



QUALITY OF LIFE INDEX OF INDUSTRIAL WORKERS – SESI/SC

EXECUTIVE SUMMARY 2012



FIESC = SESI
A FORÇA DA INDÚSTRIA CATARINENSE

PRESENTATION

The FIESC System, by means of SESI/SC, invest in actions of promoting the worker's health and wellbeing for a healthier lifestyle and a safer work environment, in which workers and employers collaborate towards a process of continuous improvement.

The actions, which fulfill the strategic directives of the entity, contribute to a healthier and more competitive industry, where people are the main asset. They are one of the main pillars of business sustainability. It is necessary to build a culture of health and quality of life in companies, as this, besides being what should be done for ethical reasons, generates a return for the company and its professionals. This is why SESI/SC concentrates its efforts on offering efficacious solutions and launches the Quality of Life Index of Industrial Workers in Santa Catarina.

The index, a pioneer in the sector, indicates the main requirements of the industrial worker concerning life quality. Thus, by means of this information, it will be possible to intervene more effectively, besides improve the performance of industrial workers in the work environment, including impacting the daily lives of these people.

This study is conducted by the FIESC System and we believe that the adhesion of industry will generate significant results and lead to the gradual improvement of this index.

Glauco José Côrte
President of the FIESC System

Hermes Tomedi
Superintendent of SESI/SC

1. INTRODUCTION

1.1 Santa Catarina's Industrial Competitiveness and the Worker's Life Quality

We live at a time when a lot is said about health and quality of life, and people seem more aware about the importance of maintaining a healthy lifestyle to feel better and prevent illnesses. In the corporate context, there is accruing evidence of the association between the working conditions and perception of workers' wellbeing and competitiveness and business sustainability itself.

Investing in promoting health and life quality has been a decision which can provide dividends for people, companies and society in general. Nevertheless, to promote life quality, it is necessary to be clear about the concept and metrics to investigate such a construct, so as to identify the specific requirements of a group and observe the impact of the actions proposed in this sense.

The Quality of Life Index (QoL SESI/SC) represents the first step so that SESI-SC can propose to industry a diagnosis and solutions regarding the issues related to life quality, in the following dimensions: **individual** (lifestyle) and **socioenvironmental** (working conditions and environment). Particular emphasis is given to the factors which affect the general health condition and perception of wellbeing of all the workers, at all performance levels and which can be associated with the sustainabil-

ity of the company itself.

The process of change is based upon the awareness and creation of environments which favor the choices for a healthy lifestyle, and that can improve the life quality of people in an organization or in the community as a whole.

1.2 Objectives

- Submit a theoretical model and a simplified instrument to collect information which will be used to establish a **quality of life index for the industrial worker** in Santa Catarina State;
- Evaluate the perception of life quality in industrial workers in Santa Catarina State.

1.3 Conceptual Basis

To understand the conceptual basis in the proposition of the QoL Index – SESI/SC, it is advisable to read chapters 1 and 9 of the book Physical Activity, Health and Quality of Life (Nahas, 2010). In this model, life quality is defined in a holistic view as the perception of wellbeing resulting from a set of individual and socioenvironmental parameters, modifiable or not, which characterize the conditions in which the human being lives (Nahas, 2010, p.16).

Structural components of the Model adapted for the QoL Index SESI/SC:

- a. Personal Factors → **Lifestyle**
 - Physical Activity
 - Eating Habits
 - Stress Control
 - Relationships
 - Preventive Behavior
- b. Socioenvironmental Factors → **Working Conditions and Environment**
 - Physical Environment
 - Social Environment
 - Professional Development and Fulfillment
 - Remuneration and Benefits
 - Social Relevance of Work

There are many ways of looking at the issue quality of life. Nevertheless, for each context, two aspects must be clear: (a) the concept to be adopted; and (b) how to measure, in a simple but reliable manner, the various dimensions which compose this concept. This is what is intended by adopting the concept of quality of life and the model focused upon the worker proposed by Nahas (2010). The QoL Index SESI/SC is expected to represent the model and metric for evaluating the effectiveness of the actions of promoting the Santa Catarina industrial worker's wellbeing.

