COGNITIVE BIAS AND JOB FRUSTRATION IN MEXICAN WORKERS: A NEW CONCEPTION

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Abstract. This research will examine the impact of the complex and unstable context of the ongoing pandemic and the postmodern era on the decision-making processes and job performance of Mexican workers. It is recognized that such a challenging environment may give rise to biases that influence both job performance and decision-making processes. A total of 120 married and single, female and male Mexican workers, aged between 18 and 61 years, were selected for the study using partial least squares and structural equation modelling. The research presents a novel approach to measuring Rosy Retrospection and Ostrich Effect Bias as a reflexive construct, which serves as an initial effect for job frustration in an organization. This is achieved through the use of scales and the measurement of two relevant biases for contemporary workers. It was found that individuals experiencing frustration are susceptible to developing Rosy Retrospection and Ostrich Effect Bias. Indeed, both were found to be statistically significant in relation to decision-making and job performance among Mexican workers. The two biases are more pertinent to job performance than to decision-making. This is relevant because it can affect the performance of Mexican enterprises, which may be unaware of the impact of this kind of bias on future enterprise yields.

Keywords: Job Frustration, Decision-Making, Job Performance, Ostrich Bias, and Rosy Retrospection Bias, Organizational Psychology and Administration

Introduction

Mexico is one of the 15 largest economies in the world in terms of gross domestic product (GDP). The average net adjusted household disposable income per capita is approximately USD 16,269 per year, which is below the Organization for Economic Cooperation and Development (OECD) average of USD 30,490 per year (OECD, 2022).

Mexico's culture is noteworthy for its approach to work-life balance. In Mexico, 27% of employees work long hours, which is the highest proportion in the OECD, where the average is 10%. Full-time workers in Mexico dedicate a smaller proportion of their time to personal care and leisure activities than the OECD average. These activities include eating and sleeping, as well as socializing with friends and family, engaging in hobbies, playing games, using computers and watching television. (OECD, 2022)

As observed, Mexican people exhibit a notable imbalance between their personal lives and work, ranking in the lowest position compared to other OECD countries (OECD, 2024). This is significant as it has the potential to impact individual efficiency and future business returns (Workday, 2021). This is particularly pertinent in the context of the pandemic, where there have been significant challenges related to emotional and psychological well-being, income security, employment, and life satisfaction.

Mexico faces considerable challenges in addressing income and paid work inequality (OECD, 2021). According to the OECD, approximately 59% of individuals aged 15-64 in Mexico are employed, a figure that falls below the OECD employment average of 66%. Also Mexicans earn 46% less and have 7% fewer paid jobs than the OECD average.

Furthermore, the mental health of Mexicans is a significant concern, particularly in the context of pandemics. Notably, 15.4% of the Mexican population is affected by depression, as reported by EMBIARE (2021). Additionally, 19.3% of the population experiences severe anxiety, while 31.3% exhibits minimal anxiety. The combination of these two demographic groups indicates that over 50% of the Mexican population experiences anxiety disorders. Additionally, the EMBIARE (2021) data reveals that approximately 12.4% of the population has never received praise or recognition.

Mexican society tends to place a high value on health; however, the proportion spent on health care in Mexican households is the lowest indicator of current expenditure, thus reflecting an ambiguity worthy of being studied according to the very special nature of Mexican society. (González and Mariné, 2021)

In the contemporary era, organizations are compelled to operate within complex and unstable environments, which present a significant challenge to their ability to function effectively. In order to respond to emerging needs and maintain competitiveness, it is imperative for organizations to adapt to the intricate nature of the contemporary business landscape. Nevertheless, entrepreneurs are persistently engaged in efforts to facilitate organizational adaptation and enhance performance.

The challenging situation influences the behavior and emotions of employees, who are also required to adapt and learn in terms of attitudes, knowledge, skills and different ways of working, without having a clear direction or course for the company. The circumstances have resulted in a lack of prospective vision among employees regarding their potential achievements within the organization. This has resulted in a sense of frustration surrounding their professional aspirations and job expectations. It can be hypothesized that if employees are continually prevented from achieving their professional objectives, their emotional state may be a contributing factor to their feelings of frustration.

Frustration is a state of mind that arises when a need, desire, or purpose cannot be satisfied, resulting in feelings of annoyance, anger, and disappointment. The level of frustration is directly proportional to the complexity of the barrier preventing the attainment of the goal. Consequently, there has been a notable increase in employee frustration in recent years.

The objective of this research is to gain insight into the relationship between job frustration and biases employed in behavioral economics. These biases have the potential to exert an influence on decision-making processes and job performance. In the context of cognitive biases, specific examples include the Rosy Retrospection Bias and the Ostrich Effect Bias, which are particularly relevant in the context of job frustration.

Cognitive bias can impact on how the world is perceived and how events unfold, even when the individual is not fully aware of its influence. Furthermore, cognitive bias can unquestionably

impact the way employees perceive their work environment, potentially influencing their decision-making processes and job performance.

In this research the first research question states: What is the relationship between job frustration and the cognitive biases of the Ostrich Effect and Rosy Retrospection Bias? the second one states: How do the cognitive biases of the Ostrich Effect and Rosy Retrospection affect organizational decision-making and employee performance?

Given this research question, the research hypotheses are:

H1: Job frustration is related to the Ostrich Effect and Rosy Retrospection Bias, decision-making, and job performance.

H2: Job frustration is statistically significant with Rosy Retrospection and Ostrich Effect Bias.

H3: Rosy Retrospection Bias and Ostrich Effect Bias are statistically significant on decision-making and job performance.

The present study is innovative because it fills a significant gap in the research landscape. There are not many studies on organizational psychology and behavioral economics, a very specific field where this type of bias and behavioral errors can have an impact on the organization, affecting its future. Understanding this impact will undoubtedly empower business managers to anticipate or make better decisions that affect the motivation of Mexican workers in a work environment that has been greatly affected and obviously affects the motivation of workers.

It is therefore crucial to be able to examine both work frustration and the various biases present in a work environment, where these biases impact both individual decision-making and the overall performance of the organization. To this end, a method based on structural equations is required to approximate such behavior, allowing for the behavioral patterns of workers to be understood and their perceptions to be gauged using a suitable scale. The findings of this study will enable organizations to gain deeper insights into the behaviors of their employees in relation to job frustration and associated cognitive biases. This will facilitate the recognition of the impact of these intangible factors on organizational productivity.

In the initial phase of this study, we examine the extant literature on this topic, with a particular focus on the Ostrich Effect and Rosy Retrospection Bias. We investigate how these biases emerge from the field of behavioral economics. The subsequent phase of the study entails an analysis of the research design, the questions posed to the participants, the composition of the sample, and the descriptive statistics pertaining to the workers under study. Thereafter, we turn our attention to the construction of the model and its statistical validity, before proceeding to the presentation of the results, a discussion of these findings, and a series of conclusions and recommendations.

Literature review
Job Frustration

Frustration arises when an initiated goal-response or predicted behavioral sequence is disrupted or prevented. In the event that a substitute response is not identified, the individual may resort to some form of aggression, whether overt or covert, external or internal (Dollard et al., 1939). The form of this aggressive response is significantly shaped by the individual's perception of the probability of being punished (Fox and Spector, 1999).

