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Decision-making and Effectiveness of Business Results in Times of COVID-19

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ABSTRACT

Managers often make decisions in organizations without being aware of the results and hence, their effectiveness. I evaluated three decisions managers made during the first weeks of the COVID-19 pandemic, using a hypothetical model of the decision-making process (DMP) so as to measure the percentage of effectiveness business results (PEBR) achieved. This article analyzes the impact of DMP on PEBR and identifies similarities and differences among top performing managers. Results reveal that the model not only predicts the PEBR, but also there are positive associations between the predictor variables that give meaning to validates the model, so I designed a comparative scenario by gender, age, company size, highlighting the profile of the managers with the best results. To understand the relationship between DMP and PEBR academics must adopt a perspective that considers not only the acceptance of decisions, but also distinguishes the association forces DMP variables; and managers can use this decision-making model to improve the process and the expected results. Practical implications, limitations and future studies are discussed.

Keywords: Decision-making, Participation, Alternatives, Organizational-Goals, Communication, Acceptance-of-Change, Decision-Outcomes
JEL Classifications: M10

1. INTRODUCTION

Organizational studies on DMP show that managers generally make decisions informed by the past, because they are used to solving urgent problems (Gavetti et al., 2012; Cyert and March, 1963), leaving foresight aside, DMP becomes simplistic and reactive (Janczak, 2005). Consequently, Nutt and Wilson (2010) recommended that DMP should consider the environmental conditions and model action steps, as for it is linked to effectiveness of business-results; and this is more favorable when the processes are more rational (Papadakis et al., 2010). However, since managers do not use rational economic models in real contexts, simpler and easier-to-use decision-making models are required (Holton and Naquin, 2005). In effect, the new global reality generated by COVID-19 forced organizations to make decisions to survive and adapt (Salanova, 2020); in this regard, countries have had to develop policies to support and economically rescue small-medium-and-large-companies (SMLC) in all Latin American countries (OECD, 2020).

Although in Latin America organizational studies are limited (Gonzales-Miranda, 2020), there is incipient interest from communication perspective to support both organizational change and decision-making by senior managers (Suárez et al., 2016); it is common for decision makers to make decisions influenced by emotions, biases, and the social environment, manifested through biases that affect their behavior -excess confidence, confirmation bias, sunk cost- (Galdós, 2010). Additionally, DMP is carried out without exhaustive analysis and the decision makers are inclined towards a single option due to prejudice, fear of change, risk avoidance, laziness, or instinct (Silva, 2008); the above makes DMP an urgent issue for Latin American SMLC that seek to obtain high PEBR.

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Regarding the relationship between DMP and PEBR there are different gaps in literature. First, I explored whether the increase in the number of participants involved in DMP affects PEBR (Oyo-Ita et al., 2020). Second, I studied the need to incorporate other aspects of organizational communication in DMP and its impact on PEBR (Xia et al., 2016). Third, I investigated whether, both the generation of more alternatives (Colorni and Tsoukiàs, 2020), as well as the number of organizational objectives (Colorni and Tsoukiàs, 2020; Kunz et al., 2016) and the level of acceptance of decisions (Di Fabio and Gori, 2016) affect PEBR or not; considering the scarcity of studies related to DMP variables. Finally, I empirically tested whether the Larson (2016) model complied with the recommendations of Holton and Naquin (2005), considering the simple and easy-to-use model in real contexts. Studying these relationships is of interest to SMLC in Latin American countries such as Peru, Colombia, Ecuador, and Chile because organizational decision-making tends to lack a validated and effective process, in face of business results; and decision makers sometimes take decisions without knowing whether what they are doing or not in fact solves problems in the real world (Ibañez, 2020).

2. BUSINESS DECISION-MAKING PROCESS

Although Simon (1947), March and Simon (1958), and Cyert and March (1963) laid the theoretical foundations of organizational behavior and management, the theory about the behavior of organizations of Cyert and March (1963) has extraordinarily influenced the managers' behavior, especially how they make decisions in organizations (Gavetti et al., 2012). Therefore, it is convenient to know the postulates of this process and how it is centered at the organizational level. Initially, and based on previous experiences, individuals choose the first alternative that they hope hoping it will satisfy their expectations; and when they do find it, they stop process considering other alternatives, since these do not flow naturally, due to lack of knowledge or due to the absence of knowing how to anticipate corresponding consequences after making the choice (Gavetti et al., 2012). This is because both individuals and companies are used to solving urgent, convergent problems based on rules, and they conform to what they find in their local environment, so solutions adopted will rarely violate disturb the status quo (Cyert and March, 1963). This rationality leads individuals and organizations to act under the modality of automatic pilot, that is, informed by the past and operating in the present by leaving aside calculation and forecasting capabilities (Gavetti et al., 2012), therefore that decision making becomes simplistic, reactive and local (Cyert and March, 1963; Janczak, 2005).

When addressing the academic literature on DMP, we find that not only are the theories abundant, but there are few explicit attempts to model action steps of such processes. Furthermore, when defined and measured it varies from one study to the next (Nutt and Wilson, 2010). For this reason, they suggested to know when to use a particular type of DMP considering the environmental conditions. Nonetheless, the results involving environmental conditions are contradictory. For example, Papadakis and Barwise (1997) found that environment variables moderated the relationship between DMP and effectiveness of business-results; but yet Elbanna and Child (2007) showed that -while the uncertainty of the environment did not moderate this relationship-, a hostile environment did. Additionally, Nutt and Wilson (2010) found that environmental variables do not influence the results of the process, but in some circumstances, they play an important role in shaping and influencing strategic decisions, reason why the discussion remains open.