2. METHODS

The survey “**The Quality of Life Index - SESI/SC**” is a cross-sectional study developed in May and June of 2012. The study sample was representative of the industrial workers in the 12 regions in Santa Catarina State, Brazil.

The sample was determined in two stages. In the first stage, random selection of companies in accordance with the distribution of workers in large (≥ 500), medium-sized (100 to 499) and small (< 100) industries. In the second stage, workers were selected, also in a random manner (systematic sampling), in a number proportional to the company size. The goal for the sample was established as, at least, 30 companies per region (360 in all), and 500 workers per region (6,000 in all). These pre-established figures were later weighted, considering the total number of companies and workers in each one of the 12 regions of SESI/SC.

Aiming at standardizing the procedures and application of the questionnaire, those in charge of the survey in each region of the State took part in a training session executed by means of a videoconference. The guidance consisted of collecting the data in small groups (up to 20 workers) through application of the questionnaire.

Structure of the Questionnaire

- a. Sociodemographic data (age, sex, schooling, marital status, number of children, type of residence) and perception of wellbeing;
- b. Lifestyle Profile (15 items, adapted from Nahas, 2010);
- c. Working Conditions and Environment Profile (15 items, adapted from Nahas, 2010).

Interpretation of the Results

In the two dimensions (main components) of the questionnaire, a Likert scale of four response categories (0 to 3) was used, scoring as per the following tables. In each item (there are 15 items in each main component) scores 0 or 1 indicate a negative perception; 2 or 3, a positive perception.

The analysis can be made in each main component and overall, resulting in scores related to Lifestyle, Working Conditions and Environment, and the QoL Index (sum of the latter two).

Form and number of items in the questionnaire

The items were constructed in a manner so as to allow direct (objective) answers, referring to the perception of the person assessed in an approximate time of 10 to 20 minutes. Each one of the main components (Lifestyle; Working Conditions and Environment) is composed of 15 items, grouped into five factors (a total of 30 items, used in ascertaining the QoL Index by the sum of the scores on each question).

These questions were used in previous studies about the lifestyle, wellbeing and quality of life of working adults. For scoring each item a scale is proposed from 0 to 3, allowing a range from zero to 45 points in each main component and a Quality of Life Index which can vary from zero to 90 points. Classifying categories are defined using these scores.

To facilitate the interpretation of the results, these values were modified to a scale of 10 points, dividing the original score (0 to 90) by 9. Thus, 90 points = 10; 81 points = 9; 72 points = 8, etc. It is suggested that one rounds to two decimal places after the point (centesimal). Therefore, the analysis of the results of this report uses the simplified scale of 10 points.

Table 1: Categories for interpretation of the QoL Index SESI/SC

QoL Index SESI/SC*	Scale from 0 to 90	Scale from 0 to 10
Low	Up to 30	Up to 3,33
Low intermediary	31 to 50	3,34 to 5,56
High intermediary	51 to 70	5,57 to 7,78
High	71 to 90	7,79 to 10

*High intermediary + High = “positive” QoL Index

3. RESULTS

3.1 Characteristics of the subjects in the sample

The total of valid questionnaires was close to the goal established in the sampling plan (6,000), including in the analyses the data of 5,859 workers (Table 1). Men represent 59% of the sample.

Table 2: Sociodemographic characteristics of the industrial workers in Santa Catarina in the sample. SESI/SC 2012.

Variable	Total ¹ (n=5.859) % ²
Age (years)	
≤29	46,8
30 a 39	31,0
40 a 49	16,8
≥50	5,4
Age (years)	
Single	33.3
Married	61.9
Widow(er)	0.5
Divorced	4.3
Schooling	
Incomplete elementary school	15.4
Complete elementary school	13.7
High school	50.6
Higher education/postgraduation	20.4
Number of children	
None	44.0
1 to 2	46.1
≥3	9.9
Place of residence	
Own residence	73.0
Rented residence	19.5
Residence granted	7.5

¹ 16 workers did not indicate their sex.