The emotional responses to frustrating events can be defined as perceived frustration (Storms and Spector, 1987). Furthermore, the behavioral responses that occur in the context of organizational frustration have been found to have a significant impact on a number of key

performance indicators, including job performance, absenteeism, turnover, corporate aggression and interpersonal aggression. To the extent that these behaviors impede the organization's ability to perform its tasks, foster a positive organizational climate, or enhance its overall effectiveness, they may have a tangible negative impact on the organization (Fox and Spector, 1999). The constant challenges engender frustration, and the occasional obstacle at work is often submerged beneath an array of difficulties. Individuals lack the requisite resources to adequately fulfil their roles, and the objectives continually shift. The relentless, do-more-with-less nature of our shortsighted, quarterly results-driven business climate is often identified as a source of frustration, with the responsibility for driving lasting change or shaping corporate culture frequently attributed to external factors. The underlying cause is unclear, but a significant proportion of the working population experiences chronic frustration at work (McKee, 2017).

Job Frustration

Behavioral economics is a field of study that draws upon the methodologies of both economics and psychology with the objective of developing a more nuanced understanding of human behavior. In 1979, Nobel laureates Kahneman and Tversky developed the Prospect Theory, this theory posits that human decision-making is influenced by the evaluation of potential outcomes and the anticipation of gains or losses. It represents a different approach to economics because, prior to Kahneman's work, the previous Von Neumann–Morgenstern utility theory was unable to explain why people made poor decisions. The theory of foresight is also pertinent in that it addresses the concept of limited rationality, whereby the economic actor is not always rational and displays a significant emotional component that is challenging to quantify.

Kahneman (2011) elucidates the process of affective or intuitive heuristics, which enables human beings to make decisions based on their emotions. Kahneman undertakes an in-depth examination of the subject and identifies two distinct mental systems that underpin the human cognitive process. System One and System Two (fast and slow thinking, respectively). The term 'cognitive bias' is used to describe systematic distortions in decision-making that are common to all humans. These distortions emerge from the intrinsic heuristics employed to streamline the copious data with which our nervous systems are continuously confronted. Additionally, some researchers posit that emotional prejudice serves as a mechanism underlying these biases.

Cognitive biases are automatic and unconscious, in that they are immediately present to conscious awareness. Individuals direct their attention towards the stimuli they perceive and their thoughts. Such individuals tend to devote less attention to the processes of perception and emotion. Such awareness may be achieved when individuals engage in introspective reflection. Cognitive biases serve to reduce uncertainty, despite the fact that uncertainty represents a fundamental aspect of decision-making processes (Spigener et al., 2016).

Rosy Retrospection Bias

Rosy Retrospection Bias is the tendency to retrospectively evaluate past experiences as more favorable than recent ones, which is also expressed through nostalgia. The term was first used by Mitchell and Thompson in 1994, who divided it into two distinct concepts: rosy retrospection and rosy prospection. Rosy Retrospection Biases judgment when contemplating the abandonment of a conventional process in favor of an alternative. Furthermore, it may even prevent us from recognizing that the standard procedure is unable to produce the desired outcomes. This phenomenon is a key factor in the resistance to change (Spigener et al., 2016).

Ostrich Effect Bias

The Ostrich Effect refers to a cognitive bias whereby individuals tend to avoid or disregard information that is perceived as undesirable. Karlsson and Colleagues (2005) posit that agents tend to prefer receiving positive information regarding their financial holdings over negative information. This preference is manifested in the selective avoidance of negative information. Galai and Sade (2006) posit that individuals avoid risky situations by ignoring or denying their existence.

Moreover, as individuals disregard unfavorable information, they devote an inordinate amount of attention to favorable reports, analyses and trends, thereby exacerbating the issue by ascribing undue significance to the positive and misjudging the individual position (Krawczyk and Baxter, 2019). The Ostrich Effect is a cognitive bias that describes the tendency of individuals to avoid negative information. This includes feedback that could assist in monitoring progress towards the desired outcome. In lieu of confronting the situation, individuals tend to avoid it by burying their heads in the sand, akin to ostriches avoiding reality.

This avoidance can frequently exacerbate the situation, leading to costs that might have been avoided had the situation been faced directly (Decision Lab, 2022). The Ostrich Effect diverts our attention away from crucial information that is negative and unsettling. It is unfortunate that the brain's attention systems are overly effective at filtering out negative information (Krawczyk and Baxter, 2019).

Research design

In order to ascertain the most appropriate methodology in this research, a scale was devised for the measurement of the variables of job frustration, job performance, decision-making and cognitive biases. The items comprising the scale were rated on a Likert scale (1–5), with respondents indicating their level of agreement or disagreement with each statement. The measurement scale was administered randomly to individuals employed by an organization. The sample comprises 120 Mexican workers, and the questions are presented in Tables 1 to 5, the interview was conducted in June and August of the year 2022.

Table 1. Scale Job Frustration Questions

Job Frustration	
FA	Have some obstacles prevented you from doing your job well?
FB	Have some obstacles prevented you from fulfilling your work objectives to the extent that you expect?
FC	Have there been situations in your work that are foreign to you and don't allow you to meet the objectives as expected?
FD	Do you feel you don't have the necessary resources to carry out your work as expected?
FE	Are you frustrated by the constant changes that are generated to carry out your work?
FF	Are you frustrated at work?

Source: Authors' own research.

Table 2. Scale Ostrich Effect Bias questions

Ostrich Effect Bias	
EAA	Let's say you're in this situation: You Know that you may have gone wrong in

	reporting the results of your customer satisfaction survey. Therefore, you try to give a long time to review your evaluation.
EAB	Suppose you are in this situation: Your boss asks you to give him a date to show your annual performance. You know that this must be within the month that it is running. However, you know that your performance hasn't been the best due to unavoidable circumstances presented during the year. Therefore, you try to extend the feedback date until the last moment.
EAC	Suppose you find yourself in this situation: You know that things aren't going well with the investments you made last month, so you prefer not to watch your progress all the time so as not to worry much.

Source: Authors' own research.

Table 3. Scale Rosy Retrospection Bias questions

Rosy Retrospection Bias	
RIB	Work before the pandemic time was better than it's now.
RID	Before, you could have approached your superiors better than today.

Source: Authors' own research.

Table 4. Scale Making Decision Questions

Decision-Making	
TDD	Can Decision–making be affected if we consider that in the past, things were better than now?
TDF	Do you consider that avoiding receiving negative information could influence Decision–making?

Source: Authors' own research.

Table 5. Scale Making Decision Questions

Job Performance	
DLB	Do you feel that your performance has decreased lately?
DLE	Do you feel that job frustration influences your job performance?

Source: Authors' own research.

