
Brazil Labor market analysis IT & Engineering Final Report

Client:

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Contents

Contents	4
Tables and Charts	5
1. Introduction.....	6
2. IT Market	7
2.1. General overview of IT sector in Brazil	7
2.2. Numbers and statistics of IT specialists	7
2.3. Skills and experience of IT specialists	8
2.4. Demographics of IT specialists, best universities	10
2.5. Salary levels and its evolution for IT specialists	13
2.6. IT specialist conclusions	13
3. Engineering Market	14
3.1. General overview of engineering sector in Brazil.....	14
3.2. Numbers and statistics of engineering specialists	14
3.3. Skills and experience of engineering specialists	15
3.4. Demographics of engineering specialists, best universities	15
3.5. Salary levels and its evolution for engineering specialists	18
3.6. Engineering specialist conclusions	20
4. Job market platforms.....	21
5. Benefits	22
References	23

Tables and Charts

Table 1. Distribution of IT professionals by role.....	8
Table 2. 10 best IT universities in Brazil, ranked by the Ministry of Education.	12
Table 3. IT professionals' monthly salary levels for 2017 and projection to 2019.	13
Table 4. Top 10 engineering roles register in Brazil.	14
Table 5. 17 best universities of engineering in Brazil, ranked by the Ministry of Education.	17
Table 6. Average monthly salary for the main three job positions for 2017/2018 and 2019 (Values in BRL).	19
Table 7. Average monthly salary for the main three job positions for 2017/2018 and 2019 (Values in EUR).	19
Chart 1. Number of IT employees in Brazil from 2007 to 2017 ²	7
Chart 2. Evolution of schooling in the labor market. ⁴	8
Chart 3. Most common certifications among IT specialists (%).	9
Chart 4. Evolution in the number of IT professionals with English qualification.	10
Chart 5. IT professional by age group from 2007 to 2017.....	10
Chart 6. Evolution of gender participation in the IT labor market.	11
Chart 7. Brazilian states and areas in which IT professionals are mainly concentrated, and respectively growth rate from 2007 to 2017.	11
Chart 8. 50 best universities of IT in Brazil – locations.	12
Chart 9. Hiring by age group in the last 7 months up to April 2019.....	15
Chart 10. Percentage of women graduating in civil engineering and new records of engineers at Confea. .	16
Chart 11. Locations that most hired engineers with a formal contract in the last 7 months.	17
Chart 12. 10 best universities of engineering - locations that most hired engineers with a formal contract in the last 7 months.	17
Chart 13. Salary range, for the last 7 months, by age group.....	20

1. Introduction



Population:	209,967,071 (2019) ¹
Total GDP:	\$ 2.056 trillion USD (2017) ¹
GDP per capita:	\$ 9,821.41 USD (2017) ¹
Availability of data:	May 2019

Just like in Estonia, the lack of IT & engineering specialists in Brazil has been a topic for discussion for several years. The companies and sector organizations as well as the government have pointed out this problem.

This report gives an overview of IT & engineering job market in Brazil and the results include the following information, taking into account the availability of data found:

- Type of IT & Engineering specialists, their skills and education levels, levels of English, age, gender, demographics, size of their labor force of both;
- Cities and areas in which they are mainly concentrated;
- Situation of the labor market, experience and qualifications;
- Salary levels and its evolution;
- Other important or interesting trends in the IT & Engineering labor market.

In our research, we have used only document analysis and public information available. We analyzed the data in local language and translated into English.

¹ IBGE - Instituto Brasileiro de Geografia e Estatística. (2017). Fonte: <https://www.ibge.gov.br/pt/inicio.html>

2. IT Market

2.1. General overview of IT sector in Brazil

Even during crisis, the demand for IT professional in Brazil is still growing. In 2017, Brazil's IT market grew by 4.5%. Brazil is the country with the highest value in investments in Latin America. In second place, there is Mexico with US \$ 20.6 billion, followed by Argentina (US \$ 8.4 billion) and Colombia (US \$ 7 billion). Brazil regained the first position on the continent; Brazil accounts for 39.1% of the investments made by Latin Americans, which corresponds to total amount of US \$ 97.3 billion.

The forecast for 2018 for the national IT market to was growth of 4.1% by 2018, so the demand for professionals and services has remained high. It is projected that mobility, big data, cloud computing and social business should pull growth. The IT industry in Brazil has around 13,500 companies.

2.2. Numbers and statistics of IT specialists

In 2017², Brazil registered 514,605 IT employees. This number has been constantly growing. From 2007 until 2017, it has grown by around 76%. There were only two years that the IT market did not experience an employment growth, as it's shown in Chart 13, below. The average annual growth rate was equal to 6.1%.

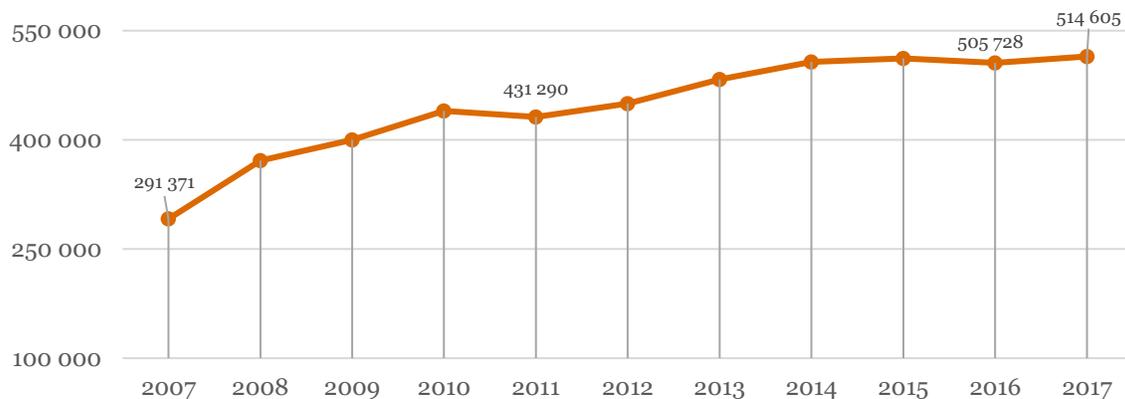


Chart 1. Number of IT employees in Brazil from 2007 to 2017²

According to the Softex report³, since 2007, the number of IT professionals with the System Analyst role has been the biggest, representing around 60% of the group. The second main role is Operations technicians, followed by Programmers. These three roles together corresponds to 85% of the total.