In addition, several studies confirmed the existence of links between DMP characteristics and the results, both at the decision and organizational levels (Papadakis and Barwise, 1997; Hough and White, 2003; Elbanna and Child, 2007; Daniel, 2005; Olson et al., 2007; Atuahene-Gima and Li, 2004; Nooraie, 2008; Nutt, 1998; 2000; 2005). In this regard, there is also no consensus on what is understood by results in the DMP, because decisions produce multiple results that make it difficult for them to be directly observed, which is why Nutt and Wilson (2010) invited researchers to ask what is understood by results of a given decision; and furthermore, Papadakis et al., (2010) answered that the processes followed during a specific strategic decision affect different types of results, such as: decision quality, decision effectiveness and efficiencies, decision rhythm, decision commitment, performance of new products, overall satisfaction with the decision, opportunity and value. Papadakis et al., (2010) also discovered that, to the extent that when the processes are more rational, they do lead to more favorable results; and when individuals and organizations perform a rational, goal-oriented search they produce more successful results (Nutt, 2005).

However, COVID-19 new reality radically changed the DMP planetry landscape for individuals and organizations. The effects of this pandemic extended beyond the health sector, affecting the world economy and organizational DMP; so that, in a short period of time, consultative decision-making and unilateral decision-making (Akdere, 2011), prevailed in public and private spheres, over other normative processes based on rationality. Indeed, the pandemic forced managers and organizations to make decisions related to organizational survival and to adapt their business models to the new global reality, because if they did not, "the pandemic could affect organizations in terms of their post-traumatic disappearance, survival, adaptation or growth" (Salanova, 2020. p. 671). Thus, managers have a responsibility to produce high-quality ideas to ensure the survival of companies (Rossiter and Lilien, 1994).

2.1. Participation in Organizational Decision-making

Traditionally, according to the normative decision-making model, the function of managers in organizations is related to the task of defining problems, posing different alternatives, and developing and implementing solutions effectively (Akdere, 2011). However, since decision makers operating in real contexts, as in COVID-19, do not rely on rational economic decision models to ensure more effective organizational decisions, simpler, more affordable and user-friendly models are definitely needed, given individuals have limited access to pertinent information, and managers tend to consult with peers and are satisfied with a mere satisfactory

solution, rather than with an optimal decision, a characteristic of the bounded rationality model (Holton and Naquin, 2005).

Indeed, as workers or their representatives increase their influence on the decision agenda, not only will less trivial issues be debated (Child, 2020), but they will also commit themselves to a greater degree to make decisions a reality, especially when the context is uncertain and the level of complexity of the decision is greater (Akdere, 2011). Precisely, in the new pandemic reality, organizations can only estimate results, and, therefore, collaborators' participation has become a channel to provide experience and training in the search for solutions to organizational problems. It also has been shown that there is no reason to think that it jeopardizes organizational economic performance. Indeed, involving those involved in decisions has important advantages, such as: improving policies, processes, and organizational relationships due to managerial openness, allowing discussions, and creating greater trust and motivation, in benefit of results related to organizational performance (Child, 2020); as is also vital to achieve organizational goals (Oyo-Ita et al., 2020). Consequently, these authors recommended that organizations increase the intensity and degree of employee involvement in DMP to achieve enhance results.

In this regard, Hackman and Vidmar (1970) expressed that the optimal size of participants in DMP is four to five, although the complexity of the task determines its size. Subsequently, Hackman and Hackman (2002) found that large groups affect the results in terms of acceptability and originality and recommended teams of six people. Recently Child (2020) made a call in the context of post-COVID society to develop effective systems of organizational participation, in which the ingenuity and shared purpose of people are harnessed, and the serious problems that we all face are constructively addressed. Consequently, this study, following the recommendation of Holton and Naquin (2005), establishes and tests -in each subsection of this literature review- a simple and easy-to-use model based on real contexts; in addition, welcomes Oyo-Ita et al.' recommendation (2020) upon measuring the number of participants involved in DMP within the situation generated by COVID-19. The above suggests the first research question: to what extent does the number of collaborators participating in DMP affect PEBR? As a result, it is hypothesized that:

H_1: The number of participants involved in DMP affects PEBR.

2.2. Alternatives Considered and Objectives in Organizational Decision-making

Parallel to participation, it is important to understand that DMP, within the normative logic, implies jointly identifying an issue that requires a decision, proposing alternative solutions, comparing them with predetermined criteria, classifying solutions and selecting the best alternative (Holton and Naquin, 2005). However, in unstable environments such as the current context generated by COVID-19, rational DMP should be used in conjunction with intuitive DMP related to strategic decisions (Khatri and Ng, 2000), given since these are sophisticated forms of reasoning perfected over several years of work experience (Prietula and Simon, 1989), and because in rational DMP, the relationship between rationality and effectiveness of strategic decisions is stronger in hostile environments (Elbanna and Child, 2007). Therefore, to face the uncertainty, it is important that the decision makers list different decision alternatives when it comes to analyzing the cost-benefit risk (McCarthy et al., 2021). Indeed, both Eisenhardt and Zbaracki (1992) and Pfeffer (1992) pointed out two important reasons for examining different alternatives: policies and discovering the best course of action before implementing a solution, which implying careful evaluation (Starbuck, 1983). Despite this, different studies have shown that the evaluation of alternatives tends to be intuitive, unless decision makers are forced to involve others (e.g., Nutt, 1998; Allison, 1969; Dean and Sharfman, 1996). In addition, in uncertainty and ambiguous environments it can be complicated, every time the facts indicate a dissimilar alternative to the one that the decision makers want tends to adopt (Nutt, 2000). Therefore, preference is to resort to past practices (Starbuck, 1983) or actions taken by high-profile competitors to justify the decisions, ignoring uncertainty (Cyert and March, 1963; Nutt, 1990).

