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Determinants Facts of Happiness in a Brazilian Food Industry.

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Abstract This article sought to study and identify the determining factors that influence happiness at work in a Brazilian organization in the food sector. We find in the current literature a research gap, due to the fact that recent studies analyze factors individually, presenting divergent results. To address this gap, we conducted a literature review, where we identified the main factors found and analyzed in a sample of workers in a meat industry, through a survey with an explanatory approach, using the Ordinal Multinomial Logistic Regression Model as a quantitative method.When analyzing together, we identified as factors the Managerial Style, Achievement/Expressiveness, Trauma Experience, Salary, Company Time and Personal Goals, all of which can affect the level of happiness at work, impacting on the performance of employees and organization results. In this way, it becomes relevant to study the dynamics involved in the occurrence of these factors in the studied scenario and in other segments in order to provide data that guide organizational management policies.

Keywords: Happiness; Factor; Work; Ordinal Multinomial Regression; Food Industry.

1 Introduction

Since the dawn of humanity men has sought to conceptualize, understand and fulfill their lives in a state called "Happiness". Several theories tried to conceptualize this state of fulfilment, considered initially as a blessing and later as a state with no needs and finally with the introduction to the Enlightment, placed as the right to the individuality and as an objective to the society (Oliveira, 2019).

Philosophers and researchers defined happiness in different ways (Diener et al, 2002), with the two main current lines divided in between the hedonic approach, which defines happiness as the abundance of pleasant feelings and pleasure, and the eudaemonic that is aimed at virtues, self acceptance and purposes (Ryan & Deci, 2001).

These two approaches have guided the studies in the work scope despite of being verified in the systematic review carried out by Fisher (2010) that the topic was underestimated and addressed only as "job satisfaction", Pantaleão & Veiga (2019) observed a considerable increase of studies in the last decade, seeking to conceptualize this satisfaction as Well Being or Happiness at work, and although it does not present unanimous definitions, it mostly brings references to experiences of affectionate, cognitive and organizational aspects.

Regardless of the approach, several authors such as Li & Ma (2018), Peiró et al (2019), Guerci et al (2019), Ramirez-Garcia et al (2019) and Salas-Vallina et al (2020), proved the importance of workers' happiness for the success and differentiation of any organization due to its relationship with the performance level (Peiró et al, 2019; Guerci et al, 2020), Organizational Climate indicators and other factors (Li & Ma, 2018).

In any organization of any sector the improvement in Happiness rates and the understanding of its determining factors would mean an increase in productivity, something that would contribute to the economy growth of any country (Basinska & Rozkwitalska, 2020).

Specifically in the food and beverage industry, which according to data from ABIA (2020), is currently the largest in Brazil, representing 9.6% of GDP (Gross Domestic Product) in addition to the second place in the international exportation scenario

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distributing to around 180 countries, this contribution would benefit a good portion of the local population also benefiting the countries to which their products are exported.

The world population has grown exponentially and it has been a challenge to the food industry, especially to the production of animal protein, which is part of the diet of almost all cultures, and it is hard to follow this growth without identifying and using strategies to increase their productivity (Zidaric et al, 2020).

In this context it is essential for the studied organization, which is inserted is this segment, to study and understand the determinants of its employees' happiness in order to improve its employees's levels of happiness and consequently their productivity through internal policies.

To contextualize the existing factors in a better way, we will define in the next Section the main theories related to Happiness at Work, which will be used in the elaboration of a questionnaire, which after being applied, will be analyzed using the methodologicl tools presented in Secton 3. Then we will present the results found in Section 4 and later discuss them in Section 5. In Section 6 we will conclude with the main advances and limitations of the study.

2 Happiness at Work

One of the first researchers to define and study well-being at work, Warr (1987), presents his definition as a positive state of five dimensions (Affections/Aspirations/Autonomy/Competence/Integrated Functioning) in which basically a person experiences positive emotions and moods, having an interest in the environment and activites developed, in which they have a degree of internal resistance and the ability to deal with day-to-day problems in a continuous and integrated way and this theory is being predominantly represented by aspects of hedonic happiness.