² Ministério da Economia. (2018). *RAIS - Relação Anual de Informações Sociais*. (Ministério da Economia/ Secretaria Especial de Previdência e Trabalho) Acesso em 06 de 2019, disponível em <http://www.rais.gov.br/sitio/index.jsf>

³ Softex. (2019). *Persona TI - Caracterização do Profissional de TI e evolução de suas principais especificidades nos últimos 10 anos*. Softex – Associação para Promoção da Excelência do Software Brasileiro. Softex. Fonte: <https://softex.br/download/persona-ti/>

Table 1. Distribution of IT professionals by role.⁴

Occupancy rate	System Analysts	Operations technicians	Programmers	Managers	IT Specialists	IT Engineers	Directors	Total
2007	103,293	48,139	28,687	11,784	8,023	1,761	1,325	203,012
2017	167,249	57,634	38,331	26,826	14,892	3,379	2,117	310,428

2.3. Skills and experience of IT specialists

In the last 10 years, there has been a change in the composition of the professional staff relating to Graduation Status. The share of students that finished only high school decreased (from 40.7% in 2007 to 25% in 2017), on the other hand, there was nearly threefold increase of professionals with the university degree, from 50,059 in 2007 to 148,590 in 2017. Such behavior may suggest an increasing importance of higher education. Accordingly, in 2017 while a quarter of IT professionals had completed high school, the vast majority (73%) had finished higher education. Chart 2 illustrates that the number of IT professionals with a post-graduation degree represents a very low percentage in the market, although the percentage of teachers has grown – masters and doctors represent only 1.33%.⁵

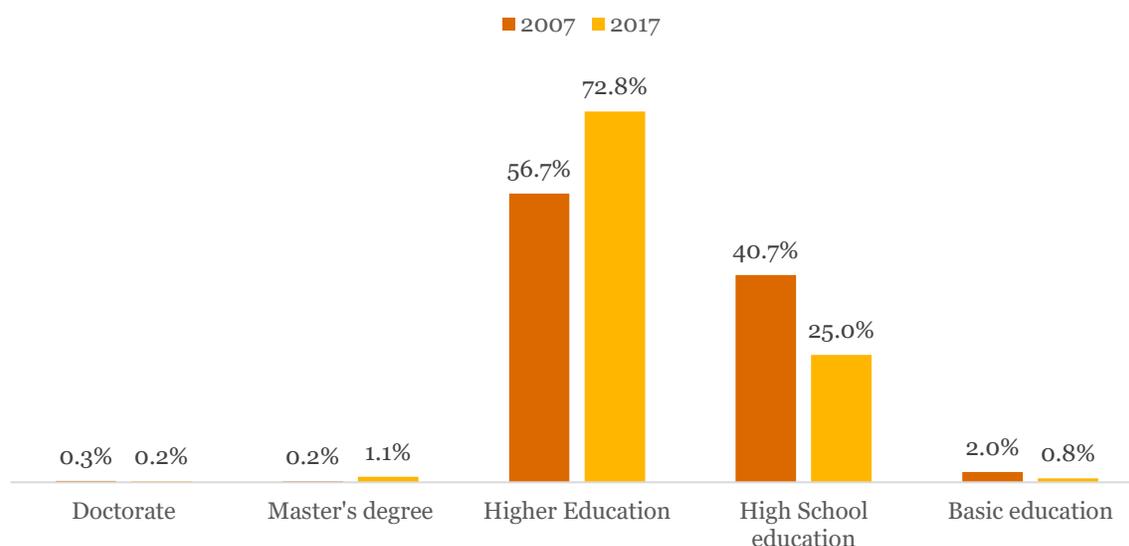


Chart 2. Evolution of schooling in the labor market.⁴

⁴ Ministério da Economia. (2018). *RAIS - Relação Anual de Informações Sociais*. (Ministério da Economia/ Secretaria Especial de Previdência e Trabalho) Acesso em 06 de 2019, disponível em <http://www.rais.gov.br/sitio/index.jsftps://selecaoengenharia.com.br/blog/tendencias-do-mercado-de-trabalho-para-engenharia-em-2019/>

⁵ Softex. (2019). *Persona TI - Caracterização do Profissional de TI e evolução de suas principais especificidades nos últimos 10 anos*. Softex – Associação para Promoção da Excelência do Software Brasileiro. Softex. Fonte: <https://softex.br/download/persona-ti/>

36% from professionals that have some certification are certified in ITIL⁶. MCP and COBIT are also highlights, but SCRUM certifications have grown from 2016 to 2018. The following Chart 3⁶ gives an overview of specific skills among IT specialists.

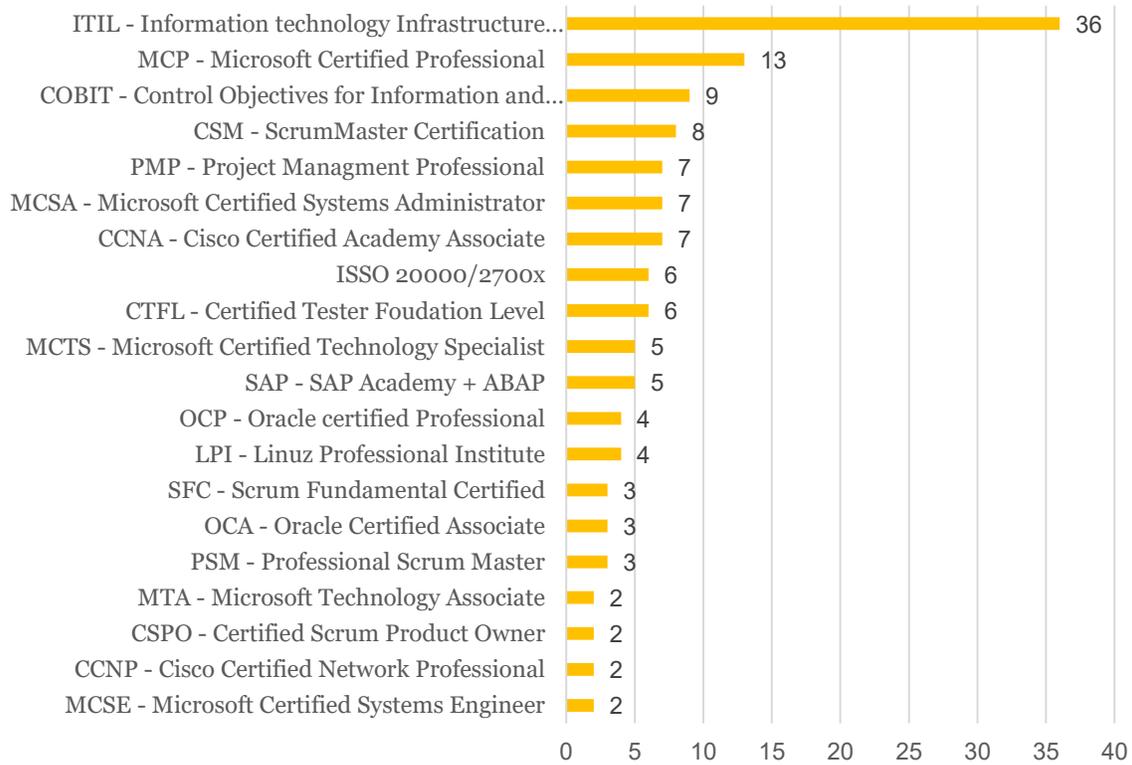


Chart 3. Most common certifications among IT specialists (%).⁶

Despite the great growth in the number of companies requesting English-speaking professionals (Brazil is a Portuguese speaking country), the evolution of qualification in this requirement remains quite low⁴. In 2010 18% of professionals were fluent in English (Chart 4), in 2018 the percentage has grown to 21%. Currently, being fluent English speaker can be a great competitive differential since most of the employees only have technical English knowledge.⁶

