

# Absenteeism and indirect costs during the year following the diagnosis of an operable breast cancer: A prospective multicentric cohort study

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# Title: Absenteeism and indirect costs during the year following the diagnosis of an operable breast cancer: a prospective multicentric cohort study.

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#### 1 Abstract:

Background: Diseases consequence on individual work as much as consequences of being
absent from work are matters of interest for decision makers.

Methods: We analyzed lengths of absenteeism and related indirect costs for patients with a 4 5 paid activity in the year following the diagnosis of early stage breast cancer, in the 6 prospective OPTISOINS01 cohort. Both human capital and friction costs approach were 7 considered for the valuation of lost working days (LWD). For the analysis, the friction period 8 was estimated from recent French data. The statistical analysis included simple and multiple linear regression to search for the determinants of absenteeism and indirect costs. 9 10 Results: 93% of the patients had at least one period of sick leave, with on average 2 period and 186 days of sick leave. 24% of the patients had a part-time resumption after their sick 11 leave periods, during 114 days on average (i.e. 41 LWD). Estimated indirect costs were 12 22,722.00 € and 7,724.00 € per patient, respectively for the human capital and the friction cost 13 approach. In the multiple linear regression model, factors associated with absenteeism were: 14 15 the invasive nature of the tumor (p=.043), a mastectomy (p=.038), a surgery revision 16 (p=.002), a chemotherapy (p=.027), being a manager (p=.025) or a craftsman (p=.005). 17 Conclusion: Breast cancer lead to important lengths of absenteeism in the year following the 18 diagnosis, but almost all patients were able to return to work. Using the friction cost or the human capital approach in the analysis led to an important gap in the results, highlighting the 19 20 importance of considering both for such studies.

21

	22	Keywords: H	Health ec	conomics; 1	Breast ca	incer; Indi	irect costs;	Absenteeism;	Economic	burder
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### 24 List of abbreviations

- 25 BC: Breast Cancer
- 26 FC: Friction costs
- 27 HAS: French Health Authority
- 28 HC: Human Capital
- 29 HTA: Health Technology Assessement
- 30 LWD: Lost Working Days
- 31

#### 32 Introduction

33 Breast cancer (BC) is the most common cancer in French women with an estimated incidence of 54,062 new cases in 2015 (standardize incidence rate of 97.4 cases per 100,000 34 35 women per year). Usually, costs associated with health care interventions are split between 36 direct costs referring to the resource utilization and indirect costs which represent the productivity lost or time cost due to illness. Different Health Technology Assessment (HTA) 37 38 agencies developed guidelines including cost components to be included in economic evaluation, generally recommending exclusion of indirect costs for various reasons. The 39 French Health Authority (HAS) alternatively suggested to consider production costs of health 40 41 care interventions including the standard direct costs and time cost of patients for the delivery of care but excluding time cost due to the underlying condition (1). 42

BC generates important direct costs for health care systems. A study conducted in France on the national public health insurance database concluded that BC was the most expensive, representing 18.5% of all the cancer expenditures (2). In the US, the estimated lifetime treatment costs ranged from \$20,000 to \$100,000 (3). Moreover, since BC is mostly prevalent in women of working age, it induces important indirect costs which should be consider to allow a more comprehensive approach of this disease in a societal perspective.

Methodology of indirect costs measurement raise several issues, especially the 49 valuation of lost productivity related to the time lost due to illness. Defined by Rice, the 50 51 human capital (HC) approach values the entire time lost, regardless of the duration of absence (4). To the contrary, in the friction costs (FC) approach, it is assumed that indirect costs only 52 occur during the limited period before adjustment of firms to the workers absence defining a 53 54 friction period (5). Even though both may provide useful information, using one approach or the other leads to estimates which may differ dramatically especially when considering a 55 lifetime horizon (6–8). 56

Data over absenteeism and indirect costs are useful for decision makers when 57 considering cost-of-illness studies or model-based economic evaluations on innovative 58 treatments or screening strategies. Few studies in the literature focus on indirect costs of BC 59 and absenteeism with estimates ranging from \$8,068 (9) to \$21,086 per patient (10), 60 highlighting the importance of the methodology used and country of interest. In France, only 61 one study reported indirect costs associated with adjuvant chemotherapy in BC (11). There is 62 also few information over individual characteristics driving the level of indirect costs. To 63 maintain employment or early return at work could be justified in order to decrease economic 64 burden of the disease from a societal perspective but also to limit its impact on patient's 65 personal life (social environment, long term professional goals, etc.). In some countries, like 66 France, it is considered as a public health priority (12,13). It could be promoted with 67 multidisciplinary interventions and innovative treatments associated with less toxicity (14). 68 The objective of this study was to-describe the indirect costs of absenteeism and their 69

70 determinants in the first year following the diagnosis of early BC in a French population-

<sup>71</sup> based prospective cohort study, using both the HC and the FC approach.