In this sense, Mintzberg et al., (1976) pointed out that in pressing circumstances where quick and urgent responses are required, decision makers take shortcuts when evaluating alternatives, even though there are techniques and tools that work (Nutt, 1998). In this regard, the study by Churchland et al., (2008) is utterly revealing, since the increase in the number of alternatives, all things being equal, initially increases the level of uncertainty, so the brain seeks to accumulate more evidence before making the final decision, generating a cost in the decisional time. The interesting thing about their findings is that said cost decreases, because the urgency signal imposes a deadline in the DMP. In effect, this signal is understood as the speed with which the brain acts to urgently respond to the evidence -on a shot rate basis-. Nevertheless, if the response time of the brain increases, it is interpreted as a risk rate that causes the elimination of the alternatives; therefore, time limits must be set on DMP. The value of these findings resides in that decision makers need to find quick and urgent answers due to the discomfort that is generated by uncertainty (Colorni and Tsoukiàs, 2020), should not lead them to look for shortcuts, nor to reduce the number of alternatives considered, if a deadline is indeed considered to make a pressing decision (Churchland et al., 2008). Additionally, it must be considered that both in everyday life and in business, people have limited capacities and time to process information, affecting the tasks of evaluating alternatives (Freund and Wiebringhaus, 2018).

Consequently, only up to a point, people are aware of their capabilities, making it necessary to transform the unconscious mind into conscious awareness. Therefore, the aforementioned researchers recommended the presence of third parties, notably influencing the level of awareness of decision makers, since they may open avenues for new alternatives. Heath and Heath' findings (2013) are indeed enlightening, having found that 40% and 55% of the decision makers consider one or two alternatives respectively; and when one goes from one to two groups of alternatives, the improvement in the DMP increases by six, reducing failures by half, concluding that three groups of alternatives would be optimal. In line with the proposal of a simple and easy-to-use model in

real contexts and based on the above, a second research question is posed: to what extent the number of alternatives considered in DMP affects PEBR?

H_2: The number of alternatives considered in DMP affects PEBR.

Although the generation of the best alternative is an old topic in DMP, it has been a topic less studied and developed in the past 50 years, except in the formulation of public policies (Colorni and Tsoukiàs, 2020). Only since the 1990s, several studies have highlighted that the generation of a set alternatives is a critical issue (e.g., Baetz et al., 1990; Bayne, 1995). But the most important idea is that before focusing on establishing the set of alternatives, decision makers should focus on what matters to them -their ultimate values- and what are the real means to achieve them -objectives pursued- (Colorni and Tsoukiàs, 2020). In this regard, the alignment of organizational processes with the objectives of the company has historically been a topic of great importance in the literature on strategic management (e.g., Chandler, 1962; Drucker, 1954). This has led to the use of value-centered thinking to identify and structure organizational objectives (Keeney, 2008), since this type of thinking focuses on DMP (Kunz et al., 2016). Consequently, it is key to this process as well as to the identification of attractive alternatives, that the decision makers have a clear set of objectives first, because they stimulate the creation of alternatives (Siebert and Keeney, 2015). However, although values-centered thinking is widely known by decision-making researchers, it has been approached tangentially, so there is a shortage of research that accounts for its use in strategic management practice (Colorni and Tsoukiàs, 2020; Kunz et al., 2016); that is, in the identification and use of the organizational objectives in DMP. Considering the close relationship between alternatives and objectives, this study addresses this gap in knowledge and incorporates the use of organizational objectives in the DMP, as a complement to the proposed model, simple and easy to use in real contexts. In line with the previous approach, a third research question arises: to what extent the number of organizational objectives positively affected by DMP affects PEBR?

H_3: The number of positively affected objectives by DMP affects PEBR.

2.3. Communication of Organizational Decisions

Decision makers have the task of constructing meaning in organizations as a continuous process, promoting through words the development of a system that mobilizes action and provides "plausible images that rationalize what people are doing" (Weick et al., 2005.p. 83). The process of constructing meaning in organizations goes through three moments (Gioia et al., 1994). It begins with a flow of organizational circumstances converted into words and categories; it continues, with the incorporation of organizational decisions in written and spoken texts; and ends, using reading, writing, speaking, and editing as means of shaping behavior. Consequently, creating meaning is to materialize meanings using language and communication, to guarantee the continuity of the flow of action in the organization, seeking correspondence between the expected world and the current world, since communication gives meaning to people in organizations as well as the events that affect them (Weick et al., 2005). Indeed, when employees become aware of the organizational decisions, they will work at their maximum capacity effectively because communication links all the departments that make up the organization (Oyo-Ita et al., 2020). The construction of meaning is intertwined with communication in the real context of the organization.