⁶ APInfo. (2018). *Pesquisa : Salários e mercado de TI*. Acesso em Jun de 2019, disponível em APInfo: https://www.apinfo2.com/apinfo/inc/resultados_pesquisas.cfm

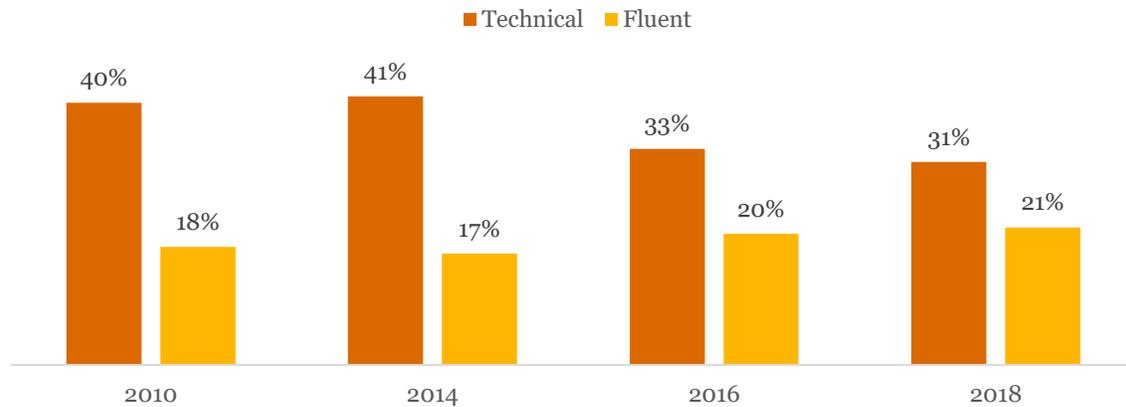


Chart 4. Evolution in the number of IT professionals with English qualification.⁶

2.4. Demographics of IT specialists, best universities

Back in 2007, 50% of IT professionals were less than 30 years old (20.4% aged 18-24 and 29.6% aged 25-29). This has changed to 39.5% in 2017, so the IT professionals are on average getting older.⁷

Those aged between 30 and 39 years of age, who accounted for 28.9% in 2007, came to dominate the formal market 10 years later, representing 40.2% of the total.

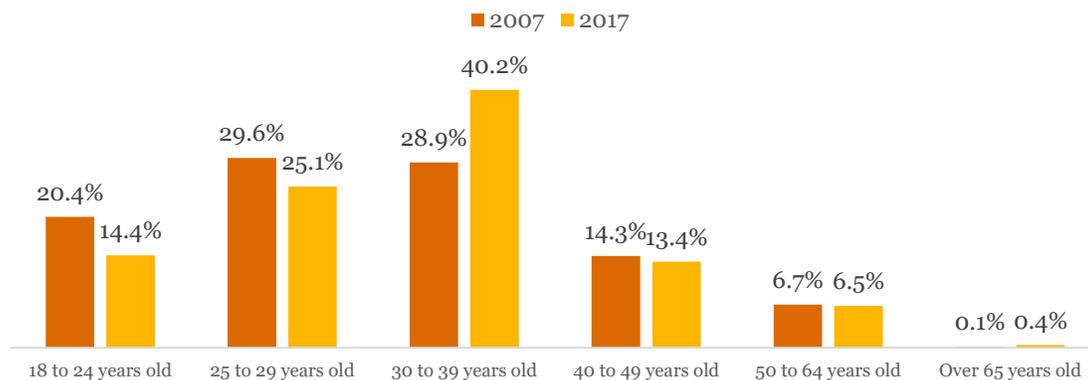


Chart 5. IT professional by age group from 2007 to 2017.⁸

In 2007, women occupied 24% of jobs in IT market and men 76%. Although the number of women has grown 67% from 2007 to 2017, the number of men increased much faster (185%) so proportionally the participation of women in the IT labor market has decreased to about 20% during those 10 years.⁷

⁷ Softex. (2019). *Persona TI - Caracterização do Profissional de TI e evolução de suas principais especificidades nos últimos 10 anos*. Softex – Associação para Promoção da Excelência do Software Brasileiro. Softex. Fonte: <https://softex.br/download/persona-ti/>

⁸ Ministério da Economia. (2018). *RAIS - Relação Anual de Informações Sociais*. (Ministério da Economia/ Secretaria Especial de Previdência e Trabalho) Acesso em 06 de 2019, disponível em <http://www.rais.gov.br/sitio/index.jsf>



Chart 6. Evolution of gender participation in the IT labor market.⁸

As presented in Chart 7⁹, the majority IT professionals are employed in the State of São Paulo, corresponding to almost 225,000 professionals in 2017. Rio de Janeiro comes in second place, employing 11% of the total amount of IT professionals in Brazil, followed by Minas Gerais (9%). Thus, the Brazilian Southeast region is where most of professionals are allocated (around 316,000). The South region also stood out by being the region with the highest IT employing growth rate in the country (121% average).