Riff (1989) challenges this work through his research in which he presents a new thoery based on the theory of eudaimonic happiness, bringing factors such as Self Acceptance, Positive Relationships, Autonomy, Environment Control, Purpose and Personal Growth.

Beyond these two works other definitions emerged from these two main approaches such as researches of Ryan and Deci (2000) that add factors like Vitality, Mental Health and Expressiveness, Vans Horns et al (2004) presenting the motivational, behavioral, cognitive and psychosomatic factors, in addition to other studies presented in the bibliographic review carried out by Fisher (2010), concluding that in the last two decades Happiness at Work was generally defined as job satisfaction but in the last decade it has evolved to a more complete approach, meaning more than satisfaction and organizational commitment.

In one of the main studies, Pascoal & Tamayo (2008) suggest a definition in which the well-being is defined as a state of prevalence of positive emotions in which the individual is able to express all his/her abilities, reaching his/her life goals.

In the studies carried out from 2007 to 2014, with a focus on studies of happiness at work, despite not having an unanimous definition, there is a tendency to bring its definition closer to the constructs of happiness, based on positive psychology, presenting as main variables: work aspects, organizational characteristics, positive affection, subjective cognitive variables such as personality traits and purposes, in addition to other context variables (Pantaleão & Veiga, 2019).

Recent researches in the last five years have addressed the subject in a quantitative way, seeking to confirm its adherence in several areas of performance presenting as determinants factors related to Positive and Negative affections (Cheschin, 2020/ Jaworek et al, 2020/Rastogi, 2020/ Weziak-Bialowolska, 2020), Leadership Styles (Salas-Vallina et al, 2020/ Harolds, 2020/Artz et al, 2020/Der Kinderen, 2020/Frone & Blais, 2020/Berrezueta et al, 2020), Expressiveness (Raab, 2020/ Kun, 2020/Brunoro et al, 2020/Rastogi, 2020) e Demographic and Social Characteristics (Hvalic-Touzery, 2020/Zaghini et al, 2020), beyond other characteristics related to working conditions (Al Suwaid, 2020/ Hvalic-Touzery, 2020/ Zaghini, 2020)

The Leadership Style, according to Salas-Vallina et al (2020), Harolds (2020), Artz et al (2020), Der Kinderen (2020), Frone & Blais (2020), Berrezueta et al (2020), is one of the most studied topics in literature, being defined in many ways and presenting several characteristics but it is observed in literature that ethical and fair leadership is related to high levels of happiness at work, presented in 3 main styles, defined by Chiavenato (2000) as Autocratic, in which the leader seeks absolute control of the group, Democratic, in which leadership is shared with the group and Situational, in which the leader flexes his/her style according to the level of maturity of the team.

The affections were defined by many authors as Cheschin, 2020; Jaworek et al, 2020; Rastogi, 2020; Weziak-Bialowolska, 2020, Paschoal & Tamayo (2008) and include several feelings that can be lived in the organizational context in a positive way (Joy, Enthusiasm, Excitement, Tranquility, Pride) or negative way (Stress, Sadness, Boredom, Tension, Impatience, Frustrations and Traumas).

The demographic social characteristics involve points as sex, age, remuneration, function performed, according to Hvalic-Touzery (2020) and Zaghini et al (2020), has been pointed in some studies as determining factors for happiness and well-being at work.

The expressiveness presented by Raab (2020), Kun (2020), Brunoro et al (2020), Rastogi (2020), Paschoal & Tamayo (2008), involves cognitives points, feelngs of accomplishment, recognition, organizational commitment, and is directly linked to the central points of happiness in its two approaches, Hedonic and Eudaimonic.

Both factors presented above demonstrate in several researches significant values, being confirmed through statistical tools such as Confirmatory Factor Analysis, Hypothesis Testing, but a study was not found in the literature that jointly analyzes all the determining factors already presented, with the aim to describe and explain the relationship between them and the main object, which is Happiness at work.

Filling this gap becomes the objective of this work, in which we will detail in the next section the method that will be used to reach it.

3.   *Methodology*

The purpose of this work is to contribute with existing studies related to happiness, mainly to understand and explain its determinants factors, relations and dynamics presented in the organizational context in a multinational food company.