Consequently, participating in DMP in addition to enriching the flow of information in the organization (Anderson and McDaniel Jr, 1999), allows open communication and transparency (Scott-Ladd et al., 2006). Previous research has shown that participating in DMP has a positive relationship with communication, because it provides a greater communicative openness in environments with adequate information (Xia et al., 2016); and that adequate information to employees directly affects their probability of accessing useful information quickly and accurately (Rosenfeld et al., 2004), improving efficiency. This author defined adequate communication as the amount of information related to the organization that is provided to employees. When employees are involved in DMP and transparent information is shared, positive social results are obtained, such as improving job satisfaction and strengthening trust in management (Child, 2020). Indeed, organizational environments with adequate information offer employees more and better resources to find better solutions in organizational DMP. Therefore, the appropriate information communicated to employees not only gives the feeling that problems can be solved, but also increases their interest in participating in DMP (Xia et al., 2016). These authors invite to develop studies that can explore other aspects of organizational communication. Based on the above, this dimension complements the proposal of the simple and easy-to-use model in real contexts, which is why the fourth research question is addressed: to what extent do directors use different levels to communicate decisions and how much do they affect PEBR?

H_4: The perception of how well each decision is communicated affects PEBR.

2.4. Acceptance of Organizational Decisions

In 1985 Kirkpatrick suggested the existence of three factors that make it easier for employees to accept change: participation, communication, and empathy; and Gagné et al., (2000) confirmed it. In effect, they found that, although it is true that participation in DMP provides a certain capacity for control and choice on how to achieve the objectives; communication and empathy provide foundation and acknowledge the feelings involved in DMP, facilitating acceptance of decisions that lead to change. Indeed, if fear of the unknown and uncertainty about future benefits are major obstacles to change, communication and empathy are factors that make it easier to accept it.

A powerful approach to getting employees to accept decisions is to ask for information before making the final decision, regardless of whether employees' ideas will be used, because the key to achieving a high level of acceptance is that the people perceive that they will benefit from the decision (Kirkpatrick, 1985). Hence the importance of providing adequate information on upcoming changes and explaining why it is necessary (Gagné et al., 2000). Therefore, only those managers who practice participatory leadership will be able to obtain quality and acceptance of

decisions (Kirkpatrick, 1985). However, according to this researcher, obtaining the best quality and the highest level of acceptance depends on several factors. For example, while for some organizations the key is empowerment, for others this is not the case because employees are not qualified or are not interested in assuming other responsibilities. Consequently, the manager must decide which approach to engagement can offer the best quality and the highest level of buy-in.

Regarding the current situation of change generated by COVID-19, the main challenges that managers have in relation to DMP are related to two questions: what decisions should they make? and, how to achieve the maximum level of acceptance from those involved? due to bad results of previous changes due primarily to the lack of acceptance rather than to the decision *per se*. However, as with the set or group of alternatives and the use of organizational objectives in DMP, the related literature *vis à vis* the acceptance of change at the organizational level is likewise scarce (Di Fabio and Gori, 2016). Therefore, based on this, the present study addresses this gap in knowledge and finalizes the proposal of a simple and easy-to-use model in real contexts. In this sense, the fifth research question seeks to answer: to what extent the acceptance of the decision affects PEBR?

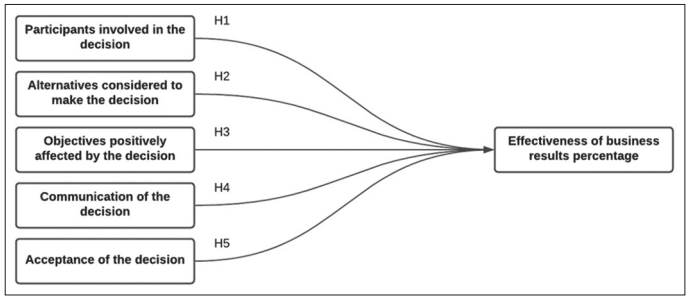
H_5: The perception about how well the collaborators accept each decision affects PEBR.

In summary, the relationships proposed in the five hypotheses make up a simple and easy-to-use model in real contexts, suggesting the causal relationships between the variables involved in DMP and PEBR. In this regard, Dean and Sharfman defined the strategic decision effectiveness as "the extent to which a decision achieves the objectives established by management at the time it is made" (1996.p. 372). Therefore, the degree of achievement of the goal is the result of DMP characteristics (Dholakia and Bagozzi, 2002). This study, developed in the first 3 months of the global declaration of COVID-19 as a pandemic by the World Health Organization (WHO), analyzes DMP and its impact on PEBR, based on a model developed by Larson (2016) for the business world which has not yet been subjected to empirical research. Therefore, it is evaluated whether it has the potential to be configured as a simple and easy-to-use model in real contexts. Therefore, comparisons are made considering variables such as: gender, age, and size of the company, since they obtained results significantly higher with respect to the other control variables evaluated. The gaps in knowledge and recommendations outlined above that support DMP model are considered (Figure 1). The next section presents the methodology used.

3. METHOD

The purpose of the study was to analyze three decisions that managers had to make during the first weeks in which the confinement of citizens due to COVID-19 began, seeking to identify the impact of DMP on PEBR. It is a quantitative study of cross-sectional design and convenience sampling, with statistical significance of 5%, and margin of error of ±5.63, where the phenomenon studied is directly examined without assumptions (Nutt, 2000). I chose non-probability sampling because it allows

Figure 1: Model and hypothesis



selecting all the cases that meet the necessary and sufficient characteristics to better understand DMP and its impact on PEBR. The interest focused on accessing managers at SMLC who, in the 1st weeks of global confinement due to COVID-19, participated closely in DMP regardless of their positions (Elbanna and Child, 2007), and who work at SMLC in all sectors of the economy. I used convenience sampling because the sample came from cases that had access (Battaglia, 2008); and the survey was sent to all alumni and students at CENTRUM PUCP business school in Peru, who completed them in the period between April 26 and June 23, 2020. According to the purpose of the study, I limited the sample to 303 executives who work in organizations with more than 30 employees and receive reports from a minimum of six people. All selected managers lead work teams in Peru (90%), Colombia (5%), Ecuador (4%) and Chile (1%).