Variables
Socio-demographic variables
As previously stated in the methodology section, a measurement scale was developed for this research project. Consequently, a random sample of 120 Mexican workers was selected. To gain insight into the socio-demographic characteristics of the respondents, a series of questions were posed. The resulting data are presented in the following graphical representation. This enables to gain insight into the demographic profile of the surveyed population.
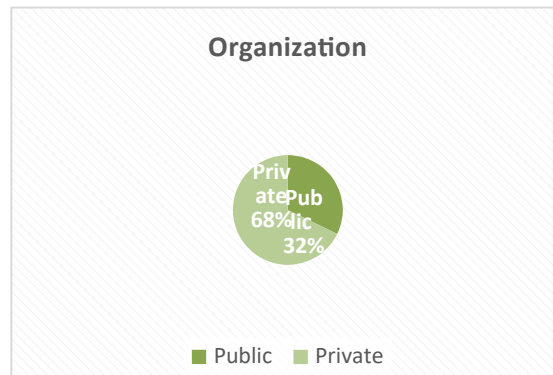
Figure 1. Organization
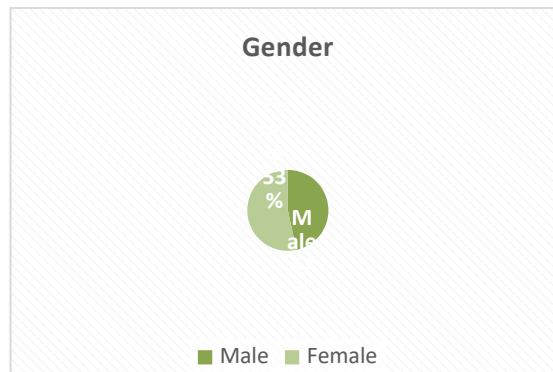Source: Authors' own elaboration.

Figure 2. Gender
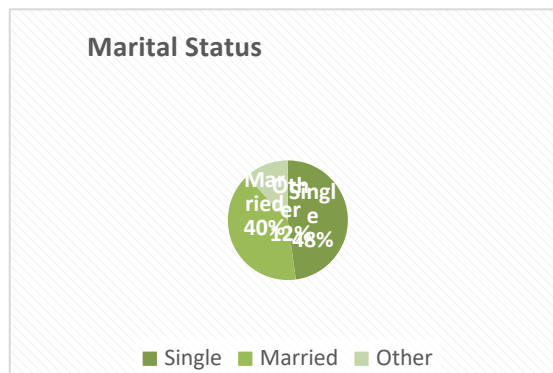Source: Authors' own elaboration.

Figure 3. Marital Status
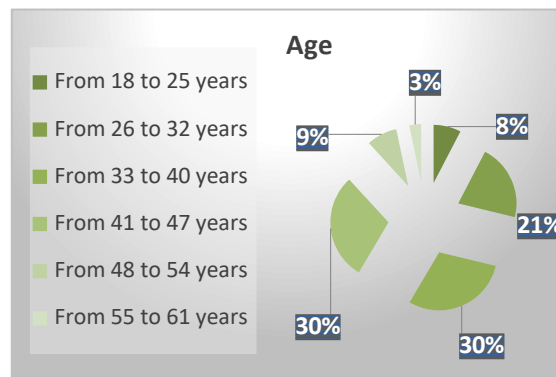Source: Authors' own elaboration.

Figure 4. Age
Source: Authors' own elaboration.

As evidenced by the data presented in this interview, there is a greater proportion of individuals employed in the private sector (68%) compared to the public sector (32%). Additionally, there is a notable equilibrium between genders, with 53% of the population identifying as female and 47% as male. In terms of marital status, 12% of the population is in a different marital status category, 48% is single, and 40% is married. In terms of age distribution, the population cohort comprising individuals between the ages of 25 and 54 represents the most significant demographic segment.

The Measurement
Job Frustration

Job Frustration factor obtained an average of 3.06 with a standard deviation of 1.16, which indicates that the sample does not present a bias in the behavior of the information. If we see the general average of the Job Frustration Factor, it is 3.06, which is centralized, so it is essential to analyze the behavior of each question. In frequency table 5, we can see the behavior of the respondents concerning each question.

Table 6. Percentage Frequency Table of Job Frustration

	Totally disagree	Disagree	Neither agree nor disagree	Agree	Totally Agree
FA	13.30%	20%	17.60%	23.30%	25.80%
FB	10.80%	20.80%	20.90%	25.80%	21.70%
FC	12.50%	15%	15.80%	25%	31.70%
FD	22.50%	25%	16.70%	20%	15.80%
FE	18.30%	21.70%	24.20%	20.80%	15%
FF	30%	26.70%	14.10%	12.50%	16.70%

Source: Authors' own research.

In response to the question posed by the FA, nearly half of the respondents (49.1%[1]) indicated that they either agree or strongly agree that they have encountered obstacles in their work that have prevented them from performing their duties effectively. This situation has resulted in feelings of frustration, as they are unable to act in accordance with their expectations. This is a noteworthy finding, as it suggests that nearly half of the respondents may be experiencing frustration because of these circumstances.

In relation to the FB question, 47.5%[2] of respondents indicated that they concur with the statement that obstacles have been encountered which have enabled them to comply with the requisite work objectives. Consequently, this figure represents a notably high proportion of individuals who may experience frustration at work. Conversely, the FC question indicates that over half of the respondents (56.7%[3]) concur that extraneous circumstances in their work have impeded the attainment of expected objectives. The data is noteworthy insofar as it indicates that a considerable proportion of Mexican workers are exposed to risk factors at work that have the potential to give rise to or exacerbate feelings of frustration.

In response to the FD question, 47.5%[4] of respondents indicated disagreement or total disagreement with the assertion that they lack the requisite resources to perform their work to the expected standard. Consequently, it can be posited that the company does indeed provide its employees with the requisite resources to perform their duties in an optimal manner.

The FE question necessitates a more comprehensive examination of the obtained results, as this question, when subjected to closer scrutiny, is more forthright in its assessment of whether the individual experiences frustration due to the frequent alterations to their work processes. A further 20% of respondents indicated that they were unsure whether they agreed or disagreed with the statement, suggesting a lack of clarity regarding their emotional state. Conversely, when prompted directly, a significant proportion of employees (35.80%[5]) reported experiencing frustration at work, while a minority (40%[6]) stated that they did not feel frustrated at work.

The last FF question of this factor shows that 56.70%[7] of respondents do not feel frustrated at work. That is to say that Mexican workers do not perceive the feeling of Job Frustration, however, studying the behavior of the answers to the previous questions on the Job Frustration factor, it can be observed that in companies there are circumstances of high risk for the development or promotion of Job Frustration in Mexican workers. Additionally, it is important to highlight a fact in relation to this question and this is that 29.2%[8] of Mexican workers, that is, 3 out of 10 collaborators do feel frustrated at work, which is definitely a significant fact for companies, considering that the responses that a frustrated employee can present are aggression and annoyance, and this has an impact on the environment in the company, as well as on organizational effectiveness, without leaving behind the increase in absenteeism and staff turnover.

1Agree 23.30% + Totally Agree 25.80% = 49.1%

2 Agree 25.80% + Totally Agree 21.70% = 47.5%
3 Agree 25% + Totally Agree 31.70% = 56.7%
4 Totally Disagree 22.50% + Disagree 25% = 47.5%
5 Agree 20.80% + Totally Agree 15% = 35.8%
6 Totally Disagree 18.30% + Disagree 21.70% = 40%
7 Totally Disagree 30% + Disagree 26.70% = 56.70%
8 Agree 12.50% + Totally Agree 16.70% = 29.2%

In conclusion, the results demonstrated that the factors exhibiting the most significant moderate positive correlation with Job frustration are: The strongest correlations were found between Rosy Retrospection Bias (0.512) and Job Performance (0.572). This suggests that there is a positive correlation between Job Frustration and the tendency to present a Rosy Retrospection bias, which in turn affects Job performance. This indicates that there is a relationship between these factors.