To reach this goal, we will use as methodology the application of a survey with an explanatory approach, following Forza (2002), through quantitative methods, in which we will take as object of study one of the branches of a multinational food company, situated in the countryside of São Paulo state. The chosen branch has approximately 3,500 collaborators, divided in different operations and work shifts, establishing the object of this study the operation of the 2nd shift, which corresponds approximately to 500 employees.

This company was chosen due to the fact that the food industry represents 9.6% of the national GDP (Gross Domestic Product), 58% of the Agrobusiness GDP, 3% of exportations and also because it has grown 45% in the last five years according to ABIA's data (2020), within these numbers, the chosen company is the largest in the segment and is also the largest exporter of animal protein, becoming responsible for a significant economic and social impact on the global scenario.

A sample of 271 employees was selected considering the division of the company into shifts and sectors in which we selected the operation of the 2nd shift, including in natura, preserves, pouch, CCC (carne cozida congelada – frozen cooked meat), superfrozen and shipment which ables grouping by similar, but heterogenous, process and characteristics making the total sample proportionally composed of employees from all sectors of the company.

   In this sample, we applied the questionnaire attached to this study, which was based on the works of De Andrade Melo (2004), Paschoal and Tamayo (2008), Fisher (2010) and Pantaleão & Veiga (2019), that bring together the concepts of Hedonic and Eudaimonic happiness, concepts of the Management Style Assessment Scale, and the main factors presented in the last studies, with the happiness level measured by the Likert scale, defined by Dalmoro (2013) as a psychometric scale usually used in similar experiments and elaborated by Rensis Likert, in which the interviewees detail their level of Happiness related to some statement, in an ordinal and growing scale from 1 to 5, distributed in the following categories: unhappy (1), a little unhappy (2), indifferent (3), happy (4), very happy (5).

In order to access what factors influence the levels of happiness, for each interviewee, the levels of positive and negative affections were consulted such as expressiveness, acknowledgement, personal goals, if they enjoyed their functions, how satisfacted they were and even the manager's presence, all of these levels factos were measured in the same scale and beyond that the personal characteristics of each interviewee were taken into account as well as their role in the company, their salaries, how long they have been working, their marital status, sex and age.

Another factor considered was the occurrence of traumas and the managerial style presented by their immediate manager, measured in a categorical way.

To access which of these factors influence the levels of Happiness, we used the Ordinal Multinomial Regression model presented by Agresti (2000), which will be defined in the next Section.

3.1 Ordinal Multinomial Regression

According to Agresti (2000) we introduced the ordinal multinomial regression to shape the employees' well-being. Supposing a random sample of size n is drawn from a population divided in k groups (levels of happiness), in which πj is the individual's probability of belonging to the j group (j=1,...,k) and that the random variable Yj, that counts the number of individuals of j group so that the random vector Y=(Y1,...,Yk) has a function of joint probability given by

$$f(y_1, \cdots, y_k) = \frac{n!}{y_1! \cdots, y_k!} \pi_1^{y_1} \cdots \pi_k^{y_k}, \qquad \pi_j \in (0,1), \qquad (3.1)$$

With $\sum_{j=1}^{k} x_j = n$ and $\sum_{j=1}^{k} \pi_j = 1$.. In our study, the response variable (Y) is multicategorical or polytomous of 5 ordinal categories of increasing order to the level of happiness, with level 5 being the most happiness. The ordinal multinomial logistic regression model (MRMLO) used to assess which factors (covariates) influence the levels of happiness, we relate the covariables to the probabilities accumulated in the levels of happiness. That is,

$$P[y \le j|x] = \pi_1(x) + \pi_2(x) + \cdots + \pi_j(x) = \sum_{i=1}^{j} \pi_i(x), \quad j = 1, \cdots, k-1,$$

The accumulated probability depends on x = (x1, x2, ..., xp) t, the vector of covariates or predictors of p components. In this way, MRMLO results when considering that

$$logit(P[y \le j|x]) = \log\left(\frac{P[y \le j|x]}{P[y > j|x]}\right) = \alpha_j + x^t\beta, \quad j = 1, \cdots, k-1$$