72

#### 74 Material and methods

#### 75 **Population**

We analyzed indirect costs in early BC, during the year following diagnosis. This 76 study is part of a global research on BC pathways and burden of disease of the French 77 prospective and multicentric study OPTISOINS01. The design of this prospective trial was 78 previously described (15). Patients were included in this cohort by 8 centers (three University 79 80 hospitals, four local hospitals, one comprehensive cancer center) in three departments of the Ile-de-France region between 2014 and 2016. Patients included were female with a 81 histologically confirmed, previously untreated and firstly operable BC (exclusion of 82 metastatic, locally advanced or inflammatory BC as defined by the AJCC). Patients were 83 prospectively followed during a year with a collection of information over three work 84 85 packages: 1/resource utilization and costs of pathways, 2/patient satisfaction and work reintegration, 3/quality, coordination and access to innovation. Individual social and economic 86 87 characteristics were also recorded at the beginning of the study.

From the initial cohort of OPTISOINS01, we included all patients reporting a paid activity at the moment of diagnosis. They were excluded if the data on wage or absenteeism were missing.

All components of absenteeism were included as part of indirect costs: sick days, parttime resumption, early retirement, mortality. Indirect costs related to presenteeism and unpaid work were excluded from the field of this study. A specific questioner in the second work package was used to assess time lost due to the disease during the year of survey: dates of work and absence from work during treatment, work arrangements, on-shift status (e.g., the recognition of disability at work, applications for disability allowance, retirement, and layoff). We did not consider indirect costs of relatives.

#### 98 Calculations methods for indirect costs

Periods of absenteeism were considered using both HC and FC approach, addressed 99 separately. In the HC approach, we assumed that indirect costs were generated during the 100 101 entire period of absenteeism (4). According to the FC approach (6), after a friction period, the 102 level of productivity is restored because of the replacement of the sick individual and no 103 indirect costs occurs. However, medium-term global macroeconomic consequences may arise 104 in an international competitive labor market with an impact on macroeconomic indicators. During the friction period and because of various parameters (diminishing returns to labour, 105 106 internal labour reserve within firms, and delaying work after the absence period) the 107 production losses are lower that estimates based on the HC approach. With the FC approach, we restricted indirect costs to the friction period and used a friction coefficient to reduce the 108 value of lost production. We assumed insignificant medium-term macro-economic 109 consequences for this cohort. 110

111 According to Koopmanschap's method, job vacancy duration estimates (i.e. length of 112 recruitment processes) increased with 30 days of time lag (for the decision to recruit and the time between the recruitment and the first working day) were used as a proxy for the friction 113 period's length (6). As job vacancy duration depends on professional categories, we stratified 114 115 the estimation on this factor (managers vs. others). Data over jobs vacancy durations were scarce in the French literature (including the grey literature). The ofer survey conducted in 116 117 2005 by the labor department reported means of 56 days for managers and 28 days for other professional categories (16). In 2017, Pole-emploi job offers were filled in 56 days for 118 119 managers and 36 days for other categories (17). Consequently, we assumed a friction period 120 of 86 days for managers and 62 days for other professional categories. For the friction coefficient, we used a value of 0.8, initially computed by Koopmanschap et al. (using the 121

estimated elasticity for annual labor time versus labor productivity) and never updatedafterwards (6).