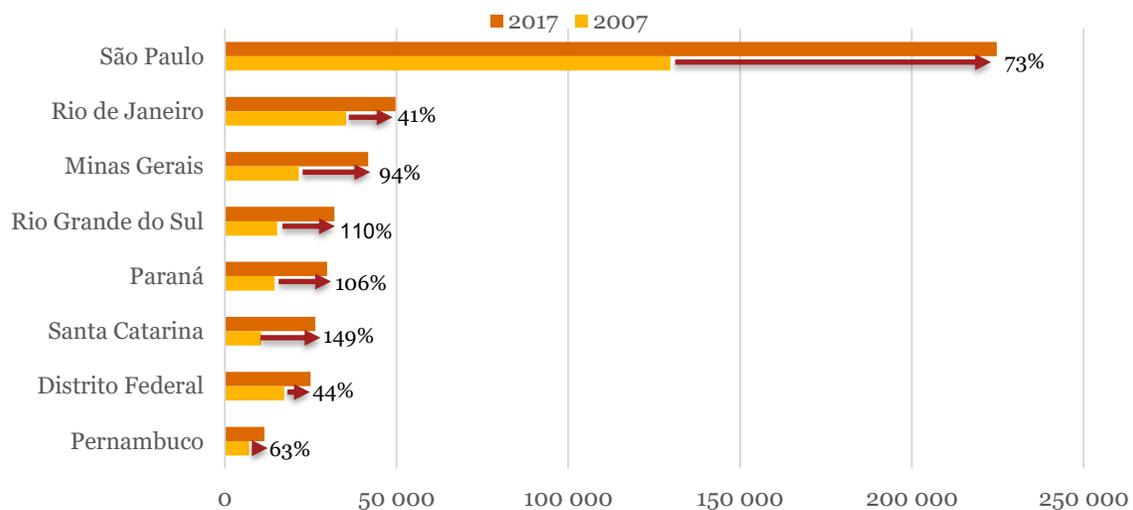


Chart 7. Brazilian states and areas in which IT professionals are mainly concentrated, and respectively growth rate from 2007 to 2017.¹⁰

This is directly connected also to the fact that Southeast region is also the development cradle of new IT specialists. Out of 50 best IT universities in Brazil (evaluated by the Ministry of Education) Southeast region makes up almost half (23 universities).

⁹ Ministério da Economia. (2018). RAIS - Relação Anual de Informações Sociais. (Ministério da Economia/ Secretaria Especial de Previdência e Trabalho) Acesso em 06 de 2019, disponível em <http://www.rais.gov.br/sitio/index.jsf>

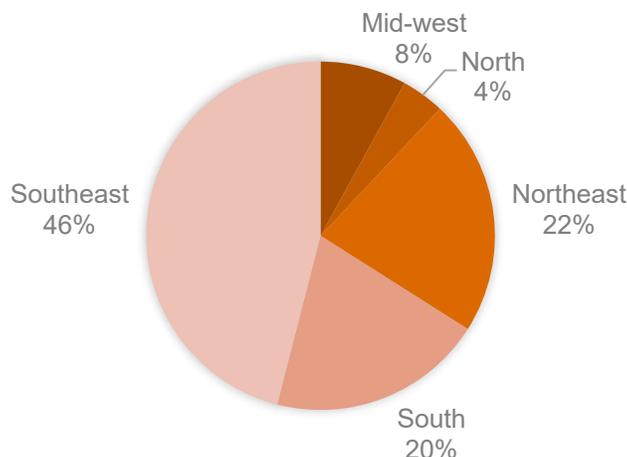


Chart 8. 50 best universities of IT in Brazil – locations.

10 best IT universities in Brazil are listed below in table.

Table 2. 10 best IT universities in Brazil, ranked by the Ministry of Education.

IT Universities	City	State	Region	Evaluation Score at Ministry of Education (0 to 5)
FACULDADE ATENAS ¹⁰	Paracatu (MG)	Minas Gerais	Southeast	4.29
CENTRO FEDERAL DE EDUCAÇÃO TECNOLÓGICA CELSO SUCKOW DA FONSECA (CEFET) ¹¹	Nova Friburgo (RJ)	Rio de Janeiro	Southeast	4.24
UNIVERSIDADE VILA VELHA (UVV) ¹²	Vila Velha (ES)	Espírito Santo	Southeast	4.12
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO ESPÍRITO SANTO (IFES) ¹³	Cachoeiro de Itapemirim (ES)	Espírito Santo	Southeast	4.11
FACULDADE UNA DE CONTAGEM (FUNAC) ¹⁴	Contagem (MG)	Minas Gerais	Southeast	4.07
UNIVERSIDADE DO VALE DO TAQUARI (UNIVATES) ¹⁵	Lajeado (RS)	Rio Grande do Sul	South	4.06
CENTRO UNIVERSITÁRIO LUTERANO DE PALMAS (CEULP) ¹⁶	Palmas (TO)	Tocantins	Mid-west	3.98
UNIVERSIDADE DE FRANCA (UNIFRAN) ¹⁷	Franca (SP)	São Paulo	Southeast	3.94
FACULDADE METROPOLITANA DA GRANDE FORTALEZA (FAMETRO) ¹⁸	Fortaleza (CE)	Ceará	Northeast	3.92
FACULDADE POLITÉCNICA DE CAMPINAS (POLICAMP) ¹⁹	Campinas (SP)	São Paulo	Southeast	3.87

¹⁰ http://www.atenas.edu.br/site_atenas/

¹¹ <http://www.cefet-rj.br/index.php>

¹² <https://www.uvv.br/>

¹³ <https://www.ifes.edu.br/>

¹⁴ <https://www.una.br/unidades/una-contagem/>

¹⁵ <https://www.univates.br/>

¹⁶ <http://www.ulbra.br/palmas>

¹⁷ <https://www.unifran.edu.br/>

¹⁸ <http://www.unifametro.edu.br/>

¹⁹ <http://uniesp.edu.br/sites/policamp/>

2.5. Salary levels²⁰ and its evolution for IT specialists

The average monthly salary for an IT professional in Brazil, in the year of 2017, was € 2,048 (R\$ 9,011), and the projection to 2019 is € 2,124 (R\$ 9,349). In Table 1, it has been presented the distribution of IT professionals by role. In the next Table 3, it is possible to notice the difference between roles' salaries. Directors earn almost 3.3 times more than a System Analyst.²¹

Both in 2007 and in 2017 the average salary among men is higher than the average among women. If in 2007 men earned 5.34% more than women, in 2017 this difference increased to 11.05%.²²

Table 3. IT professionals' monthly salary levels for 2017 and projection to 2019.^{11 23}

Role	2017 (BRL)	2017 (EUR)*	2019** (BRL)	2019** (EUR)*
Directors	20,156	4,581	20,912	4,753
Managers	11,497	2,613	11,928	2,711
IT Engineers	10,637	2,417	11,036	2,508
IT Specialists	7,446	1,692	7,726	1,756
System Analysts	6,166	1,401	6,398	1,454
IT Programmers	4,552	1,034	4,722	1,073
Operations technicians	2,626	597	2,725	619

*Euro exchange rate from June (€ 4.40)

** 2019 salary projection based on Brazilians' 2018 average inflation rate.

Note that the hiring of an employee also represents considerable additional expenses for the company, including the employer labor tax charges. When the employee is hired within the CLT (Consolidation of Labor Laws) regime, the additional charges are at least 30% of employee's base salary. To exemplify – if a person was hired to receive a salary of R\$ 1,000, it will cost at least R\$ 1,300 for the organization. Note that in addition to tax costs (such as FGTS (Employee's Severance Guarantee Fund) and INSS (Social security), companies often provide various incentives such as 13th salary, transportation vouchers, additional vacation, medical insurance, food or meal allowance, payment of overtime or additional night expenses etc.