Hence, the accumulated probabilities result in

$$P[y \le j|x] = \frac{exp(\alpha_j + x^t\beta)}{1 + exp(\alpha_j + x^t\beta)} \quad j = 1, \cdots, k-1. \qquad (3.2)$$

From (3.2) one can calculate the probabilities of each group, as in the following:

$$\pi_j(x) = P[y \le j|x] - P[y \le j-1|x], j = 2, \cdots k-1, \text{ and } \pi_1(x) = P[Y < 1|x] \text{ and } \pi_k(x) = 1 - \sum_{i=1}^{k} \pi_i(x).$$

The MRMLO as in (3.1) is called the proportional odds ratio model ("Proportional Odds"), in this model the interpretations of the regression coefficients are simple and it is in terms of the logarithm of the odds ratio of the accumulated probabilities for different covariates levels.

The inference procedure regarding the respect of MRLMO parameters is based on the likelihood theory (Agresti, 2000), which is implemented on the Software R Development Core Team (2009).

Based on this model, we will present in Section 4, the results found after the implementation on the mentioned system.

4. Results

As reported in Section 3, the data collected come from an empirical survey, in which a characteristic of interest or response variable is the level of happiness with five ordinal levels that objectify to assess which factors or covariables influence the well-being of employees and for this, the following covariates were considered: x1: sector (1:central (16.2%), 2: conserve (16.2%,) 3: frozen 17.0%), 4: pouch (17.3%), 5: superfrozen (16.2%), x2: function (1:management (7%), 2; operation (93%)) ; x3: salary in unity of minimum wage (average = 1.57, standard deviaton = 1.0), x4: how many years they have been working in the company (average = 5.1, standard deviaton = 3.6), x5: marital status (single = 46%, married = 54%), x6: sex (male = 69%, female = 31%), x7: age (mean = 33,4 , sd=7.3), x8: positive affections (1 = 17.7%, 2 = 14.8%, 3 = 1.5%, 4 = 34.7%, 5 = 31.4%), x9: negative affections (1:23.6%, 2 =11.8%, 3 = 7.4%, 4 = 33.2%, 5 = 24.0%), x10: expressiveness (1 = 8.9%, 2 =13.3%, 3 = 3.0% 4 = 48.3%, 5 = 26.6%), x11: acknowledgement (1= 28.0%, 2 = 28.8%, 3 = 5.9%, 4 = 17.7%, 5 = 19.6 %), x12: goals (1 = 10.3%, 2 = 10.3%, 3 = 14.0%, 4 = 31.0%, 5 = 34.3%), x13: enjoy what they do (1 = 5.2%, 2 = 17.7%, 3 = 9.6%, 4 = 44.6% 5 = 22.9%), x14: management satisfaction (1 = 10.3%, 2 = 10.3%, 3 = 10.3%, 4 = 37.6%, 5 = 31.4 %); x15: manager's presence (1 = 16.2%, 2 = 8.9%, 3 = 5.9%, 4 = 32.5%, 5 = 36.5%), x16: managerial style (1 = autocratic (39.1%), 2 = democratic (24.4%), 3 = situational (36.5%) and x17: Traumas (0 = no (68.6%), 1 = yes (31.4%)
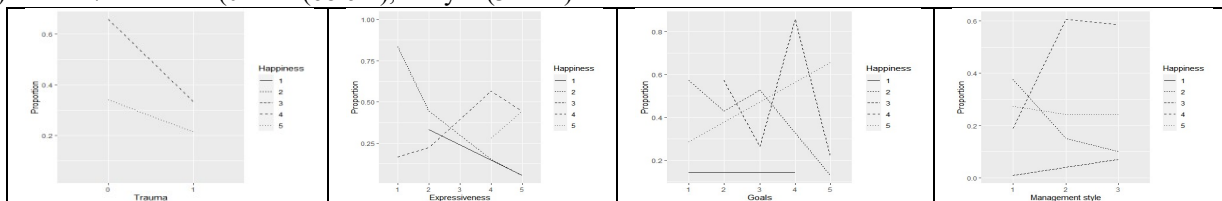

Figure 4.1 Relationship between levels of happiness and factors: trauma, expressiveness, goals and management style

Initially we present a descriptive analysis of the data collected. The Figure 4.1 shows the ratio of the proportion of happiness levels with a few covariates: trauma, expressiveness, goals and management style. Employees with no traumas are specifically happier than the ones that had a trauma experience. In this way, the expressiveness is presented as a highlight factor in which a considerable quantity of employees has a perception of expressiveness above average (68%) although we observe an extreme, as few have average indifferent values (4%) and the rest is tied to the lowest level of perception, in the same scenario, in different proportions presented in the item that evaluates the perception related to personal goals. Finally, we can also see that the management styles influence the level of happiness.