² Percentages not weighted.

3.2 Quality of life Index

The average QoL Index of the sample was 6.32 (SD=1.04), with extreme values (range) equal to 1.89 and 10. The analysis of the continuous values showed statistically significant differences in all the variables, noting the highest values of average QoL among women, workers of 50 years old or more, in the small companies and those with actions of promoting health. Concerning schooling, higher values of QoL Index were noted at the extremes (low and high schooling).

Table 3: Quality of life index among industrial workers in Santa Catarina in 2012.

Variable	Average ¹	SD ²
Gender		
Male	6.27	1.06
Female	6.40	1.01
Age (years)		
≤29	6.27	1.08
30 to 39	6.30	1.00
40 to 49	6.42	1.08
≥50	6.72	0.96
Schooling		
Incomplete elementary school	6.44	1.02
Complete elementary school	6.23	0.98
High school	6.29	1.07
Higher education/postgraduation	6.35	1.01
Company Size		
Small	6.40	1.05
Medium	6.32	1.03
Large	6.30	1.04
Actions Promoting Health		
Yes	6.33	1.05
No	6.29	1.03
Total	6.32	1.04

¹ Weighted values

² SD=Standard Deviation

Analysis of QoL Index by Categories

The analysis of QoL Index by categories (Table 4) indicates that there are significant differences in the proportions of subjects in the different subgroups of the population. It can be seen that the proportion of women with a positive Index (78.3%) is higher than the proportion of men with this characteristic (74.3%); that the positive Index is more prevalent for the group 40 years old or more (87.4%), as well as for the small companies compared with the other (77.1%). There is also a difference between the proportion of workers with a positive Index when comparing the companies with actions/programs of promoting health/quality of life (76.1%) with those without such programs (73.7%). These differences are statistically significant for $p \leq 0.05$.

Table 4

Average QoL Index 2012= 6.322

QoL Index SESI/SC 2012 Categorized	Low 0 – 3,33	Low Intermediary 3,34 – 5,56	High Intermediary 5,57 – 7,78	High 7,79 – 10
General	0.4%	23.7%	68.2%	7.7%
Men	0.5%	25.2%	66.6%	7.7%
Women	0.2%	21.5%	70.6%	7.7%
	“negative” QoL Index		“positive” QoL Index	

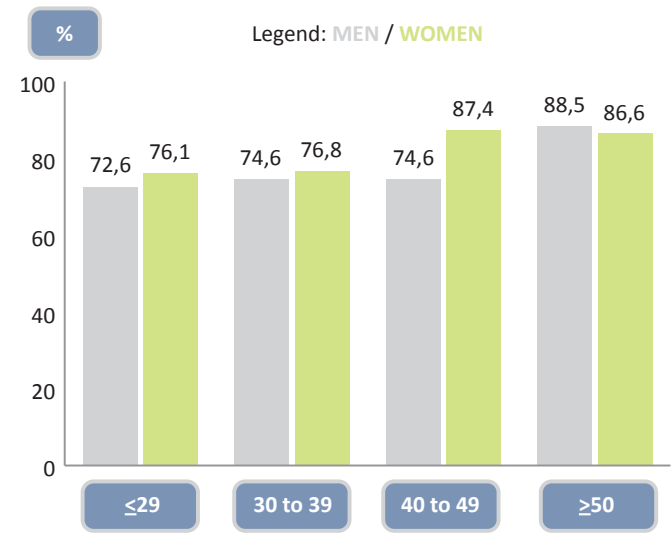


Figure 1: Percentage of workers with a positive perception of life quality as per sex and age. SESI - Santa Catarina, 2012.

3.3 Analysis of Lifestyle indicators

Figure 2 allows one to analyze the five components of the Lifestyle Profile, indicating that women have a better performance in the aspects **preventive behavior** and **eating habits**, whereas men stand out in physical activity and stress control. Generally speaking, one notes a low percentage of healthy behavior in the aspects **physical activity**, **eating habits** and **controlling stress**, with a positive emphasis on the prevalence of **preventive behavior** and **relationships**.