2.6. IT specialist conclusions

In Brazil, jobs in the IT sector grew quite significantly between 2007 and 2017, rising from 291,371 professionals to 514,605, at an average annual growth rate of 6.14%. ca 60% of IT professionals are concentrated in the Brazilian Southeast region. Average salary cost including all employment taxes and other compulsory charges is around 2,300-2,700 EUR per month.

²⁰ All salary numbers should be considered as gross salary. Due to complex payroll system, statistics on net salary are not available. For example, the rate for social security tax vary from 8% to 11% and the rate for federal income tax vary from 0% to 27.5% as there are many exceptions in the tax system. To better understand the complexity, see for example <https://www.it-adp.com/assets/vfs/Domain-3/ADP-Streamline/Brazil-Digital-D.pdf>

²¹ IBGE - Instituto Brasileiro de Geografia e Estatística. (2017). Fonte: <https://www.ibge.gov.br/pt/inicio.html>

²² Softex – Associação para Promoção da Excelência do Software Brasileiro. (2019). *MULHERES NA TI: Atuação da mulher no mercado de trabalho formal brasileiro em tecnologia da informação*. Ministério da Ciência, Tecnologia, Inovações e Comunicações - MCTIC. Fonte: http://ftp.softex.br/Inteligencia/mulheres_na_ti/mulheres_na_ti.pdf

²³ Ministério da Economia. (2018). *RAIS - Relação Anual de Informações Sociais*. (Ministério da Economia/ Secretaria Especial de Previdência e Trabalho) Acesso em 06 de 2019, disponível em <http://www.rais.gov.br/sitio/index.jsf>

3. Engineering Market

3.1. General overview of engineering sector in Brazil

In the last decades, the Engineering market has experienced a real explosion in jobs, with increasing investments and government programs such as the PAC, 2014 World Cup and 2016 Olympics, among others. The new concept of the Fourth Industrial Revolution has been leading investments in modernization, automation and consequent increase in quality and production levels.

However, at the same time, Brazil had experienced a retraction in the economic growth, forcing companies to reduce costs and operate in a leaner framework of operations. Recent corruption scandals such as *Lava Jato Operation* coupled with the *Mariana* (2015) and *Brumadinho* (2019) dam disasters have halted the construction of many public infrastructure projects. As a result, many large companies had to lay off up to 1 million construction workers, including many engineers²⁴.

From January 2015 to January 2017, the number of dismissals surpassed by 48,000 the number of admissions of engineers from all areas in the country. Despite this scenario, Civil Engineering remains one of the most promising Engineering areas in the future here. In 2018, the Construction Confidence Index (ICST) has been steadily rising and the sector forecast for 2019 is still growing.

3.2. Numbers and statistics of engineering specialists

According to the Brazilian Federal Council of Engineering and Agronomy (CONFEA)²⁵, there are 1,073,504 professionals registered in engineering and agronomy roles. For engineering, there are 926,321 people in 99 engineering categories. Civil engineering is the main role, representing alone 35% of the total registered people in the area (327,341 professionals). Another role with great representatively is the Agricultural engineer. There are 106,646 professionals register under this title in Brazil. Electric and Mechanical engineers are also very known roles in the area, representing 11% and 10% of the total, respectively (Table 4).

Table 4. Top 10 engineering roles register in Brazil.¹⁴

Engineering roles	Registers
Civil	327,341
Agricultural	106,646
Electrical	104,505
Mechanical	94,382
Work Safety	61,717
Production	32,494
Environment	24,716
Chemistry	18,754

²⁴ Como está o mercado para engenheiro civil no Brasil. <https://selecaoengenharia.com.br/blog/como-esta-o-mercado-para-engenheiro-civil-no-brasil/>

²⁵ CONFEA - Conselho Federal de Engenharia e Agronomia. (06 de June de 2019). Estatísticas do Sistema Confea/Crea. Brasília, DF, Brazil. Acesso em 06 de June de 2019, disponível em <http://www.confea.org.br/estatisticas>

Control and Automation	18,054
Forest	14,403
Other roles	123,303

3.3. Skills and experience of engineering specialists

From 2010 to January 2018, CONFEA (Federal Council of Engineering and Agronomy) recorded 779,488 new professionals, with 2013 and 2014 being the year with the highest number of registrations, 105,894 and 103,164, respectively.

Of the total number (1,381,332) of active engineers registered in CREAs (Regionals Council of Engineering and Agronomy), professionals with permanent degrees and graduates in the country is 1,379,729 (99.88%). About the qualifications of these professionals, 820,498 of have a degree in engineering, 34,317 are technologist, 643,768 are technicians and only 54,715 (3.5%) have some type of postgraduate degree.²⁶

3.4. Demographics of engineering specialists, best universities

As shown in Chart 9, in the last 7 months (up to April 2019), most professionals hired in the engineering area are between 31 and 40 years old, representing 38% of the total. The second group with great representatives is from 21 years old to 30 years old (34%), mainly students that had just graduated. 141 professionals under 20 years were hired and 167 were over 70 years. These two groups together represents less than 1% of the total. In section 3.5 the connection between age groups and the average salary is presented.

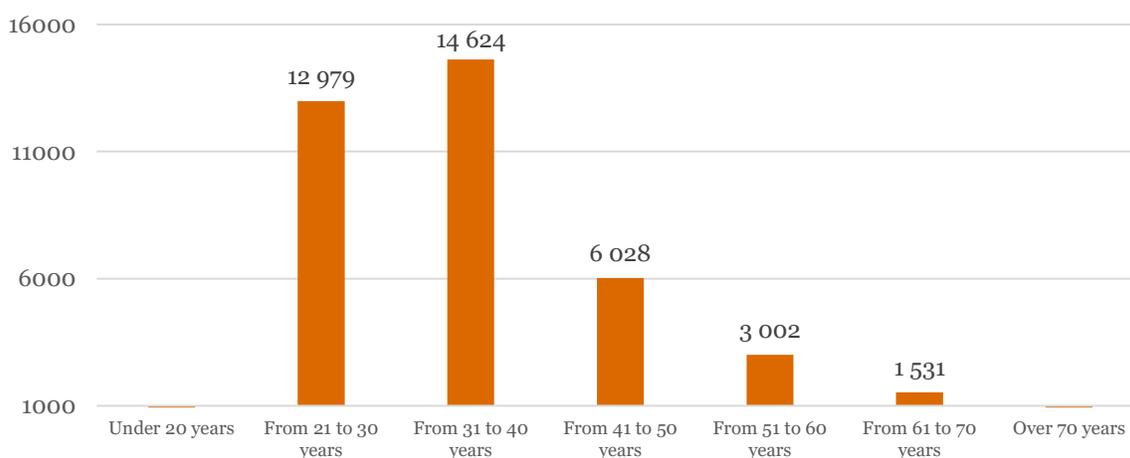


Chart 9. Hiring by age group in the last 7 months up to April 2019.²⁷

²⁶ Neto, R. R. (2018, January). *Engenharia e o mercado de trabalho*. Retrieved from buildin - Construção & Informação: Federal Council of Engineering and Agronomy

²⁷ Salário. (Abril de 2019). *Engenheiros – Cargos e salários das engenharias no Brasil*. Fonte: Salário: <https://www.salario.com.br/estatisticas/engenheiros-cargos-e-salarios-da-engenharia>

In 2015, women accounted for 30.3% (Chart 10) of enrollments in civil engineering courses and 26.9% of professionals in the engineering market. The number of women enrolled in undergraduate courses in civil engineering has been growing every year since 2007.