In order to verify which factors significantly influence the probability of happiness levels, the ordinal multinomial logistic regression model presented in Subsection 3.1 was adjusted taking into account the 17 covariates, in other words, we considered

the vector of covariates $\mathbf{x} = (x_1,...,x_{17})^t$ in (3.2). The Stepwise mtehod (Agresti, 2000) was used for the selection of the most important factors. In Table 4.1 it was presented the maximum likelihood of MRMLO coefficients of the factors that significantly influence cumulative probabilities, in which we can see that salary, the time worked, the expressiveness, the personal goals, the management style and the occurrence of traumas can significantly impact on the cumulative probability of employees' levels of happiness.

The Table 4.1 shows that the maximum likelihood estimates of the regression coefficients are negative, which indicate that the cumulative probability starts with the unhappy in the happiness scale and increases as the salay increases and it is greater for those employees who have experienced trauma as it is shown in the Figure 4.2, similar results are obtained for other factors.

Parameter	Estimate	StandardError	p-Val	Parameter	Estimate	Standard Error	p-Val
α_1	5.220	1.073	0.000	$\beta_{Exressividade\ 2}$	-0.246	0.615	0.689
				$\beta_{Expressividade\ 3}$	-2.129	0.944	0.024
				$\beta_{Expresividade\ 4}$	-5.581	0.759	0.000
				$\beta_{Expressidade\ 5}$	-4.662	0.707	0.000
α_2	8.555	1.119	0.000	$\beta_{Metas\ 2}$	-4.665	0.785	0.000
				$\beta_{Metas\ 3}$	-2.984	0.752	0.000
				$\beta_{Metas\ 4}$	-1.987	0.527	0.000
				$\beta_{Metas\ 5}$	-5.658	0.688	0.000
α_3	8.899	1.131	0.000	$\beta_{Gerencial-Democrático}$	-1.705	0.433	0.000
				$\beta_{Gerencial-Situacional}$	-0.595	0.375	0.112
α_4	12.921	1.327	0.000				

Table 4.1. Estimate of Regression Coeficients in The Regression Logistic Ordinal Multinomial

Also with maximum likelihood estimates, we estimate the probabilities of the levels for employees with significant covariant levels, in Figure 4.3 we present an estimate of the probability of employees' happiness, stratified by the trauma covariates, expressiveness, goals and management style, in which we can see that the employees with no traumas are much happier than those with some trauma and also, those who do activities that able them to totally express their abilities and reach their management goals are happier compared to other employees. Finally, we observed that management style also influences in the probability of happier employees.
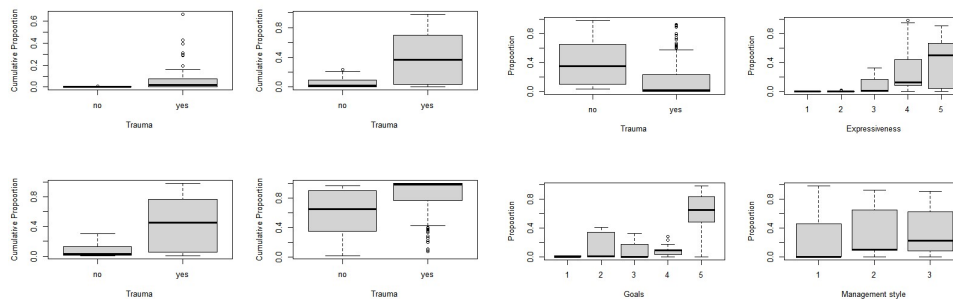
Figure 4.3. Estimated probability of employees to be very happy due to trauma, expressiveness, goals and management style.