3.1. Sample

The questionnaire had a presentation that guaranteed confidentiality and voluntary participation. I collected 432 responses, excluded 129 due to incomplete lists, leaving 303 usable questionnaires. Sector: public (7%), private (77%) and mixed (17%). Company size: small (24%, 30-99 employees); median (17%, 100-250 employees); large (59%, >250 employees). Business focus: national (55%); regional -one continent and> 3 countries- (22%); supra regional -two continents and >5 countries- (8%); global -five continents- (15%). Economic sector: production (24%), finance (10%), education (9%), technology (8%), professional-services (6%), transportation (6%), medical care (5%), mining (5%), consumer (5%), government (4%), energy-utilities (4%), trade-sales (4%), materials (3%), telecommunications (1%), NGO (1%), tourism (1%), other (4%). Manager profile: men (78%), women (22%). Age: 21-30 years (14%), 31-40 years (26%), 41-50 years (35%), 51-60 years (17%), >60 years (7%). Seniority: >5 years (37%), 3-5 years (24%), <3 years (38%). Educational level: technical/technologist (3%), undergraduate (41%), master's (54%), doctorate (3%). I selected the decisions made by managers as the unit of analysis, because it is consistent with a focus on decision results rather than performance; this choice provides a close link between DMP and effectiveness of business-results (Elbanna and Child, 2007).

3.2. Measurements

I measured the DMP from the questionnaire developed by Larson (2016). Regarding the decision, it includes items such as: how many people participated? How many alternatives considered? How many objectives positively affected? How well did you communicate

the decision? How well did people accept it? What percentage did the results obtained exceed the effectiveness expectations? I translated the questions from English to Spanish, piloted them using Google-Forms, then discussed and adjusted them with two experts from the Institute of Public Opinion of the Pontifical Catholic University of Peru. I coded the answers using the following scales: number-of-participants (0 = 1-2; 1 = 3-7; 2 = 8-12; 3 = >13); number-of-alternatives-considered (0 = 1; 1 = 2-3; 2 = >4); number-of-targets-positively-affected (0 = 0-1; 1 = 2-4; 3 = >5); level-of-communication (0 = "in-writing"; 1 = "to-all-affected"; 2 = "included-the-reasons"; 3 = "included-the-affected-objectives"; and 4 = "included the names of those involved"); acceptance (failed = 0.1.2; partially-failed = 3.4; neutral = 5.6; partially-approved = 7.8; fully-approved = 9.10); and results-that-exceed-expectations-effectiveness (0 = 0-49%; 1 = 50-69%; 2 = >70%). The questionnaire ended with an open question: what are the most important lessons learned regarding the decisions taken and the results?

Control variables. I selected these variables considering the results of the Bonferroni test. Gender (0 = "male"; 1 = "female"), age (0 = 21-30; 1 = 31-40; 2 = 41-50; 3 = 51-60; 4 = >60); company size (0 = 30-100; 1 = 100-250; 2 = >250); and seniority in the position (0 = <3; 1 = 3-5; 2 = >5).

3.3. Data Analysis

Using the SPSS software V.21, I did a descriptive analysis of demographic variables to know the profile of the respondents and the profile of the companies. Using the cross-table procedure with the Bonferroni statistical test, level of significance (<0.05), I did a comparative analysis to identify the existence of groups associated with each decision, and I defined groups based on the following variables: gender (male-female), age (5 age groups), company size (small-medium-large) and seniority (<3 years, 3-5 years, >5 years). I considered the group comparison effective if the sample obtained was greater than 30. Then, I performed a correlation analysis in three blocks to test the three decisions, considering the relationships between five independent variables of DMP: number-of-participants, number-of-alternatives, number-of-objectives, level-of-communication, and level-of-acceptance; and a dependent variable PEBR. Finally, I did a multiple regression analysis in the three mentioned blocks was performed to identify causal relationships.

4. RESULTS

I tested the quality of information to ensure statistical independence of errors and non-multicollinearity. In the three decisions I evaluated, the Durbin-Watson statistic ranged between 1905-2132, and VIF<10. ANOVA results of blocks 1, 2 and 3 have ($P < 0.05$) and show that DMP has a significant influence on PEBR (Table 1). Cronbach's alpha of the concepts related to DMP (0.74) indicates good reliability. The empirical findings tested five hypotheses using the frequency table and the multiple regression method. Multiple linear regression analysis showed that only acceptance of the decision affects PEBR.

PEBR can be predicted based on the perception of the decision acceptance variable, because in the three evaluated decisions it obtained statistical significance at 5%, I accepted H5. Since the other variables did not reach a level of statistical significance, I rejected H1, H2, H3 and H4. Although the decision acceptance variable is the one that most explains the relationship between DMP and PEBR, this does not mean that the other four variables should be eliminated (Table 2).