Periods of absenteeism were recorded including days off (week end) in the patient's 124 questioner and converted into Lost Working Days (LWD) for the analysis: five LWD for 7 125 sick days, 2.5 LWD for 7 days of part-time resumption, 251 LWD for a death or an early 126 retirement (considering 5 working days per week during a year). Representing lost 127 productivity, LWD were valued in euros by daily individual wages supplemented with 128 129 employers and employee social contributions (computed with an online tool (18)). Wages were self-reported by the patients as their monthly net income. In the FC approach, if multiple 130 131 periods of absenteeism were recorded, interspersed by work period, we assumed a new entire friction period for each period of absenteeism. 132

#### 133 Statistical analysis

We performed different models of simple and multiple linear regressions using the 134 135 Stata\IC 14.0 software (StataCorp, College Station, Texas). In the first model, the independent 136 variable was the estimate number of LWD, with the HC approach. In the second model, the independent variable was the amount of indirect costs. As HC and FC approaches lead to 137 different values, we performed two different statistical analyses. Dependent variables 138 139 integrated in a simple linear regression were: marital status, professional category, cancer histology, surgical treatment, adjuvant treatment in the BC treatment. Factors correlated with 140 the independent variable (with a p-value<.1) were integrated in the multiple linear regression. 141 A p-value < .05 was considered significant. 142

We conducted a univariate sensitivity analysis on estimated parameters of the FC approach (friction period length, friction coefficient) by applying them ±20% variation and constructed a Tornado diagram to illustrate the effect on indirect costs. This analysis was also conducted for subgroups: managers and other professional categories.

147	To facilitate the use of our data in other medico-economic analysis, we estimated
148	average indirect costs in subgroups, according to the care pathway and the occupational
149	activity.

150	This study was approved by the French National ethics committee (CCTIRS
151	Authorization n°14.602 and CNIL DR-2014-167) and covers research at all participating
152	hospitals. This study was registered with ClinicalTrials.gov (Identifier: NCT02813317).
153	

#### 155 **Results**

On the 617 screened patients, 604 were included in the OPTISOINS01 cohort. Some patients were excluded from our study either due to the absence of paid activity during the study period (n=307) or due to missing data (wages for 42 patients and length of absenteeism for 87 patients). Finally, 168 patients were included in the analysis (figure 1). Patients characteristics are presented in table 1.

161 Eleven patients did not have any period of absenteeism. One hundred fifty six patients (93%) had at least one period of sick leave, with on average 2 period and 186 days of sick 162 leave (i.e. 133 LWD). Forty patients (24%) had a part-time resumption after their sick leave 163 periods, during 114 days on average (i.e. 41 LWD). Five patients did request for early 164 retirement but procedures were still pending at the end of the follow-up. No death was 165 166 declared during the study period. On average, managers declared less sick leave days than other professional categories (146 and 172, respectively) but longer period of part time 167 168 recovery (33 and 24, respectively). Using the HC approach, we recorded a total of 20 973 169 LWD (mean: 125 LWD per patient). Then, using the FC approach, we computed a total of 170 8 297 LWD (mean: 49 LWD per patient). For 66 patients (38%), there were no differences in the computed number of LWD using on approach or the other. Patients in this subgroup had 171 172 significantly less mastectomy (11%), less axillary lymph node dissection (5%) and less chemotherapy (27%) than the whole sample. 173

As a consequence, using the HC approach, the total estimated indirect costs in the
cohort were three times those estimated with the FC approach : 3,817,000.00 € vs.
1,298,000.00 €. Respectively, this represented 22,722.00 € and 7,724.00 € of indirect costs,
per patient, during the first year after diagnosis. In both approaches, the main driver of lost

178 productivity and indirect costs was sick leave days, representing 90% of the total amount.

179 Part-time resumption only accounted for 10% of the total of these costs (figure 2). Indirect

costs were higher for managers than other professional categories: 11,044 €/patient vs. 5,353
€/patient with the FC approach, despite less sick leave days in this group. This result is
explained by highest incomes.

In the multiple linear regression model, factors associated with the number of LWD 183 were: the invasive nature of the tumor (+65 LWD, p=.043), a mastectomy (+40 LWD, 184 p=.038), a surgery revision (+48LWD, p=.002), a chemotherapy (+35 LWD, p=.027), being a 185 manager (-33LWD, p=.025) or a craftsman (-113LWD, p=.005) (compared to being a paid 186 187 employee). With both approaches, in the simple linear regression model, individual indirect costs were correlated with the invasive nature of the tumor, characteristics of the treatment 188 189 (mastectomy, axillary lymph node dissection, chemotherapy) and socio-economic characteristics (high educated vs. low educated, being manager vs. being a paid employee) 190 (see Table 2. For details and differences between HC and FC approach). In the HC approach, 191 192 factors significantly associated with indirect costs in the multiple linear regression model were: a mastectomy (p=.046), a revision surgery (p=.003) and being a craftsman (p=.023). 193 194 Being a manager, the invasive nature of the tumor or receiving a chemotherapy increased indirect costs in the model but with less degree of statistical signification. In the FC approach, 195 being a manager was the only significant factor associated with indirect costs in the multiple 196 linear regression model ( $p \le .001$ ) (Table 2). 197

In the univariate sensitivity analysis for the FC approach, the variation of friction
coefficient (benchmark: 0.8; +/-20%) impacted the most the amount of indirect costs from
6,179 €/patient to 9269 €/patient (basis: 7,724€/patient) (Figure 3). In the subgroup analysis,
indirect costs for managers were much more sensitive to a variation on estimated parameters
than other professional categories.