Ostrich Bias

The Ostrich Effect bias has an average of 2.2, with a standard deviation of 0.99, which suggests that the information in question behaves in a manner that is consistent with the expectations associated with this bias. This suggests that individuals are unaware of the presence of this bias in their behavior.

Table 6. Percentage per question – Ostrich Effect Bias

	Totally Disagree	Disagree	Neither agree nor disagree	I agree	Totally agree
EAA	44.50%	24%	21.10%	8.40%	2.50%
EAB	51.30%	21.00%	11.70%	11.80%	4.20%
EAC	32.80%	16%	24.30%	11%	16.00%

Source: Authors' own research.

A review of the results obtained in each question of the Ostrich Effect bias reveals that 68.5%[9] of the EAA respondents either strongly disagree or disagree with the delay in reviewing their results, despite indicating that they believe their results were likely unfavorable. Consequently, only 10.9%[10] of respondents indicated a tendency to postpone the review of negative results. Regarding the EAB question, it is evident that the majority of respondents (72.3%[11]) do not attempt to disregard unfavorable information in circumstances of risk or peril. However, it is noteworthy that a considerable proportion of Mexican employees (16%[12]) do engage in such avoidance behaviors.

In conclusion, 48.8%[13] of respondents do not divert their focus from the review of negative and disturbing key information, as set out in question EAC. Nevertheless, 27%[14] of respondents indicated that they do engage in this behavior. Averaged across the results, 18%[15] of Mexican workers exhibit the Ostrich Effect bias. Therefore, this data should be considered by companies. Furthermore, when the analysis of the correlations obtained is added to this data, it becomes evident that people who present the Ostrich Effect Bias are affected in their Job Performance. This is because these factors maintain a moderate positive correlation (0.428). In other words, the Ostrich Effect bias has been found to impact the Job Performance of 18% of Mexican workers.

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9 Totally Disagree 44.50% + 24% Disagree = 68.5%

10 Agree 8.40% + Totally Agree 2.50% = 10.9%

11 Totally Disagree 51.30% + Disagree 21% = 72.30%

12 Agree 11.80% + Totally Agree 4.20% = 16%

13 Totally Disagree 32.80% + Disagree 16% = 48.8%

14 Agree 11% + Totally Agree 16% = 27%

15 [(Agree EAA 8.40% + EAB 11.80% + EAC 11% = 31.20/ 3 =10.40%) + (Totally Agree EAA 2.50% + EAB 4.20% + EAC 16% = 22.70 /3 = 7.6%)] = 10.40% + 7.6% = 18%

Rosy Retrospection Bias
The Rosy Retrospection Bias presented a mean of 2.92 with a standard deviation of 1.03.

Table 7. Percentage per question – Ostrich Effect Bias

	Totally Disagree	Disagree	Neither agree nor disagree	I agree	Totally agree
EAA	44.50%	24%	21.10%	8.40%	2.50%
EAB	51.30%	21.00%	11.70%	11.80%	4.20%
EAC	32.80%	16%	24.30%	11%	16.00%

Source: Authors' own research.

A review of the results obtained in each question of the Ostrich Effect bias reveals that 68.5%[16] of the EAA respondents either strongly disagree or disagree with the delay in reviewing their results, despite indicating that they believe their results were likely unfavorable. Consequently, only 10.9%[17] of respondents indicated a tendency to postpone the review of negative results. In regard to the EAB question, it is evident that the majority of respondents (72.3%[18]) do not attempt to disregard unfavorable information in circumstances of risk or peril. However, it is noteworthy that a considerable proportion of Mexican employees (16%[19]) do engage in such avoidance behaviors.

In conclusion, 48.8%[20] of respondents do not divert their focus from the review of negative and disturbing key information, as set out in question EAC. Nevertheless, 27%[21] of respondents indicated that they do engage in this behavior. Averaged across the results, 18%[22] of Mexican workers exhibit the Ostrich Effect bias. Therefore, this data should be considered by companies. Furthermore, when the analysis of the correlations obtained is added to this data, it becomes evident that people who present the Ostrich Effect Bias are affected in their Job Performance. This is because these factors maintain a moderate positive correlation (0.428). In other words, the Ostrich Effect bias has been found to impact the Job Performance of 18% of Mexican workers.

Rosy Retrospection Bias
The Rosy Retrospection Bias presented a mean of 2.92 with a standard deviation of 1.03.

Table 8. Percentages per question – Rosy Retrospection Bias

	Totally disagree	Disagree	Neither agree nor disagree	I agree	Totally agree
RIB	20.80%	18%	28.30%	14.20%	19.20%
RID	31.10%	23.50%	18.50%	8.40%	18.50%

Source: Authors' own research.

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16 Totally Disagree 44.50% + 24% Disagree = 68.5%

17 Agree 8.40% + Totally Agree 2.50% = 10.9%

18 Totally Disagree 51.30% + Disagree 21% = 72.30%

19 Agree 11.80% + Totally Agree 4.20% = 16%

20 Totally Disagree 32.80% + Disagree 16% = 48.8%

21 Agree 11% + Totally Agree 16% = 27%

22 [(Agree EAA 8.40% + EAB 11.80% + EAC 11% = 31.20/ 3 =10.40%) + (Totally Agree EAA 2.50% + EAB 4.20% + EAC 16% = 22.70 /3 = 7.6%)] = 10.40% + 7.6% = 18%

A detailed examination of the Rosy Retrospection bias survey reveals that, with regard to question RIB 28.30% of respondents indicated that they neither agreed nor disagreed. This suggests that a significant proportion of respondents were uncertain as to whether the work situation prior to the pandemic was superior to the current one. Conversely, 33.4%[23] of respondents indicated a strong agreement or agreement that the work environment prior to the pandemic was superior to the current one, while 38.8%[24] expressed disagreement or strong disagreement. In relation to the RID question, slightly over half of the respondents (54.6%[25]) indicated that they do not believe they could have approached their superiors in a superior manner than they currently do.

Conversely, the Rosy Retrospection Bias exhibits a moderate positive correlation with Job Frustration and Job Performance. This suggests that an increase in Job Frustration will result in a greater prevalence of the Rosy Retrospection bias among workers, which in turn will have an impact on their Job Performance. In other words, if an employee is confronted with obstacles that impede their ability to achieve their goals, they may develop the perception that the work environment is more conducive to positive interactions with their superiors. This, in turn, can lead to a decline in the employee's Job performance.

Decision Making

The Rosy Retrospection Bias with Decision Making averaged 3.025, with a standard deviation of 1.36, and the average Ostrich Bias with Decision Making averaged 4.075 with a standard deviation of 1.30.

Table 9. Percentages per question – Decision-Making

	Totally disagree	Disagree	Neither agree nor disagree	I agree	Totally agree
RIB	20.80%	18%	28.30%	14.20%	19.20%
RID	31.10%	23.50%	18.50%	8.40%	18.50%

Source: Authors' own research.

In response to the question regarding the potential impact of the Rosy Retrospection Bias on decision-making, 24.4% of respondents indicated a neutral stance, neither agreeing nor disagreeing with the proposition. However, a notable divergence of opinion exists between those who expressed agreement and those who refuted it. It can be seen that 36.6%[26] of respondents believe that decision-making cannot be affected by assuming that the past was a better time than the present. Conversely, 38.7%[27] of those surveyed do agree that decision-making can be affected.