5. Discussion

In this way, we observed that the results of the present research can contribute with the works of Fisher (2010) that present that the factors are related to the organization's attributes, mainly to the management style, which was also observed in the works of De Andrade Melo (2004) and Salas-Vallina et al (2020).

In the research done by Paschoal & Tamayo (2008) we know a mixed scale which considers inernal and external factors, considering that Happiness at Work is a relationship between the occurence of Positive and Negative Affections, Expressiveness at Work, what we observed with the result of the applied research in which expressiveness had relevant results due to the proportion of happiness presented, as well as the occurrence of traumas, which fits into the negative affections and the apropriate managerial style, which generates positive affections in the employees.

In the works of Siqueira & Padovam (2008), we found that some points related to the organization's attributes were confirmed in the model results as well as the work of Ramirez-Garcia (2019) that corroborates the Personal Goals in relation to the proportion on Happiness.

Regardless of the approach used, Hedonic or Eudaimonic, or the origin of factors (internal to the individual or belonging to the organization's attributes) when analyzed together in this work, different from the one presented by the study of Ramirez-Garcia

(2019), they are presented with equivalent and complementary results, because together they can contribute to the level of happiness.

It was observed that when we analyze together, we obtain better results therefore making it relevant for organizations to carry out joint management, to obtain better results and contribute positively to the level of happiness of the employees.

The results found contribute to several articles included in the review, published in 2020, (Salas-Vallina et al , 2020/ Harolds, 2020/Artz et AL, 2020/Der Kinderen, 2020/Frone & Blais, 2020/Berrezueta et AL, 2020/Cheschin, 2020/ Jaworek et AL, 2020/Rastogi, 2020/ Weziak-Bialowolska, 2020/Hvalic-Touzery,2020/Zaghini et al, 2020/Raab, 2020/ Kun, 2020/Brunoro et al, 2020/Rastogi, 2020/Al Suwaid, 2020/ Hvalic-Touzery, 2020/ Zaghini, 2020), as it complements it results through the explanatory analysis provided by the methodology used.

6. Conclusion

When we analyze all the referenced researches and their results we can conclude that both models make sense and present consistent results but different from what is presented in other studies, a result does not exclude another previous one, they are complementary and consequently they lead us to validate a model in which all thes factors must be considered and, because it is somewhat subjective, measured in an impartial way, to later validate which are determinant or not for the considered scenario.

However, we can see a common factor to all the results found and directly verified in this research, which is the influence of the leadership, specifically and directly the predominant style of the manager so that the employees demonstrate higher levels of happiness.

Indirectly, we noticed in the determining factors found in this research, "Occurrence of Traumas" and "Expressiveness", which are items that are under responsibility of the leadership because of the Situational and Democratic styles, in their definition, are styles that in their way of approaching employees and situations in the work environment, ensure greater expressiveness and less occurrence of traumas.

With this, the leader personifies the organization, having the responsibility to generate the involvement, affective commitment and motivation in his followers, having autonomy to deal with conflicts, which are related to the negative affections experienced in the work environment, and to give his followers recognition and decent work conditions related to positive affections and expressiveness.

The leaders who have a Democratic and Situational management style, understand their responsibilities vis-à-vis other factors, treat them properly and have greater proportions of happy employees, in contrast to the autocratic style that has a higher proportion of low levels of happiness.

So, a way to increase the happiness of the studied group, would be to correctly identify the predominant style of each manager, and work on its development, so that he/she understands the relationship of his/her way of managing the happiness of his/her team and consequently with the result . In addition to creating mechanisms that ensure that other factors are monitored, such as indicators, and their deviations treated to minimize their impact on the overall happiness of the organization.

The research carried out offers the current literature an important contribution presenting a new methodology to analyze the factors, generating practical implications in guiding how organizations could carry out and direct their policies in order to achieve the objective of raising the level of happiness of its employees.

For future researches, we suggest a detailed study of the dynamics involved in the occurrences of the factors found, and also carrying out the analysis in other scenarios or segments, seeking to understand how organizations have managed these factors, and what actions they have applied to improve the level of Happiness. It would also be relevant to carry out an action research, in order to, together with an organization, test and evaluate organizational management policies, observing in a longitudinal way the results achieved with the actions carried out.

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