Table 1: ANOVA

ANOVA[a] (Block 1)					
Model	**Sum of squares**	**Gl**	**Mean square**	**F**	**Sig.**
1					
Regression	33,745	5	6,749	14,943	0,000[b]
Residual	133,685	296	0,452		
Total	167,430	301			
ANOVA[a] (Block 2)					
Model	**Sum of squares**	**Gl**	**Mean square**	**F**	**Sig.**
1					
Regression	49,333	5	9,867	23,396	0,000[b]
Residual	123,987	294	0,422		
Total	173,320	299			
ANOVA[a] (Block 3)					
Model	**Sum of squares**	**Gl**	**Mean square**	**F**	**Sig.**
1					
Regression	55,967	5	11,193	26,323	0,000[b]
Residual	123,316	290	0,425		
Total	179,284	295			

I made maps related to the three decisions and recorded 15 decisions on each map: Five decisions had a higher level of repetition in each block:

a. Carry out personal care and protection actions: health, personal safety, isolation measures COVID-19 tests (3/3): 18.5%, 11.3%, 13.7%
b. Reorganize staff, schedules and / or workload (3/3): 15.8%, 15.6%, 7.7%
c. Perform telework management (2/3): 12.5%, 15.3%
d. Carry out actions related to reduction or retirement of personnel: suspension-advance of vacations (2/3): 10%, 8%
e. Establish adequate communication channels with stakeholders (2/3): 5.6%, 6.3%.

The following three decisions had a lower frequency of appearance, but were important in the respective block:

a. Suspend operations and face-to-face activities / close the facilities (1/3): 9.6%
b. Reactivate activities, operations and/or services in the current context (1/3): 9%
c. Evaluate priorities, tasks, or lines of action for the company (1/3): 8.4%.

4.1. Common Patterns Regarding the Number of Participants in DMP

According to the Bonferroni test, I found significantly higher results in the three decisions for the company size. The option "3-to-7 participants" obtained the highest percentages in the three decisions: 50.5%, 47.5% and 47.2% respectively (Figure 2).

Table 2: Block analysis

Coefficients	Block 1		Block 2		Block 3	
	T	Sig.	t	Sig.	t	Sig.
(Constant)	3,946	0,000	4,055	0,000	2,992	0,003
Number of participants	−0,562	0,575	0,290	0,772	0,796	0,426
Number-of-alternatives	−0,467	0,641	−1,094	0,275	0,592	0,554
Number-of-targets-affected	−0,145	0,885	−0,591	0,555	−0,132	0,895
Communication-level	1,196	0,233	−0,460	0,646	1,097	0,274
Acceptance	8,444	0,000	10,733	0,000	10,768	0,000

Figure 2: Participants involved

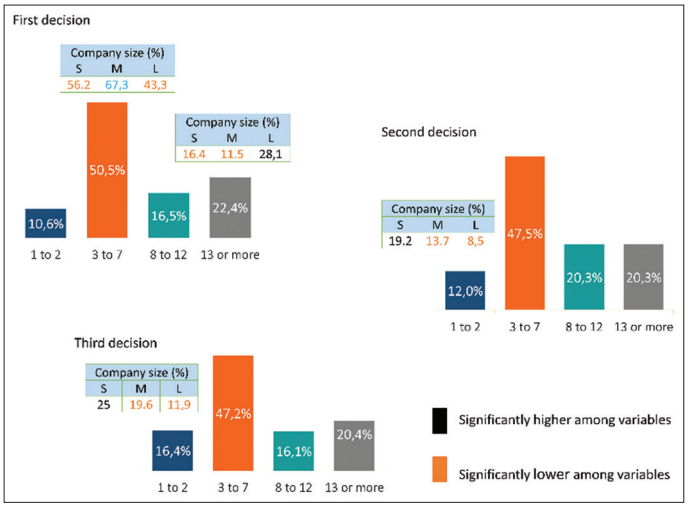
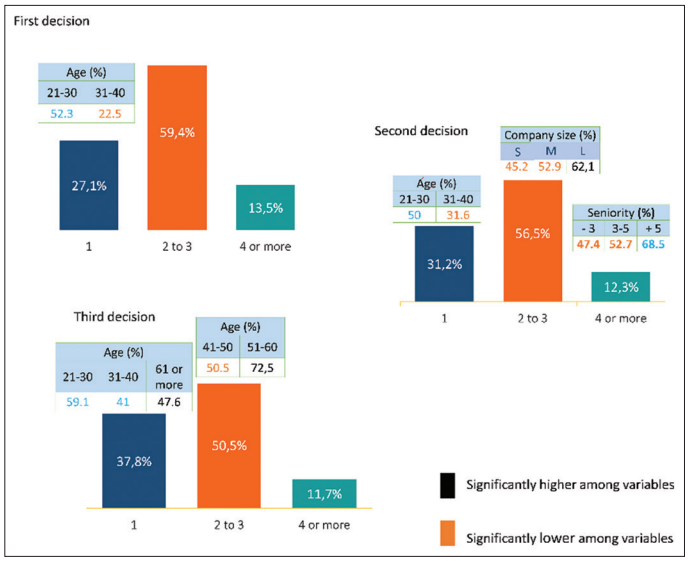


Figure 3: Alternatives considered



However, I found high PEBR in different options. First, for decision 1 and option "3-7 participants", medium-sized company obtained significantly higher results (67.3%), while 28.1% large companies chose the option "13-or-more participants." Second, for decisions 2 and 3 and option "1-2 participants", 19.2% and 25% of small companies had significantly higher results, respectively. It is noteworthy that, managers >61 years involve the largest number of participants in all decisions (>13): 31.8%, 38.1% and 38.1%, respectively. Also, 25% of small companies and 12% of large companies barely involve "1 or 2 participants" in DMP. In all decisions evaluated the number of participants did not affect PEBR, ($P > 0.05$) so I reject H1.