The TDF question indicates that 74.8%[28] of respondents believe that the avoidance of negative information (ostrich effect bias) can impact decision-making processes. This is an intriguing finding, as the majority of respondents indicated that there is an influence, suggesting a prevalent trend regarding the impact of avoiding negative information on decision-making.

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23 Agree 14.20% + Totally Agree 19.20% = 33.4%

24 Totally Disagree 20.80% + Disagree 18% = 38.8%

25 Totally Disagree 31.20% + Disagree 23.50% = 54.6%

26 Totally Disagree 17.60% + 19% Disagree = 36.6%

27 Agree 20.20% + Totally Agree 18.50% 38.7%

28 Agree 18.50% + Totally Agree 56.30% = 74.8%

The results indicate that respondents exhibit a range of cognitive biases, including Rosy Retrospection Bias and Ostrich Effect, which influence their decision-making processes. The correlation table reveals a moderate positive correlation between decision-making and several other variables, including the following: There is a moderate positive correlation between Job Frustration (0.411) and Job performance (0.410). It can be reasonably deduced that the factors under consideration in this study are interrelated.

Job Performance
The average of the variable Job Performance related to Job Frustration obtained an average of 3.88 with a standard deviation of 1.29.

Table 10. Percentages by question – Job Performance

	Strongly Disagree	*Disagreement*	*Neither agree nor disagree*	*Agreement*	*Totally agree*
DLB	*39.20%*	*21%*	*20.90%*	*10.80%*	*8.30%*
DLE	*20.20%*	*14.30%*	*11.70%*	*23.50%*	*30.30%*

Source: Authors' own research.

In the DLB question, it is observed that 60.2%[29] of respondents indicate that they do not perceive a decline in their performance in recent times. In contrast, regarding the DLE question, 53.8%[30] of respondents indicate that they agree or strongly agree with the assertion that feelings of work frustration impact Job Performance. Conversely, the moderate positive correlation of 0.572 between these factors demonstrates the influence that exists between them. Additionally, the Job Performance factor exhibits a moderate positive correlation with the Ostrich Effect Bias (0.428), the Rosy Retrospection Bias (0.528), and Decision Making (0.410).

The Model
Factor validity in measuring emotions
To validate the scale, a complementary factorial analysis was conducted using the SPSS program. In the case of the factors of job frustration, Ostrich Effect Bias, Rosy Retrospection Bias, job performance, and decision-making, it was found that the items in each factor were formed by a single component and could not be rotated. Therefore, the items considered for each factor are valid and measured for each factor. To ascertain the reliability of each factor, Cronbach's alpha was calculated, with the following results for each factor, indicating that each factor is reliable.

Table 11. Percentages by question – Job Performance

Factor	Cronbach's Alpha	Result
Job Frustration	0.915	Excellent
Rosy Retrospective Bias	0.663	Good
Ostrich Effect Bias	0.713	Very Good
Job Performance	0.581	Good
Decision - Making	0.550	Good

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29 Totally disagree 39.20% + Disagree 21% = 60.2%
30 Agree 23.50% + Totally Agree 30.30% = 53.8%

Source: Authors' own research.

Therefore, the information obtained by using the measuring instrument was valid and reliable. Once measured the validity of the factors reflecting the robustness of the applied survey, it is defined to use a method of structural equations by means of partial least squares, method that will be applied using the software Smart PLS. Nevertheless, it is also a technique that has gained considerable acceptance within the field of behavioral studies.

The creation of the PLS – SEM path model

Since their development by Wold (1975), structural equation models have been gaining acceptance in a variety of disciplines. They offer a more robust alternative to the typical regression Gaussian analysis, with the ability to accommodate different assumptions. This research proposes the use of a PLS-SEM for the treatment of the information obtained from the application of the measurement scale. The Smart PLS software for PLS-SEM was employed in this instance, as the aim was to predict the constructs.

This technique was employed in preference to CB-SEM due to the fact that this methodology presents fewer advantages in terms of sample size, particularly in the context of small samples (Reinartz et al., 2009). This was the case in the present study, as well as in instances where other methodologies had proved ineffective (Henseler et al., 2013). In order to ascertain the appropriate sample size for the scales in question and to evaluate the distribution of the data, one must consult the guidelines set forth by Hair et al. (2017).

It is also possible to handle collinearity (Temme et al., 2006) and model complex relationships (Garson, 2006) between two dependent variables or formative/reflexive constructs. In order to create a measurement model, the constructs are separated into two distinct categories: exogenous and endogenous variables. This is due to the reflexive nature of the questions that have been posed.

Six constructs are formed in figure 5; job frustration (red); mediation constructs; ostrich bias and rosy retrospection bias (blue); and the endogenous constructs are two, the first represented in green by decision-making processes and the other by job performance.

It is interesting to explain the initial part of the PLS-SEM algorithm based upon Vinzi et al., (2010) relationships are estimated between $Q(q=1,\ldots,Q)$ as an expression of unobservable constructs, also there are P variables $P(p=1,\ldots,P)$ observed in (N) unities as $(n=1,\ldots,N)$. Results are collected in a table. Results are collected in table $X(X_1,\ldots,X_q,\ldots,X_Q)$ where X_q is the generic *q-th* block made of P_p variables. There are two models calculated the first one is the measurement and the structural expressed as:

$$\varepsilon_j = \alpha_{0j} + \sum_{q:\varepsilon_q \to \varepsilon_q} \alpha_{qj}\varepsilon_q + \psi_j \qquad (1)$$

Where,

$\varepsilon_j(j=1,\ldots,J)$ is the endogenous latent variable α_{qj} Is the coefficient interrelation path the *q-th* exogenous latent variable to the *j-th* endogenous and the value of ψ_j is the error term. The other model, the measurement one, depends upon the outward on the inward model and can model different relations, for example, Chin (1988). In the specific case of reflexive models Chin (1988), each manifest variable is related to the latent variable, such as:

$$x_{pq} = \gamma_{po} + \gamma_{pq} \varepsilon_q + \in_{pq}$$
$$(2)$$

γ_{pq} is the loading of the *p-th* manifest variable in the *q-th* block and the error term $\in_{pq}$. An important assumption is that the error has a 0 mean it is not correlated with the latent variable, and the construction should be homogeneous.
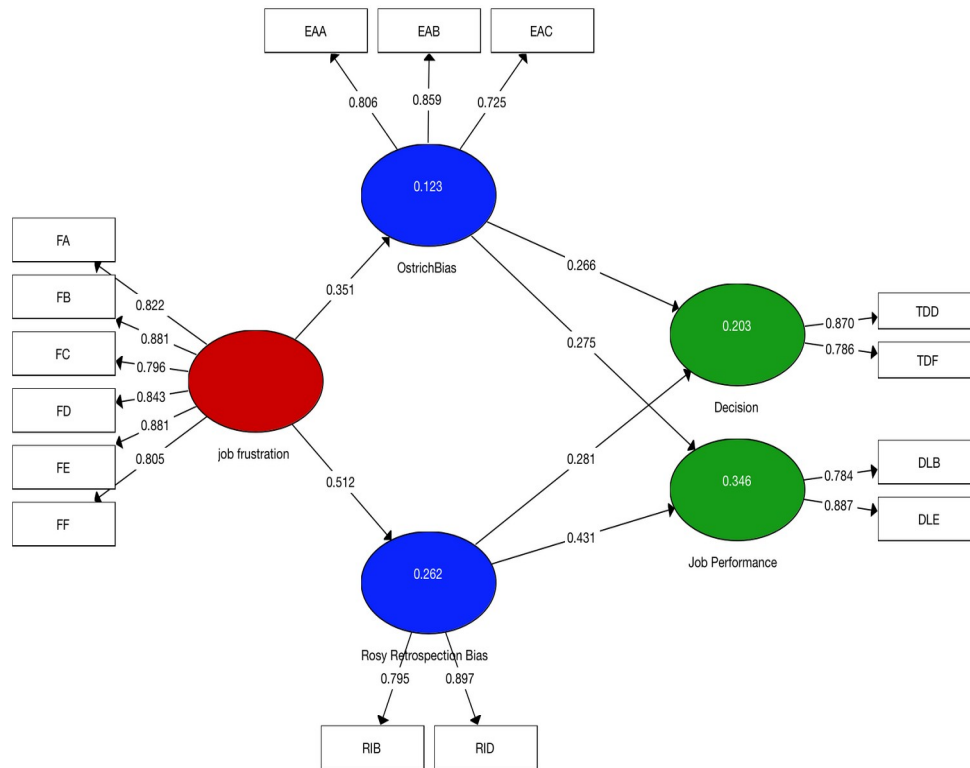

Figure 5. Path analysis and construct formation of the reflective model
Source: Authors' own elaboration

The exogenous construct is job frustration, which is represented by the questions FA, FB, FC, FD, FE, and FF, which are discussed in the preceding section. Similarly, Rosy Retrospection Bias is constituted by RIB and RID, while the Ostrich Bias is formed by EAA, EAB, and EAC. These constructs are related to mediation effects.

The preceding figure also illustrates the endogenous constructs, represented in green and designated "Decision," comprising questions TDD and TDF. The endogenous construct "Job Performance," reflected in questions DLB and DLE, is also highlighted. It is evident that all loadings exceed the value of .7 and are reflexively modelled. It is crucial to highlight that job frustration has a considerable impact on rosy retrospection bias. The R-squared value for rosy retrospection bias is 0.262, which is relatively high compared to the 0.123 value for the ostrich bias.

In the second instance, there is a stronger correlation between job frustration and rosy retrospection bias (.512) than between job frustration and the ostrich effect bias (.351). This is an intriguing finding, as it suggests that job frustration exerts a greater influence on how past experiences shape our perceptions than on our inclination to avoid confronting the present reality.

A comparative analysis of the two biases, Decision and Job Performance, reveals that the Ostrich Effect Bias exerts a comparable influence on both constructs, with a marginal discrepancy in its impact on job performance, at .275 versus .266 in Decision. Conversely, the impact of Rosy Retrospection Bias on job performance is more pronounced (.431) than on decision-making processes (.281). Furthermore, when the R squared is analyzed jointly with the decision process, it can be observed that the latter has a lower goodness value of 0.203 than the work performance process, which has a value of 0.346.

Table 12. Correlations

	Decision Making	Job Performance	Ostrich Effect Bias	Rosy Retrospection Bias	Job Frustration
Decision - Making	1.000	0.410	0.365	0.375	0.411
Job Performance	0.410	1.000	0.428	0.528	0.572
Ostrich Effect Bias	0.365	0.428	1.000	0.353	0.351
Rosy Retrospection Bias	0.375	0.528	0.353	1.000	0.512
Job Frustration	0.411	0.572	0.351	0.512	1.000

Source: Authors' own research.

As the correlation was analyzed, it became evident that the highest correlations were between Rosy Retrospection Bias, Job Frustration and Job Performance. Conversely, there is a paucity of correlation between the Ostrich Effect Bias and both job performance and decision-making

Model Validity

As demonstrated in Table 8, the Cronbach alpha coefficient yielded somewhat low values for most of the constructs. It should be noted that Hair et al. (2014) advise that Cronbach's Alpha is sensitive to the number of items on the scale and generally tends to underestimate internal validity. Therefore, it is essential to analyze other reliability measures. In terms of composite reliability, Hair et al. (2017) suggest that values between .6 and .7 can be deemed acceptable for explanatory studies, with ratios above .9 or .95 being less desirable as they imply that the variables are measuring the same phenomena.

In this instance, all the questions were posed with the understanding that job frustration is a multifaceted construct. As illustrated in table 12, composite reliability exceeds .8, and it is widely accepted that for exploratory purposes, the AVE must be greater than .5, as observed in all the constructs.

Table 13. Correlations

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Decision - Making	0.550	0.568	0.814	0.687
Job Performance	0.581	0.615	0.824	0.701

Ostrich Effect Bias	0.713	0.708	0.840	0.637
Rosy Retrospection Bias	0.663	0.658	0.836	0.719
Job Frustration	0.915	0.925	0.934	0.703

Source: Authors' own research.

In order to test the discriminant validity at the Fornell-Larcker criteria, it is necessary to demonstrate that for any latent variable, the square root of the average variance extracted (AVE) must be greater than the correlation between that variable and any other variable. As demonstrated in the subsequent table, no issues pertaining to discriminant validity are evident when this criterion is applied.

Table 14. Discriminant Validity Fornell-Larcker Criterion

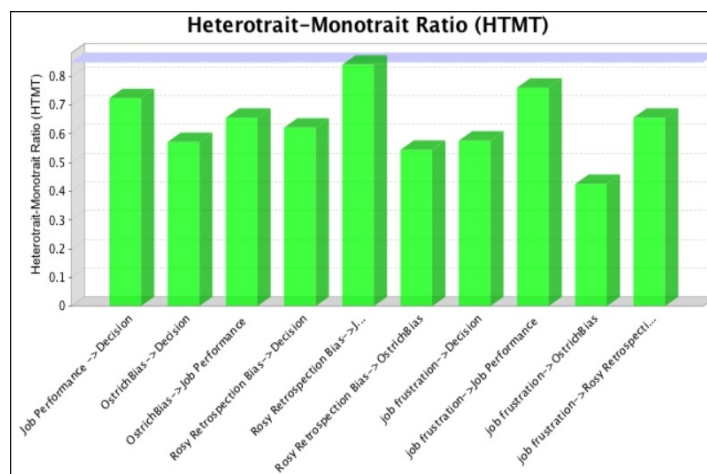|	Decision Making	Job Performance	Ostrich Effect Bias	Rosy Retrospection Bias	Job Frustration
Decision Making	0.829				
Job Performance	0.410	0.837			
Ostrich Effect Bias	0.365	0.428	0.798		
Rosy Retrospection Bias	0.375	0.528	0.353	0.848	
Job Frustration	0.411	0.572	0.351	0.512	0.839

Source: Authors' own research.

Figure 6. Heterotrait - Monotrait ratio of correlations
Source: Authors own elaboration

A further issue of discriminant validity in the research arises from the multitrait-multimethod matrix, as indicated by the heterotrait-monotrait ratio of correlations (HTMT). Although, as illustrated in Figure 6, in which all the values of the HTMT are less than .90, there are

no issues, it is pertinent to note that research has been conducted on the utilization of HTMT for discriminant validation purposes. Henseler, Ringle and Sarstedt (2015) demonstrate that this method is more effective than the Fornell-Larcker approach when comparing simulations. This methodology is therefore presented in this analysis.