Women represented 28.1% of the total number of new engineers and engineers registered in 2017, in the COFEA. This is the most recent number available for comparison.²⁸

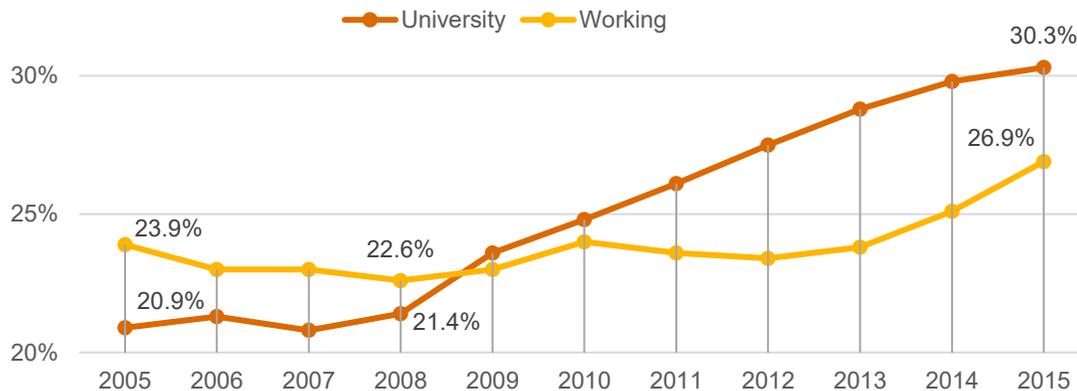


Chart 10. Percentage of women graduating in civil engineering and new records of engineers at Confea.²⁹

As for the market, São Paulo is the state that most hires engineering professional (Chart 11). From September 2018 until April 2019, the state registered 6,046 new professionals in the area. Minas Gerais and Rio de Janeiro comes next. The Southeast region was responsible for hiring 11,072 professionals in 7 months. It is important to highlight that Bahia is in the top 5 states that most hired professionals in the country, being the #1 state from the Northeast.

²⁸ Moreno, A. C. (September de 2017). *Porcentagem de mulheres nas faculdades de engenharia civil cresce mais que n° de engenheiras no mercado*. Acesso em June de 2019, disponível em G1 - Educação - Guia de carreira : <https://g1.globo.com/educacao/guia-de-carreiras/noticia/porcentagem-de-mulheres-nas-faculdades-de-engenharia-civil-cresce-mais-que-n-de-engenheiras-no-mercado.ghtml>

²⁹ Moreno, A. C. (September de 2017). *Porcentagem de mulheres nas faculdades de engenharia civil cresce mais que n° de engenheiras no mercado*. Acesso em June de 2019, disponível em G1 - Educação - Guia de carreira : <https://g1.globo.com/educacao/guia-de-carreiras/noticia/porcentagem-de-mulheres-nas-faculdades-de-engenharia-civil-cresce-mais-que-n-de-engenheiras-no-mercado.ghtml>

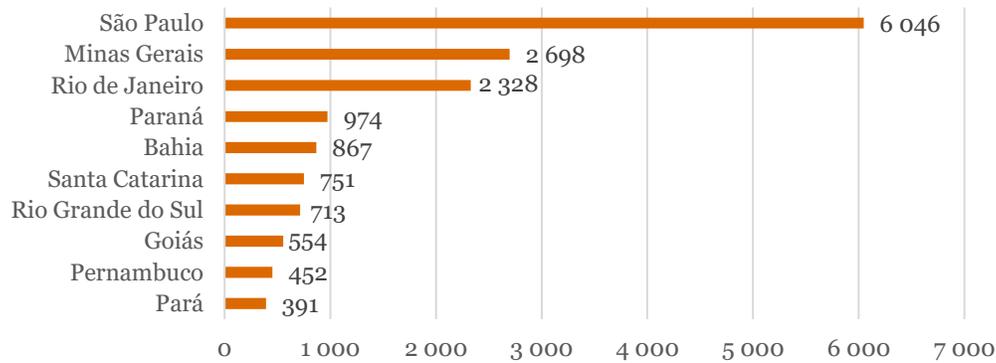


Chart 11. Locations that most hired engineers with a formal contract in the last 7 months.³⁰

The concentration of engineers in the southeast region of Brazil is highly linked to the location of universities that teach engineering – just like for IT specialist, the best universities are concentrated in southeast region (Chart 12).

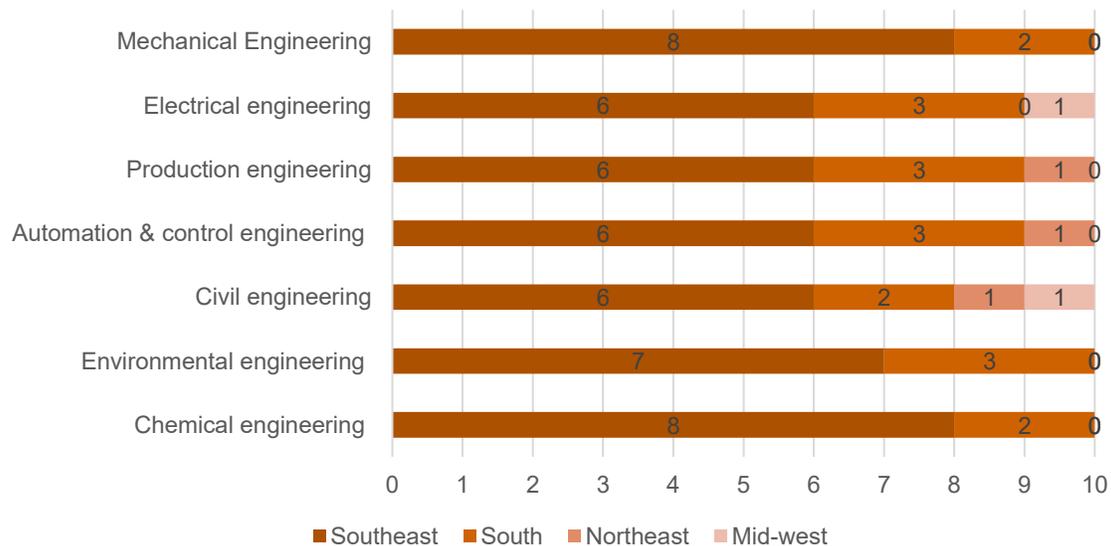


Chart 12. 10 best universities of engineering - locations that most hired engineers with a formal contract in the last 7 months.³¹

Table 5. 17 best universities of engineering in Brazil, ranked by the Ministry of Education.