Tables with estimated average indirect costs by care pathway and occupationalactivities are published in the supplementary data.

#### 205 **Discussion**

206 Breast cancer associated direct costs are already well-documented in the literature. 207 Determinants of the indirect costs are less known. Studying the OPTISOINS cohort, Arfi et al. 208 (19) estimated the average daily allowances for sick leave costs (i.e. indirect medical costs) 209 around 8 841 € per patients for the first year from diagnosis. In the same cohort, we showed 210 that BC often cause sick leave periods and part-times recoveries in the year following 211 diagnosis leading to important indirect costs even in the absence of mortality. However, the utilization of two different approaches conducted to a gap in the estimated indirect costs per 212 213 patient: 22,722.00 € for the HC approach and 7,724.00 € for the FC approach. Factors were 214 correlated to the number of LWD and the amount of indirect costs in the HC approach: the 215 invasive nature of the tumor, receiving a mastectomy, a revised surgery, a chemotherapy, being a manager or a craftsman. Estimated indirect costs in the FC approach were mostly led 216 by the occupational status since managers present higher wages and higher friction periods. 217

218 BC mean age of diagnosis matches with the mean age of retirement in industrialized 219 countries (62 years old in France) (20). Moreover the age of retirement is nowadays being 220 delayed in many countries, following the increase of life expectancy (21). Thus, absenteeism, 221 indirect costs and more generally work consequences associated with this disease are 222 concerns for decision makers. In the OPTISOINS01 initial cohort, half of the patients had a paid activity during the study period. On average, these patients spent almost half the year 223 224 after diagnosis in sick leave and 24% of the patients returned to work in part-time resumption for a mean period of 114 days. A mean of 125 LWD was recorded for each patient and 26 225 226 patients were absent from work during the entire year of analysis, highlighting the impact of 227 BC on paid work. Only few studies report such data. Two US retrospective cohort studies found that working patients with BC had significantly higher length of absenteeism in 228 comparison with "control" patients (without BC) (9,22). However, using a HC approach in the 229

year following diagnosis, they found shorter period of absenteeism: about 10 days of sick
leave and between 25 and 45 days of short-term disability (according to the severity of the
disease). In Sweden, patients in the first year after a primary BC declared on average 271
working hours lost in the last 3 months before their interview (10). In accordance with our
results, mortality and early retirement were rare in the first year following diagnosis.

235 We conducted the first prospective cohort study focusing on cost of absenteeism 236 related to BC. The large initial sample size of OPTISOINS01 allowed us to exclude working patients with missing data which could have affected the quality of the analysis. Due to the 237 238 geographical design of the study, most patient in this cohort reside near Paris and may have 239 different socio-economic characteristics than the national population. Indeed, we noticed that 240 the proportion of managers in our sample was larger than in the French active population (41.6% vs. 17.1%), as well as the average wage (2,214  $\in$  vs.1,926  $\in$ ) (governmental data) (23). 241 The time frame was limited to one year after diagnosis but most indirect costs related to BC 242 occurs during this first year, except when the disease progresses to a metastatic stage or a 243 244 recurrence (10, 24).

We only considered in this study indirect costs due to absenteeism. There is a growing 245 interest for presenteeism, i.e. workers being at job with reduced capacity and productivity due 246 247 to illness, and unpaid work, which generate indirect costs (25). Exploring those phenomena require suitable tools (iMTA Productivity Cost Questionnaire (26), Valuation of Lost 248 249 Productivity (27)) which weren't used on our cohort. As a consequence, this component was excluded from our analysis. Even though few studies suggest substantial indirect costs 250 251 associated with presenteeism and unpaid work (24, 28, 29), there is no recommendation on 252 their integration.