Table 15a. Variance inflation Factor Inner Values

	Decision Making	**Job Performance**	**Ostrich Effect Bias**	**Rosy Retrospection Bias**
Decision - Making				
Job Performance				
Ostrich Effect Bias	1.142	1.142		
Rosy Retrospection Bias	1.142	1.142		
Job Frustration			1.000	1.000

Source: Authors' own research.

Table 15b. Variance inflation Factor Outer Values

	DLB	DEL	EAA	EAB	EAC	FA	FB	FC	FD	FE	FF	RIB	RID	TDD	TDF
VIF	1.20	1.20	1.90	2.07	1.18	3.0	4.5	2.5	2.7	3.1	2.07	1.24	1.24	1.16	1.16

Source: Authors' own research.

In the specific Case of the Variance Inflation Factor (Table 14a, 14b) there are no problems if this factor is more minor than 5. In this case, some questions like FA and FB are near that point, but they don't have problems.
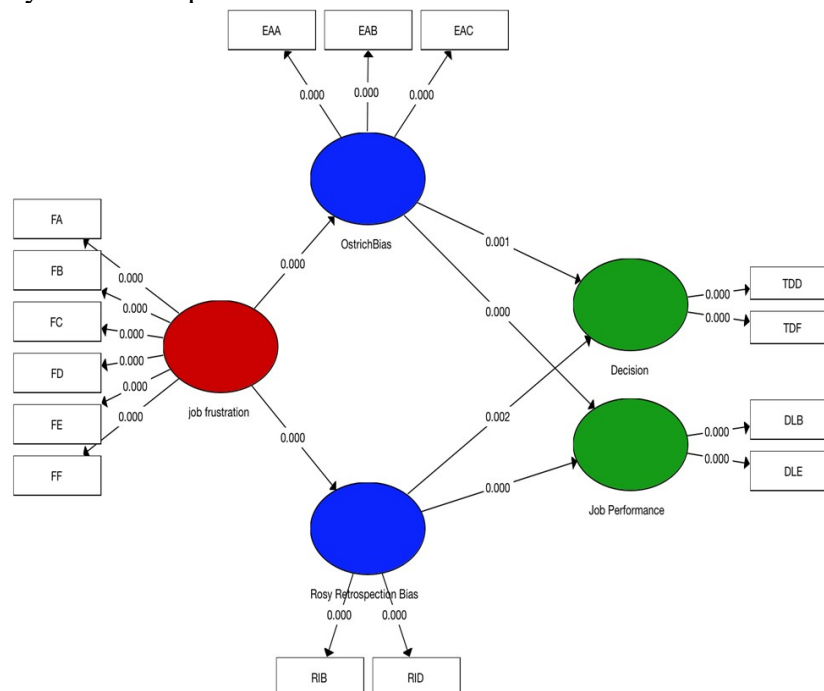
Figure 7. Bootstrapping of the construct of the reflective model
Source: Authors own elaboration

A bootstrap of 5,000 simulations was conducted on the model, and the results of the bootstrapped P-values are presented in Figure 7. All loadings are statistically significant, and the paths represent both the direct effects from exogenous variables to endogenous variables and the indirect effects of mediation.

Consequently, all the P-values are statistically significant in this model. Additionally, with regard to the Q-squared, it can be stated that the model demonstrates superior predictive capacity in comparison to the benchmark average. Two methodologies were employed: the cross-validated redundancy and the cross-validated communality, as illustrated in the following tables (Tables 15 and 16).

Table 16. Construct Cross Validated Redundancy

	SSO	SSE	Q² (=1-SSE/SSO)
Decision - Making	240.000	212.511	0.115
Job Performance	240.000	187.427	0.219
Ostrich Effect Bias	360.000	334.705	0.070
Rosy Retrospection Bias	240.000	198.658	0.172
Job Frustration	720.000	720.000	

Source: Authors' own research.

Table 17. Construct Cross validated Communality

	SSO	SSE	Q² (=1-SSE/SSO)
Decision - Making	240.000	207.997	0.133
Job Performance	240.000	201.644	0.160
Ostrich Effect Bias	360.000	259.090	0.280
Rosy Retrospection Bias	240.000	192.564	0.198
Job Frustration	720.000	319.645	0.556

Source: Authors' own research.

The PLS Predict algorithm was executed with ten k-fold cross-validation iterations. The algorithm divides the data set and makes a prediction based on the observations from the k-1 subsets, as described by Shmueli et al. (2016). In this instance, the distinction between LM (Linear Model) errors and PLS (Partial Least Squares) errors is evident. It is important to note that the errors associated with PLS modelling must be less than those encountered in LM. Furthermore, ten additional repetitions were conducted, with the Root Mean Square Error of Predictions (RMSE), the Mean Absolute Error (MAE), and the Mean Absolute Percentage Error (MAPE) being calculated.

Table 18. Construct Cross validated Communality

PLS					LM					LM-PLS		
	RMSE	MAE	MAPE	Q2		RMSE	MAE	MAPE	Q2		RMSE	MAE	MAPE
TDD	1.287	1.102	55.292	0.105	TDD	1.323	1.12	55.604	0.055	TDD	0.035	0.019	0.312
TDF	1.26	1.001	46.302	0.076	TDF	1.296	1.013	46.151	0.021	TDF	0.037	0.012	-0.151
DLE	1.346	1.175	61.12	0.221	DLE	1.334	1.08	54.815	0.234	DLE	-0.011	-0.096	-6.306
DLB	1.229	1.032	61.913	0.131	DLB	1.205	0.943	55.877	0.165	DLB	-0.024	-0.089	-6.037
EAB	1.185	0.97	61.323	0.06	EAB	1.235	1.002	63.199	-0.022	EAB	0.051	0.032	1.876
EAA	1.065	0.899	56.757	0.08	EAA	1.097	0.931	58.53	0.024	EAA	0.032	0.032	1.773
EAC	1.403	1.194	68.177	0.062	EAC	1.464	1.239	69.482	-0.022	EAC	0.061	0.045	1.305
RID	1.295	1.086	59.961	0.224	RID	1.285	1.062	56.336	0.236	RID	-0.011	-0.024	-3.626
RIB	1.307	1.09	55.933	0.124	RIB	1.36	1.118	57.503	0.051	RIB	0.053	0.028	1.57

Source: Authors' own research.

The predictive relevance of the model between TDD, TDF, EAB, EAA, EAC, RIB, and their RMSE and MAE is less in PLS than in LM (Figure 8). In the specific case of MAPE, the items TDD, EAB, EAA, EAC, and RIB are less with PLS calculation than in a LM estimation.

Results and discussion

In order to facilitate comprehension of the concept under analysis, the results are presented in two stages. The initial stage pertains to the initial hypothesis, which posited the following:

H1: Job Frustration is related to the Ostrich Effect and Rosy Retrospection Bias, decision-making, and job performance.

The current hypothesis is that the complete analysis of the entire structural equation model is accepted, as all P-values are significant for the total model. Initially, the factors forming the various constructs were also statistically significant, and all P-values are less than 0.05 (Figure 7), thus also when testing the validity of the model, the criteria are met, as shown in Table 17.

H2: Job frustration is statistically significant with Rosy Retrospection and Ostrich Effect Bias.