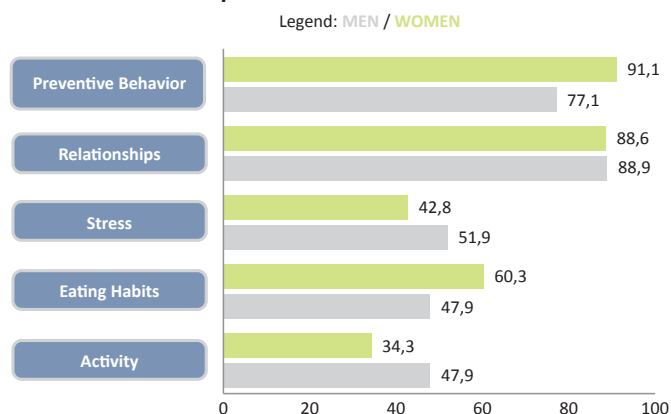


Figure 2: Percentage of workers with a positive perception of the different components of the lifestyle profile. SESI - Santa Catarina, 2012.

3.4 Analysis of Working Conditions and Environment indicators

In the case of the second dimension of the QoL Index (working conditions and environment), higher scores were noted (average value of 6.90; 85.5% of workers with a positive perception), compared with the lifestyle. Only two components contain recommendations: physical environment (in particular in the item noise and temperature conditions); and the component remunerations and benefits (in particular the items attention to health offered by the company and opportunities of leisure and confraternization among workers and family members).

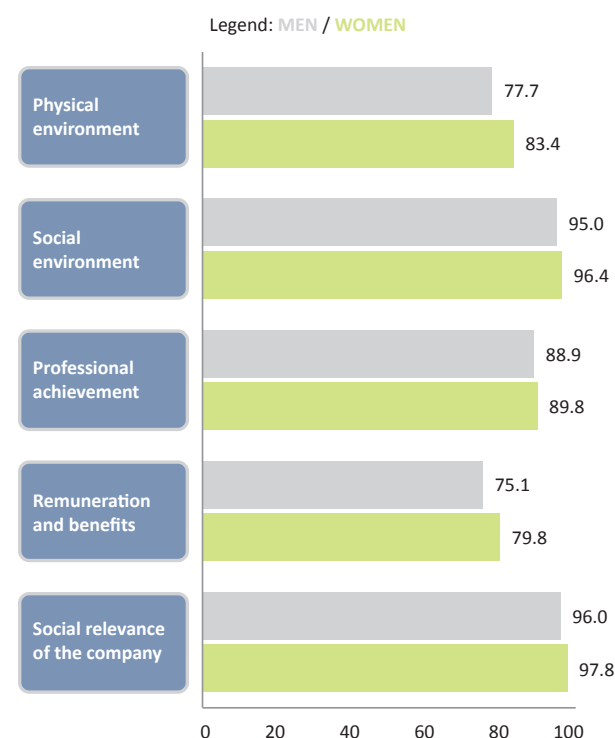


Figure 3: Percentage of workers with a positive perception of the working conditions and environment profile as per sex and age. SESI - Santa Catarina, 2012.

4. CONCLUSIONS

The evaluation of the perception of industrial worker's life quality in Santa Catarina is an innovating and well based process, as it starts with its own model, focusing on environmental features and behavior related to the specific actions developed by SESI. The QoL Index SESI/SC will be a referential instrument for evaluating the effectiveness of the programs and services which aim to promote the worker's wellbeing and quality of life – considered to be a relevant resource for business competitiveness.

About the sample

Of the 5,859 subjects in the sample, 58.8% were men; 46.8% were under 30 years old; 61.9% were married and only 9.9% stated they had three or more children. Schooling was high (50.6% had high school and 20.4% higher education/post-graduation). Moreover, 73% stated that they owned the places where they lived.

