	Sectoral.	Brazil, São Paulo State, Brazil except São Paulo State.
1.1 Introduction of a new process.	Number of firms introducing Process new to firm, PINTEC 16.1 and/or Process new to market, 17.1.	Sectoral.	Brazil, São Paulo State, Brazil except São Paulo State.
1.1 Introduction of a new product and a new process.	Number of firms introducing both Product and process innovations, PINTEC 10.1 and/or 11.1, and 16.1 and/or 17.1.	Sectoral.	Brazil, São Paulo State, Brazil except São Paulo State.
1.1 Introduction of a new product and/or a new process.	Number of firms introducing Product and/or Process innovations, PINTEC 10.1 and/or 11.1 and/or 16.1 and/or 17.1.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.2. Share of innovative firms in total net sales.	i) Value sales for each firm (separated by sector, size and origin of capital) selecting PINTEC 10.1 and/or 11.1 and/or 16.1 and/or 17.1 ii) Total net sales for all firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.3. Share of innovative firms in total merchandise exports.	i) Value exports (PIA questions 22 & 23) for each firm selecting PINTEC 10.1 and/or 11.1 and/or 16.1 and/or 17.1. ii) Total value exports (PIA questions 20, 23 & 24) for all firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.4. Innovation rate.	i) Number of innovative firms introducing product and/or process innovations New to firm or New to home market, PINTEC 10.1 and/or 11.1 and/or 16.1 and/or 17.1 ii) Total number of firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.6. Innovation rate for products and/or processes new to home market.	i) Number of firms selecting PINTEC 11.1 and/or 17.1. ii) Total number of firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.7. Original innovator rate.	i) Number of firms with Product innovations mainly developed by firm, PINTEC 14.1, and/or Product innovations mainly developed by firm in cooperation, 14.3, and/or Process innovations mainly developed by firm, 20.1, and/or Process innovations mainly developed by firm in cooperation, 20.3. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.8.1 Innovative firms citing patent applications.	i) Number of firms with Patent applications filed in Brazil, PINTEC 172.1, and/or Patent applications filed abroad, 172.2, and/or Patent applications filed in Brazil and abroad, 172.3. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.

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Table name	Statistical details required	Disaggregations/ Crosstabulations	Coverage
1.8.2. Innovative firms citing patent grants in force.	i) Number of firms selecting Patent grants in Brazil, PINTEC 173.1, and/or Patent grants abroad, 172.2, and/or Patent grants in Brazil and abroad, 172.3. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
1.9. Use of protection methods by innovative firms.	i) Number of firms using Invention patents, PINTEC 163.1. ii) Number of firms using Utility models, PINTEC 164.1. iii) Number of firms using Industrial design registration, PINTEC 165.1. iv) Number of firms using Trademarks, PINTEC 166.1. v) Number of firms using Copyright, PINTEC 167.1. vi) Number of firms using Design complexity, PINTEC 168.1. vii) Number of firms using Trade secrecy, PINTEC 169.1. viii) Number of firms using Lead time, PINTEC 170.1. ix) Number of firms using Other, PINTEC 171.1. x) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
2.1. Information sources assigned high importance by innovative firms.	i) Number of firms assigning high importance to information sources in PINTEC 108-121. ii) Total number of innovative firms.	Separate and cross-tabulate sectors, sizes and origins of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
2.3. Location of information sources for innovation.	i) Number of firms selecting Brazil as location for information sources in PINTEC 122-133. ii) Number of firms selecting Abroad as location for information sources in PINTEC 122-133. iii) Total number of innovative firms.	Sectoral, size, origin of capital. Crosstabulate 3 variables: origin of capital, type of source, location of source.	Brazil, São Paulo State, Brazil except São Paulo State.
2.4. Total cooperation rate.	i) Number of firms citing Cooperation, PINTEC 134.1. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
2.5. Location of partners.	i) Number of firms selecting Same state or Brazil in PINTEC 142-148. ii) Number of firms selecting Mercosur, USA, Europe or Other countries in PINTEC 142-148. iii) Number of firms citing Cooperation, PINTEC 134.1.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
2.6. R&D cooperation rate.	i) Number of firms citing Cooperation, PINTEC 134.1. ii) Number of firms selecting R&D in PINTEC 149-155.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
3.1. Importance of innovation activities.	i) Number of firms selecting High importance in PINTEC 24-30. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
3.2. Structure of spending on innovation activities.	i) Values cited in PINTEC 31-37. ii) Sum of values cited in 31-37.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
3.3. Intensity of innovation activities.	i) Spending on innovation activities cited in PINTEC 31-37. ii) Net sales cited in PINTEC 9.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.

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Table name	Statistical details required	Disaggregations/ Crosstabulations	Coverage
3.4. Importance of continuous R&D.	i) Number of firms selecting Continuous in PINTEC 44.1. ii) Number of firms selecting PINTEC 44.1 (Continuous) and 44.2 (Sporadic).	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
3.5. R&D intensity.	i) Spending on intramural R&D cited in PINTEC 31. ii) Manufacturing value added (MVA) for all PINTEC respondents, extracted from answers to PIA A, B & C according to IBGE methodology.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
3.7. Structure of R&D spending.	i) Spending on intramural R&D cited in answers to PINTEC 31, separated by firm's sector, size and origin of capital. ii) Total spending on intramural R&D, sum of all values in PINTEC 31.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
4.1.1. Sources of funding for R&D.	i) Percentage cited as Own funds, PINTEC 38. ii) Percentage cited as Private, PINTEC 39. iii) Percentage cited as Public, PINTEC 40.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
4.1.2. Sources of funding for other innovation activities.	i) Percentage cited as Own funds, PINTEC 41. ii) Percentage cited as Private, PINTEC 42. iii) Percentage cited as Public, PINTEC 43.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
4.2. Proportion of innovative firms supported by government.	i) Number of firms selecting Tax incentives for R&D, PINTEC 156.1. ii) Number of firms selecting Tax incentives for IT, 157.1. iii) Number of firms selecting Grants for research in partnership with universities/research institutions, 158.1. iv) Number of firms selecting Financing for purchase of machinery, 159.1. v) Number of firms selecting Grants from development or research funding agencies, 160.1. vi) Number of firms selecting Venture capital, 161.1. vii) Number of firms selecting Other, 162.1. viii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
5.1. Economic impact of product innovation on sales.	i) Percentage contributions to net sales, PINTEC 85-87. ii) Domestic sales as % of total net sales, PIA 22. iii) Percentage contributions to exports, PINTEC 89-91. iv) Exports as % of total sales, PIA 23-24. v) Total net sales, PIA 20.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
5.2. Economic impact of product innovation on exports.	i) Percentage contributions to exports, PINTEC 89-91. ii) Innovative firms' exports as % of total sales, PIA 23-24. iii) Innovative firms' total net sales, PIA 20. iv) All firms' total exports as % of total sales, PIA 23-24. v) All firms' total net sales, PIA 20.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.
5.3. Importance assigned to economic impact of innovation.	i) Number of firms assigning High importance in several areas (quality, market share, savings, environment etc.), PINTEC 93-107. ii) Total number of innovative firms.	Sectoral, size, origin of capital.	Brazil, São Paulo State, Brazil except São Paulo State.