This hypothesis is accepted, both of the aforementioned biases are statistically significant, and there is an important relationship between job frustration and the outcome of both biases. There is a strong relationship between job performance and Rosy Retrospection Bias, with a path coefficient of 0.51, and a R-squared of .262. Furthermore, the path value for the Ostrich Effect Bias is 0.351, indicating a relatively weaker correlation. The explanatory power of this relationship is also limited, with an R-squared value of only 12.3%.

Additionally, it is crucial to acknowledge the positive correlation between Job Frustration and each behavioral bias. This implies that as Job Frustration increases, so does the prevalence of these biases. Among these, Rosy Retrospection emerges as the most significant bias for the enterprise. This is a logical conclusion in the context of the pandemic and the current challenging circumstances. Rosy Retrospection represents an idyllic point of view in which the past was

perceived as a more favorable period. This concept is particularly relevant for enterprises in Mexico, where individuals tend to nostalgically evaluate the past in a more positive light than the present, which can negatively impact employer motivation.

H3: Rosy Retrospection Bias and Ostrich Effect Bias are statistically significant on decision-making and job performance.

The hypothesis is accepted, as both of these biases are statistically significant with regard to decisions and job performance. The decision R squared is 20.3%, while the R squared for job performance is 34.6%. This latter figure is particularly relevant for the purposes of analysis, as it confirms that job performance can be affected by both of these biases. In examining the relationships between variables, it is essential to acknowledge that the strongest path is observed between Rosy Retrospection and Job Performance. The remaining three paths fall between 0.266 and 0.281.

For a comprehensive evaluation and discussion of the reflexive model, the Hair, Risher, Sarstedt, and Ringle (2019) table is employed to assess each component.

Table 19. Reflexive models total validation and discussion

Reflexive measurement model	Criteria	Validation
Loadings	≥.7 or .6 for exploratory studies	All of the loadings are above .7
Composite Reliability	Greater than .7	All the values are above .7
Convergence Validity	AVE ≥.5	The AVE is above .5
Discriminant Validity	For conceptually similar constructs HTMT <.90 different constructs <.85.	All values are less than .9
Collinearity	Cases of probable multicollinearity when VIF is greater than or equal to 5, cases of possible collinearity when VIF ≥3-5 Ideally, VIF should be <3.	All the values less than .5, cases of possible multicollinearity in FA, FB, FE
R-square	.75, .50, and .25 are considered substantial, moderate, and weak effects.	Weak effects in all cases have the most considerable effect on job performance
Q-square	Values greater than .25 and .50 are small, medium, and considerable according to predictive significance.	Two methods *Crossvalidated Redundancy* and *Crossvalidated Communality* were used. All the values are positive, just in the case o crossvalidated redundancy in Job frustration, no value was generated, but in the Crossvalidated communality the same value y calculated in .55

PLS Predict	Comparing LS versus PLS models	The RMSE (Root mean Square of predictions), and the MAE (Mean absolute error), are lower in case of PLS than LM is near 6 (RMSE, MAE) in the Case of MAPE just in 5 of ten items.
Model comparison	Minimize the BIC or GM.	The model sought to try to minimize the BIC.

Source: Authors' own research.

In terms of the overall validity of the model as outlined by Hair, Risher, Sarstedt, and Ringle (2019), the reflexive model exhibits no issues about loadings, composite reliability, convergence validity, and discriminant validity, as evidenced by the first four indicators presented in Table 17.

With regard to discriminant validity, the values of the HTMT are met. In the specific case of structural multicollinearity, the VIF is less than 5 in all cases, although a slight possibility of collinearity remains in the FA, FB, and FE questions. In line with expectations in the context of emotional studies, the results indicated weak effects and significant effects on job performance. Regarding cross-validated redundancy and communality, all Q^2 values were positive, except for cross-validated redundancy in job frustration, where no value was generated. However, in the case of cross-validated communality, the same value was calculated as 0.55.

The predictive relevance of the model between TDD, TDF, EAB, EAA, EAC, RIB, and their RMSE and MAE was found to be less in PLS than in LM. With regard to MAPE, the items TDD, EAB, EAA, EAC and RIB exhibited lower values when calculated using PLS than when estimated using LM. Furthermore, the objective of the model comparison was to minimize also the BIC.

Conclusions and Recommendations

The examination of Job Frustration represents a significant area of interest within the field of organizational psychology and economics. This study provides definitive evidence that Job Frustration can give rise to a range of biases that have the potential to impair decision-making and job performance. This theme is relevant to economics because it has the potential to affect the overall productivity of society, as evidenced by the impact of the pandemic on Mexican workers.

Two specific biases were examined in order to ascertain their effect on job performance and decision-making. The first of these is the Ostrich Effect Bias, whereby individuals seek to avoid negative information or to avoid seeing reality. The second is the Rosy Retrospection Bias, which can be defined as the phenomenon whereby an individual compares their current situation with that of the previous day. This comparison affects a significant proportion of their job performance, as people often place a higher value on the past.

It is incumbent upon companies to provide motivation and incentives, while exercising caution to prevent individuals from succumbing to this bias and engaging in unprofessional conduct. During the pandemic, this behavior is particularly pertinent given the significant shift in the labor force, with a transition from office-based to home-based workers. In the Mexican context, a notable proportion of companies adopted remote and online work arrangements. It is also

noteworthy that all the effects are positively correlated when using a scale of five possibilities and standardizing the data. It is imperative that organizations become aware of the presence of Job Frustration in their employees, as it has a detrimental impact on their behavior, decision-making and job performance.

The revised model demonstrated the interrelationship between frustration and the cognitive biases examined, elucidating their impact on decision-making and job performance. Firstly, it can be posited that Job Frustration has a significant impact on Rosy Retrospection Bas, in comparison to Ostrich Effect Bias. This concept can be understood as a tendency for individuals to nostalgically perceive the pre-pandemic era as a more favorable period in time. Additionally, the influence of Ostrich Effect Bias on decision-making is minimal, whereas its impact on job performance is more pronounced in the "job performance" construct than in the "decision" construct. It can therefore be posited that Ostrich Effect Bias may also have an impact on job performance. The Rosy Retrospection Bias exerts a greater influence on job performance than on decision-making. The impact on job performance is in excess of 50%, which indicates that workers tend to prefer the past.

In conclusion, the relationship between these variables is intricate, as the discussion of bias pertains to the misinterpretations individuals make when perceiving reality, which subsequently affects their decision-making processes. Therefore, an individual experiencing job-related frustration may exhibit cognitive biases that distort their judgment. The specific nature of these biases can influence decision-making without the individual being aware of the underlying distortion. Similarly, if an individual is experiencing frustration at work, it will affect their overall job performance, as they are less able to complete tasks effectively.

Considering the findings, it is advised that the organization implement policies that foster a positive organizational environment, thereby reducing work-related frustration and addressing associated cognitive Rosy Retrospection and Ostrich Effect biases. It is recommended that the policies established relate to communication and leadership. It is essential that the policies align the objectives, strategies, goals, and anticipated outcomes of the constituent departments and areas within the organization.

Furthermore, a comprehensive communication plan must be established. Furthermore, the communication policies must facilitate the implementation of communication plans that disseminate the organization's future direction.   Conversely, it is advised that the company's leaders implement suitable guidelines for the fulfilment of the objectives, interrelating the organizational objectives with the personal objectives of their work teams. This approach allows for the participatory construction of all.

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