QoL Index SESI/SC 2012

The average QoL Index of the sample was 6.32 (SD=1.04), with extreme values (range) varying from 1.89 to 10. The analysis of the continuous values showed statistically significant differences ($p \leq 0.05$), noting a better index among women and a tendency for the Index to increase with age. Small companies and those which offer actions of promoting health also have higher average values of the QoL Index SESI/SC. When categorized, the analysis of the proportion of workers with a positive perception of quality of life (high + inter-mediary high categories) indicated that 75.9% of them have this characteristic. Analyzing by age and sex, a tendency for the percentage to increase with age, as well as a difference in favor of women, can be seen.

The proportion of workers with a positive QoL Index was higher in the companies which offer actions/programs of promoting health compared with those which do not.

It was possible to note that the Lifestyle (Dimension 1) had lower positive percentages than Dimension 2 (Working Conditions and Environment). In general terms, the younger workers, those of the male gender, and those coming from companies without health promotion actions/programs deserve one's attention.

Besides allowing cross-sectional comparative analyses, the QoL Index SESI/SC will be useful for establishing recommendations and the periodic follow-up of the workers' perception of life quality, serving as an evaluative parameter of the effectiveness of many of SESI's actions and services in Santa Catarina.

BIBLIOGRAPHY

ALDANA, S.G., MERRIL, R.M., PRICE, K. et al. Financial impact of a comprehensive multisite workplace health promotion program. **Preventive Medicine**, 40(2), 131-137, 2005.

BOTH, J., BORGATTO, A.F., NASCIMENTO, J.V., SONO, C.N., LEMOS, C.A.F., NAHAS, M.V. Validação da escala "Perfil do Estilo de Vida Individual". **Revista Brasileira de Atividade Física e Saúde**, 2008, 13(1), 4-13.

CRONBACH, L.J. Coefficient Alpha and the internal Structure of Tests. **Psychometrika**, v. 16, n. 3, p. 297-315, 1951.

DRUCKER, P. **O Homem - o melhor de Peter Drucker**. São Paulo: Livraria Nobel, 2001.

FREITAS, A. L. P.; RODRIGUES, S. G. A avaliação da confiabilidade de questionários: uma análise utilizando o coeficiente alfa de Cronbach. In: **SIMPEP**, 12, ov. 2005, Bauru, São Paulo.

SILVA, S.G. Percepção de bem-estar e fatores associados em trabalhadores do setor industrial brasileiro. Dissertação de Mestrado, PPGEF/UFSC, 2011.

LANDIS, J.R.; KOCH, G.G. The measurement of observer agreement for categorical data. **Biometrics**, v.33, p. 159-174, 1977.
NAHAS, M.V. Atividade física, saúde e qualidade de vida. Londrina: Midiograf, 2010 (quinta edição).

NAHAS, M.V., BARROS, M.V.G., FRANCALACCI, V.L. O Pentágulo do Bem-estar: base conceitual para avaliação do estilo de vida de indivíduos e grupos. **Revista Brasileira de Atividade Física e Saúde**, 2000, 5(2), 48-59.

NAHAS, M.V., RABACOW, F.M., PEREIRA, S.V., BORGATTO, A. Reprodutibilidade de uma escala para avaliar a percepção dos trabalhadores quanto ao ambiente e às condições de trabalho. **Revista Brasileira de Saúde Ocupacional**, v.34, p.179-183, 2009.

OGATA, A. (Org.). **Profissionais saudáveis, empresas produtivas**. São Paulo: Campus Elsevier, 2011.

WORLD HEALTH ORGANIZATION. **Preventing chronic diseases: a vital investment. WHO Global Report 2005**. Disponível em: www.who.org.

TECHNICAL RESPONSIBILITY

Professor Markus Vinicius Nahas was born in Florianópolis (SC). With a PhD degree in Physical Education from the University of Southern California (1985), he concluded two post-doctoral training periods (in 1991 at Arizona State University, and in 2000 at the University of South Carolina). For 35 years he was a full-time professor at the Federal University of Santa Catarina (1977-2012), where he founded and coordinated the Research Group on Physical Activity and Health – NuPAF. Currently, Professor Nahas is a consultant in the area of healthy lifestyles promotion.



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