4.2. Common Patterns Regarding the Number of Alternatives Considered

I found significantly superior results according to the Bonferroni test in the three decisions evaluated. The option "2 to 3 alternatives" obtained the highest percentages in the three decisions. Related to decision 2, I obtained significantly higher results for large companies (62.1%) and for managers with more than five years in office (68.5%); likewise, in decision 3, for managers between 51 and 60 years (72.5%) (Figure 3). The option "1 alternative" obtained significantly higher results in the three decisions, both for managers aged 21-30: 52.3%, 50% and 59.1% who are more likely to consider a single alternative, as well as for managers aged 31-40 years (41%) and 61-or-more (47.6%) only in decision 3. Except for these last cases, as the manager's age increases, the propensity to make decisions based on a single alternative decrease. Related to company size considering three-or-more alternatives is rare only 11.9% in the three decisions. Although 35.8% of small companies prefer to use a single alternative to decide, together 34.1% of the three types of companies do the same. In all decisions evaluated, the number of alternatives considered did not affect PEBR, ($P > 0.05$) so I reject H2.

4.3. Common Patterns Regarding the Number of Positively Affected Objectives

Regarding the objectives positively affected by the decision, the preferred option for the managers in the three decisions was "2 or 3": 47.9%, 43.5% and 38.6%. According to the results of the Bonferroni test, in this range of objectives, male managers showed significantly higher results in decisions 2 and 3, while in decision 1 they were managers between 31-40 years old. Regarding the option "no objective positively affected," female managers had significantly higher results in decisions 1 and 2; while in decision 3, they were obtained by managers between 21 and 30 years old (Figure 4). Additionally, in the option "4-or-more" objectives positively impacted by the decisions, 19.2% managers of medium-sized companies obtained significantly higher results in decision 1; as well as 37.2% managers over 60 years of age, in decisions 1 and 2. This percentage almost doubles the previous age range 51-60 years (16.3%). In all decisions the number of organizational objectives did not affect PEBR, ($P > 0.05$) so I reject H3.

4.4. Common Patterns of How Managers Communicate Decisions

Regarding how well managers communicate decisions. I found significantly high results on all three decisions, according to the Bonferroni test. Related to decision 1: 31.9% male managers

Figure 4: Objectives positively affected

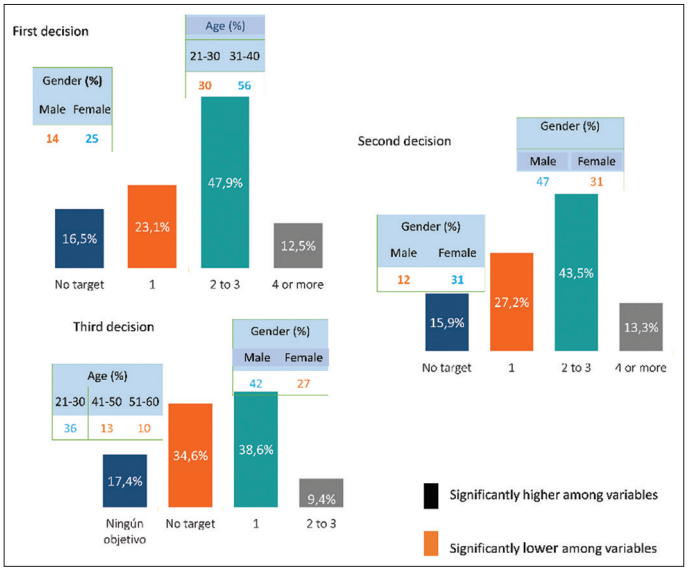
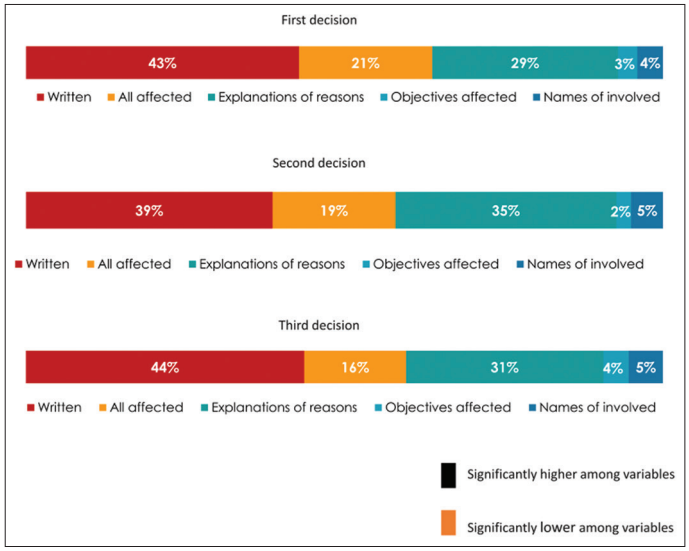


Figure 5: Communication of the decision



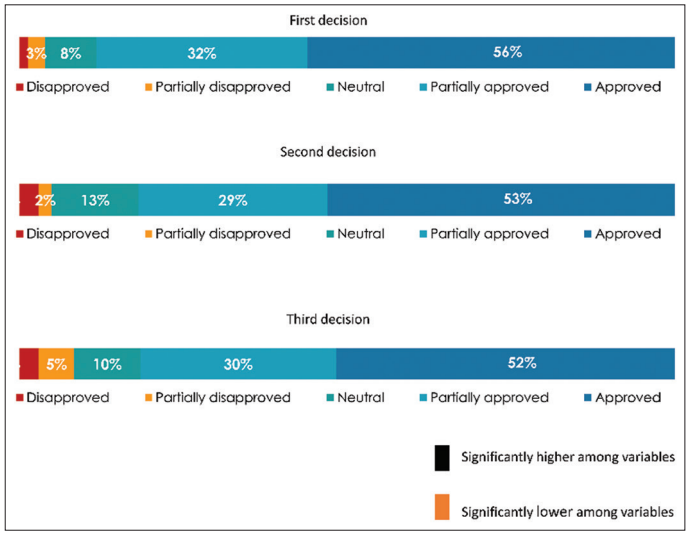
prefer to include reasons; 38.6% managers between 21 and 30 years old prefer to communicate with all those affected and 13.6% include the name of those involved; while 54.8% small companies' managers prefer to communicate in writing, and 35.4% large companies' managers prefer to include reasons. Related to decision 2: 50% small companies' managers prefer written communication; while 41.8% large companies' managers prefer to include the reasons, just like junior managers (<3 years in the position). Related to decision 3: 37.1% large companies' managers also prefer to include the reasons.