Usually, authors refer to unique method for the calculation of the lost productivityvalue, the HC approach being the most commonly employed. For the FC approach, authors

use friction periods initially estimated by Koopmanschap et al. (2.8-3.2 months (6)), or other 255 256 values but without justification on their sources (30). Nevertheless, Koopmanschap's estimation is based on outdated data (1988-1990) and restricted to the Dutch labor market. 257 258 The time to fill job vacancies (i.e. the length of recruitment processes) increased by four weeks of time lag (decision to recruit and time between the recruitment and the first working 259 260 day) was used to approximate the friction period. Therefore, the friction period's length is strongly correlated with the unemployment rate and the economic environment. It varies over 261 time and across countries. It also has to be stratified on the socio professional category, since 262 the recruitment process is longer for managers than for employees (31). In the absence of 263 264 guidelines, we preferred to use both approaches and used French grey literature sources to estimate friction periods length, following the Koopmanschap's method. Compared to his 265 266 results, our estimation was similar for managers but much shorter for other socio professional 267 categories (62 vs. 86 days), highlighting the importance of using proper data for the FC approach. Nevertheless, our sensitivity analysis focused on the importance of the friction 268 269 coefficient estimate on the amount of indirect costs. In order to improve the robustness of our 270 results, we would need to proceed on our own estimation for France, which unfortunately was not possible here as it requires unavailable micro economic data at the firm level. Friction 271 272 period duration and friction coefficient values should then be regularly estimated and updated to facilitate the application of the FC approach. 273

As mentioned above, the necessity to account for indirect costs related to productivity losses in economic studies is not clearly established. Health Technology Assessment agencies provide different guidelines. Those focusing on payer perspective recommend to exclude those costs from the evaluation (32,33). By contrast, other agencies adopting a collective or societal perspective, including the World Health Organization, propose to include indirect costs, sometimes in a separate analysis (34–36). Besides the methodological challenge to

measure indirect costs, ethical objection are often mentioned (37). Indeed, if decision makers 280 281 use those studies to plan resource allocations, working age people would be favored over young or elderly, and any other unemployed population. Moreover, authors discuss the risk of 282 283 double counting in cost-effectiveness evaluation when including productivity loss. The question is to determine whether individuals take into account the impact of disease would 284 have on their income and career when they assess its impact on quality of life, which is 285 included in the denominator of the incremental cost-effectiveness ratio (ICER) (38,39). By 286 287 presenting direct and indirect costs in separate analysis, authors allow decision-makers to take a stand regarding these scientific and equity issues in healthcare resource utilization. 288

Furthermore, the relationship between disease and work should be more precisely studied to limit the consequences of being sick on occupational activity. The low proportion of early retirement procedures and the absence of dismissal in our cohort will reassure BC patients on their future capacity to work and motivate them to use part time recovery when needed. Another study showed a good readjustment to the workplace for patient after a BC (40).

295

#### 296 Conclusion

We believe crucial to report absenteeism, productivity losses and indirect costs.
Moreover, accurate data on type and length of absenteeism are fundamental, particularly for
economic studies based on simulated models and using a societal perspective.

300

**Declarations** 

#### **303** Ethics approval

- 304 This study was approved by the French National ethics committee (CCTIRS Authorization
- n°14.602 and CNIL DR-2014-167) and covers research at all participating hospitals. This
- study was registered with ClinicalTrials.gov (Identifier: NCT02813317).

#### 307 Ethics, consent to participate

308 All individuals included in this study consented to participate after a complete information.

#### **309 Consent for publication**

310 A written consent for publication was obtained from all individuals included in this study.

#### 311 Availability of data and materials

- 312 The datasets used and/or analysed during the current study are available from the
- 313 corresponding author on reasonable request.

#### 314 Competing interests

315 The authors declare that they have no competing interests.

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- economic studies of innovative techniques (PRME-K-2013). The funder had no role in the
- study design; in the collection, analysis, and interpretation of data; in the writing of the report;
- and in the decision to submit the paper for publication.

#### 321 Authors' contributions

- 322 CF, RR and DH contributed to the acquisition of data. CF, CT, PL, SB, BA, RR and DH
- 323 contributed in (1) the conception and design of the study, or acquisition of data, or analysis

- and interpretation of data, (2) drafting the article or revising it critically for important
- intellectual content, (3) final approval of the version to be submitted.

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327 The authors acknowledge the French National Cancer Institute.