Engineering universities	City	State	Region
Centro Universitário da Fundação Educacional Inaciana Pe Sabóia de Medeiros (FEL)	São Paulo	São Paulo	Southeast
Centro Universitário do Instituto Mauá de Tecnologia (CEUN-IMT)	São Paulo	São Paulo	Southeast
Instituto Tecnológico de Aeronáutica (ITA)	São José dos Campos	São Paulo	Southeast

³⁰ Salário. (Abril de 2019). *Engenheiros – Cargos e salários das engenharias no Brasil*. Fonte: Salário: <https://www.salario.com.br/estatisticas/engenheiros-cargos-e-salarios-da-engenharia/>

³¹ Salário. (Abril de 2019). *Engenheiros – Cargos e salários das engenharias no Brasil*. Fonte: Salário: <https://www.salario.com.br/estatisticas/engenheiros-cargos-e-salarios-da-engenharia/>

Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS)	Porto Alegre	Rio Grande do sul	South
Universidade de Brasília (UNB)	Brasília	Federal District	Midwest
Universidade de São Paulo (USP)	São Paulo	São Paulo	Southeast
Universidade Estadual de Campinas (UNICAMP)	Campinas	São Paulo	Southeast
Universidade Estadual Paulista Júlio de Mesquita Filho (UNESP)	Countryside cities	São Paulo	Southeast
Universidade Federal de Minas Gerais (UFMG)	Belo Horizonte	Minas Gerais	Southeast
Universidade Federal de Pernambuco (UFPE)	Recife	Pernambuco	Northeast
Universidade Federal de Santa Catarina (UFSC)	Florianópolis	Santa Cartarina	South
Universidade Federal de Santa Maria (UFSM)	Santa Maria	Rio Grande do sul	South
Universidade Federal de São Carlos (UFSCAR)	São Carlos	São Paulo	Southeast
Universidade Federal de Viçosa (UFV)	Viçosa	Minas Gerais	Southeast
Universidade Federal do Paraná (UFPR)	Curitiba	Paraná	South
Universidade Federal do Rio de Janeiro (UFRJ)	Rio de Janeiro	Rio de Janeiro	Southeast
Universidade Federal do Rio Grande do Sul (UFRGS)	Porto Alegre	Rio Grande do sul	South

In the period from September 2018 to April 2019, there were 18,293 formal hiring of engineers and 20,179 dismissals, resulting in a negative balance of -1886 formal jobs generated. However, after a period of slowdown in the economy and a noticeable decrease in jobs in all sectors, the market confidence index now has gradually been increasing. In general terms, the projections point to a growth of 3.76% per year for engineers all over the country, facing an economic growth scenario of 3% per year of GDP, employing some specialties such as metallurgical engineers, materials and mine engineers and alike) increasing up to 4.17% per year³². Based on the information researched, IPEA - Institute of applied economic research made this projection of Brazilian economy growth until 2023, considering all the investment foreseen in the current period.

3.5. Salary³³ levels and its evolution for engineering specialists

In general, the average salary for an engineer in Brazil is six times the minimum wage for the country (R\$ 998 or €226). As presented in Table 6, the role with highest salary for Junior and Senior positions is the civil engineer, while as for coordinator role, the Electrical engineer is the highest paid role.

³² IPEA - Institute of Applied Economic Research
<http://repositorio.ipea.gov.br/handle/11058/3432?mode=full>

³³ All salary numbers should be considered as gross salary. Due to complex payroll system, statistics on net salary are not available. For example, the rate for social security tax vary from 8% to 11% and the rate for federal income tax vary from 0% to 27.5% as there are many exceptions in the tax system. To better understand the complexity, see for example <https://www.it-adp.com/assets/vfs/Domain-3/ADP-Streamline/Brazil-Digital-D.pdf>

Table 6. Average monthly salary for the main three job positions for 2017/2018 and 2019 (Values in BRL).³⁴

Roles	2017/2018			2019		
	Junior	Senior	Coordinator	Junior	Senior	Coordinator
Civil	6,839	8,250	8,739	6,922	8,325	8,816
Agricultural*	-	-	-	-	-	-
Electrical	5,600	7,450	8,883	5,600	7,450	8,883
Mechanical	5,433	7,217	8,533	5,583	7,333	8,716
Work Safety	5,550	7,500	8,800	5,391	7,383	8,841
Production	5,017	6,833	8,367	5,116	6,900	8,450
Environment	4,400	6,467	7,617	4,458	6,308	7,850
Chemistry	4,967	7,133	8,283	5,100	7,300	8,483
Control and Automation	5,283	7,083	8,533	5,400	7,166	8,641
Forest*	-	-	-	-	-	-

*No information were found related to these roles

Table 7. Average monthly salary for the main three job positions for 2017/2018 and 2019 (Values in EUR).

Roles	2017/2018			2019		
	Junior	Senior	Coordinator	Junior	Senior	Coordinator
Civil	1,554	1,875	1,986	1,573	1,892	2,004
Agronomist*	-	-	-	-	-	-
Electrical	1,273	1,693	2,019	1,273	1,693	2,019
Mechanical	1,235	1,640	1,939	1,269	1,667	1,981
Work Safety	1,261	1,705	2,000	1,225	1,678	2,009
Production	1,140	1,553	1,902	1,163	1,568	1,920
Environment	1,000	1,470	1,731	1,013	1,434	1,784
Chemistry	1,129	1,621	1,883	1,159	1,659	1,928
Control and Automation	1,201	1,610	1,939	1,227	1,629	1,964
Forest*	-	-	-	-	-	-

Euro exchange rate from June (€ 4.40)