## 328 **Figure Title:**

- 329 Figure 1. Flow-chart.
- 330 Figure 2. Indirect costs per patient.
- Figure 3. Tornado diagram for the univariate sensitivity analysis.

#### **Figure legends:**

- Figure 2: Tch: Human Capital Approach. Tcf: Friction Costs Approach.
- Figure 3: Horizontal axis: cost ( $\in$ ) / patient. SPC: socio professional category. For the
- subgroup analysis, the variation is applied only for the patients in the subgroup.

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Age <sup>1</sup> (years)	50,1 (±7.4)
Marital status	
-Single	31 (18 5%)
-Married	106 (63.1%)
-Divorced	28 (16.7%)
-Widow	1 (0.6%)
-Missing data	2 (1.2%)
Educational attainment	10 (00)
-Elementary	10 (6%)
-IVIIddle school	36 (21.4%)
-High school	24 (14.3%)
	98 (58.3%)
Socio professional group	
-Employee	70 (41.7%)
-Manager	70 (41.7%)
-Temporary worker	20 (11.9%)
-Craftsman	5 (3%)
-Missing data	3 (1.8%)
Monthly wage <sup>1</sup> (€)	2 214 (±761)
Diagnostic modality	
-Screening	69 (41.1%)
-Other	99 (58.9%)
Histology	
	21(12.5%)
-Invasive Missing data	140 (80.9%)
	1 (0.0%)
Surgery	
-Lumpectomy	129 (76.8%)
-Mastectomy	39 (23.2%)
-Sentinel lymph node	121 (72%)
<ul> <li>Axillary lymph node dissection</li> </ul>	33 (19.7%)
-No lymph node surgery	14 (8.3%)
Number of surgical procedures	
-1	129 (76.8%)
-2	36 (21.4%)
-3	3 (1.8%)
Adjuvant radiation therapy	153 (91.1%)
Adjuvant chemotherapy	80 (47.6%)
Adjuvant endocrine therapy	121 (72%)
Sick leave	
-Proportion with at least one period	156 (92.9%)
-Number of period <sup>1</sup>	2
-Number of days <sup>1</sup>	173 (±155)
-Number of days if at least one period <sup>1</sup>	186 (±153)
Part-time resumption	
-Proportion	40 (23.8%)
-Number of period <sup>1</sup>	1
-Number of days <sup>1</sup>	27 (±63)

-Number of days if part-time resumption<sup>1</sup> 114 (±83) 1: mean (+/-standart deviation).

	HC approach-SLR		HC approach-MLR		FC approach-SLR		FC approach-MLR	
	Coef. [95%IC]	p-value	Coef. [95%IC]	p-value	Coef. [95%IC]	p-value	Coef. [95%IC]	p-value
Age	-18.7	.928	-	-	21.4	.32	-	-
Marital status			-	-			-	-
-Single								
-Married	1515	.71			1152	.384		
-Divorced	3770	.471			1076	.524		
Educational			-	-			-	-
attainment								
-post high school								
-elementary	-4867	.462			-5458	.08		
-middle school	-6785	.082			-4160	.001		
-high school	1462	.747			-1029	.464		
Socio professional								
group								
-Paid employee								
-Manager	55 73	.096	4838	.117	5694	<.001	5688	<.001
-Temporary	-1726	.73	-618	.894	1505	.305	1838	.212
-craftsman	-15819	.085	-19231	.023	-3760	.161	-4248	.111
Diagnose by	-898,7	.775	-	-	-858	.394	-	-
screening								
Inavsive nature	13849	.003	11676	.086	2743	.067	1573	.462
Breast surgery								
-tumorectomy								
-mastectomy	13549	<.001	8183	.046	2489	.033	859	.505
Axillary surgery								
-sentinal lymph								
node			0.450			074		
-no gesture	-6692	.216	3152	.676	-1591	.3/1	458	.847
-complete	14023	<.001	5271	.215	3122	.012	2297	.088
dissection								
Number of	7710	.018	9624	.003	1465	.162	1652	.102
surgical								
procedures					1700			
Chemotherapy	11300	<.001	5245	.113	1760	.075	420	.687
Radiotherapy	-9240	.087	-4003	.465	-1756	.312	-1282	.459
Hormonotherapy	5743	.094	1837	.624	1135	.303	732	.537

SLR: Simple Linear Regression. MLR: Multiple Linear Regression. HC: Human Capital. FC: Friction costs.

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