*No information were found related to these roles

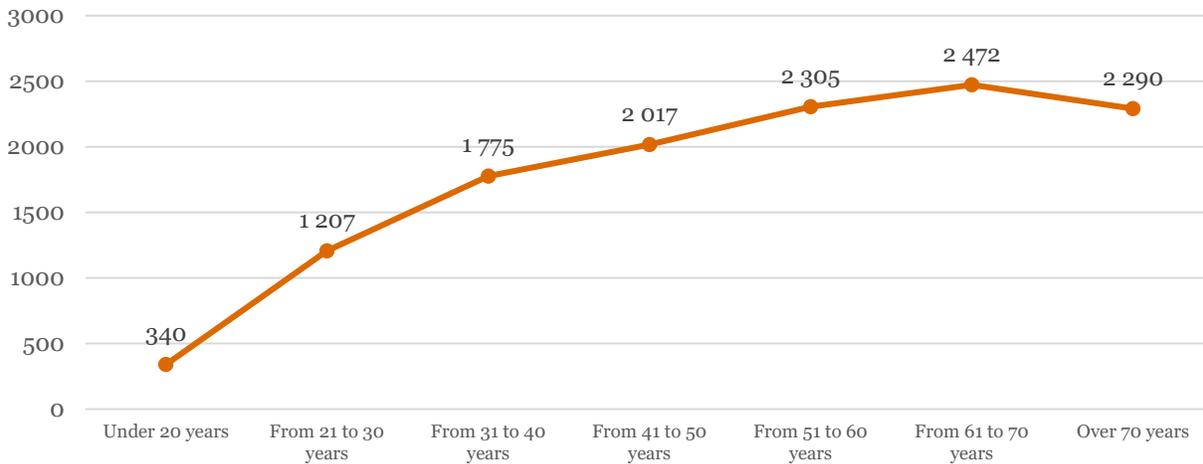
Note that the hiring of an employee also represents considerable additional expenses for the company, including the employer labor tax charges.

The role with biggest wage increase during the career progression is the Environment engineer. Its salary range is below the average, when compared to the other roles, but the salary can increase up to 76% during the professional career.

³⁴ PageGroup. (2019). *Guia de Salário 2019*. MichaelPage. Fonte: https://www.michaelpage.com.br/sites/michaelpage.com.br/files/Guia%20de%20Sal%C3%A1rios%20PageGroup%202019%20revisado_1.pdf

PagePersonnel. (2017/2019). *Guia de Salário - Estagiários, Analistas e Coordenadores*. PageGroup. Fonte: <https://www.pagepersonnel.com.br/sites/pagepersonnel.com.br/files/Page%20Personnel%20-%20Guia%20de%20Sal%C3%A1rios%20para%20Estagi%C3%A1rios%20e%20Analistas%20e%20Coordenadores.pdf>

As the salary change for job positions, it also changes according to the age group. These two groups of data are probably connected: the older the professional becomes, the more he develops his seniority and his salary increases. Chart 13 presents the salary evolution by the age group rise in the last 7 months (up to April 2019) of professional hiring.



Values presented in Euros. Exchange rate from June (€ 4.40)

Chart 13. Salary range, for the last 7 months, by age group.³⁵

3.6. Engineering specialist conclusions

After a period of slowdown in the economy and a noticeable decrease in jobs in all sectors, the market confidence index has gradually increased. Specialists estimated that the demand in 2018 for engineers was 30-35% higher than in 2017 so it clearly indicates a general shortage in the appropriately skilled engineers to satisfy the local demand, thus driving up the salary levels.

In Brazil, there are over 926 thousand engineers in Brazil. Similar to IT professionals, most engineering jobs are concentrated in the Brazilian Southeast region. Average salary cost including all employment taxes varies quite a lot, ranging around 1,600 to 2,400EUR per month.

³⁵ Salário. (Abril de 2019). *Engenheiros – Cargos e salários das engenharias no Brasil*. Fonte: Salário: <https://www.salario.com.br/estatisticas/engenheiros-cargos-e-salarios-da-engenharia/>.

4. *Job market platforms*

As job market platforms for IT market and engineering market are similar, we present here all possible sources in combined.

According to a recent survey made by IBOPE Conecta³⁶ 77% of Brazilians have tried, at least once, to find a job on the internet. The search during navigation is more common (68%) among the youngest population, in the range of 16 and 34 years.

As in other countries, also career fairs, LinkedIn/social media, friends' recommendations, direct recruiting and other well-known methods play role in job/workforce search process.

Below are listed most common websites/apps used for professionals and recruiters in job/workforce search process:

- LinkedIn – most candidates use LinkedIn and networking to find a suitable and interesting job.
- Apinfo – used by IT professionals and recruiters, good source also for market overview.
- Vulpi - this app helps to find perfect match between the candidate and the company, aiming at the affinities of profiles of each one and thus finding the perfect combination between employer and candidate.
- Resume assistant - this site makes a connection between the candidate and what companies are looking for. To reach the ideal candidate they carry out online selection tests.
- Sine - tool used and managed by the Ministry of Labor, intermediates the workforce and companies.
- Catho - an online platform where the candidate searches for vacancies according to his/her profile. This platform has promotional values for candidates who want to promote themselves (paid version). There is also the possibility of free trial version to be used for seven days.
- Infojobs - this is another platform similar to Catho, where there is the possibility of registering your online CV free of charge. In the free version of the platform, you have the possibility to compete for some vacancies. However, to access the best opportunities of the platform, you have to use paid version with monthly payment plan.
- Maturijobs - pioneer in Brazil. This is a platform that connects companies with more mature professionals – people who generally have difficulties in competing with the younger workforce in the labor market.

³⁶ <https://economia.ig.com.br/carreiras/2018-10-16/brasileiros-procuram-emprego-na-internet.html>

5. *Benefits*

As also mentioned in the IT Market section of the report, companies in Brazil offer various types of benefits to employees. However, it should be understood, that many of them are treated as normality and not as extra benefits. For example, basic costs that are considered as part of hiring are 13th salary, vacation, FGTS (Employee's Severance Guarantee Fund), transportation vouchers, INSS (Social security). These are the basic benefits, but some companies bear other expenses such as medical insurance, food or meal allowance, payment of overtime or additional night expenses.

According to the current Brazilian legislation, every employee is entitled to 30 days' of paid vacation at each 12 months of work (the so-called "earned vacation time"). The employee's vacation is paid and additionally to the remuneration for the vacation period, an allowance equivalent to 1/3 of the vacation pay is also entitled to employee. At the end of the earned vacation time (12 months), employer must grant vacation within the 12-month period following the date the employee earned vacation (called grant period). It is important to understand, that employee has option to reduce the number of days used for vacation and is entitled to cash payment instead.

The FGTS ("Fundo de Garantia do Tempo de Serviço") is a scheme that has existed under Brazilian law since 1966 and aims to create "personal reserve savings" for employees. It generates substantial funds that are used to finance programs related to low-income housing, encourage urbanization projects, and develop infrastructure. It is an employee right and an employer obligation, not regarded as extra benefit.

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