Managers presented common patterns in the three decisions evaluated for the three types of SMLC (Figure 5). Indeed, four out of every ten managers (42%) limit themselves to making a written statement, two out of ten managers (18.6%) involve all those affected by the decision, three out of ten managers (31.7%) explain the reasons for the decision are limited to first level communication, and very few explain the organizational objectives affected (3%) and/or include the names of those involved in the decision (4.7%). Additionally, the way in which the three decisions are communicated did not affect PEBR, (p>.05), so I reject H4.

4.5. Common Patterns of How Well Collaborators Accept each Decision

According to the Bonferroni test, I found significantly higher results in decisions 2 and 3. Related to decision 2, 27.5% medium-sized companies' managers consider that employees partially accepted the decision. While in decision 3, 44.4% small companies' managers consider employees fully accepted the decision, and 21.1% large companies' managers partially accepted it. SMLC' managers presented common patterns in all decisions made regarding the level of acceptance of the decision (Figure 6). Five out of ten managers perceive that the decisions were fully accepted by the employees in the three decisions: 56%, 53% and 52%, respectively. While the percentages of non-acceptance were minimal: 4%, 5% and 8%. Only the degree of acceptance is the only effective practice that significantly affects PEBR, ($P < 0.05$) so I accept H_5.

Figure 6: Acceptance of the decision



4.6. Common Patterns that Show Whether PEBR Exceeds Expectations

The following results are significantly superior according to the Bonferroni test. Decision 2, 55.4% of male managers obtained an PEBR (>70%); while 40.9% of female managers obtained an PEBR in the range (50%-69%). Decision 3, the perception of PEBR (>70%) is higher in male managers (50.9%) than in female managers (36.9%). It is noteworthy that 52.3% of all decisions reached an PEBR greater than 70% (Figure 7).

As the managers evaluated each decision, the levels of statistically significant correlations between all variables increased, all being positive. Indeed, while in decision 1, I found four statistically significant correlations (participants-alternatives, participants-objectives, alternatives-objectives, acceptance-results); in decision 2 they increased to five, adding (objectives-communication); and in decision 3 they increased to ten 10, adding (participants-acceptance, participants-results, objectives-acceptance, communication-acceptance, communication-results).

Figure 7: Expected PEBR

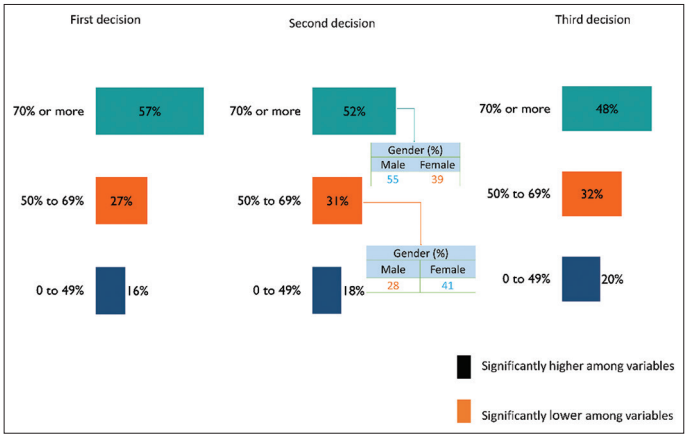
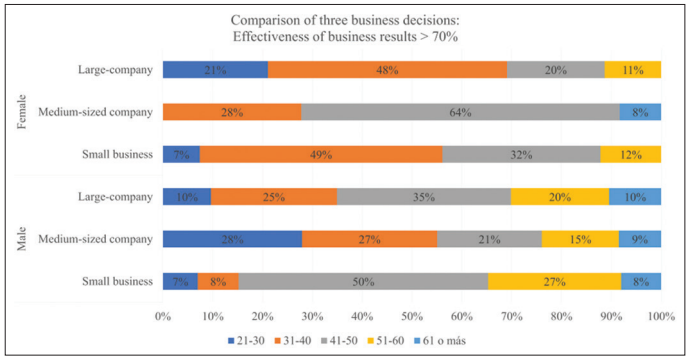


Figure 8: Comparative scenario



Based on the probability of obtaining an PEBR greater than 70%, I developed 30 scenarios for the three decisions evaluated, considering gender, company size and age. Figure 8 shows a consolidated comparative scenario. The most relevant aspects are the following. Female managers in two age ranges 21-30 and 31-40 years obtained the highest results compared to male managers at the same ages, both in large and small companies.

Finally, managers surveyed posed 387 learnings from the process. Nine categories emerged with 370 classified learnings; the remaining 17 referred to diverse topics, and I did not include them. The frequency and the percentage are indicated in parentheses.

1. Acceptance-adaptation to change-flexibility-uncertainty (54; 14.6%)
2. Planning-preparation (64; 17.3%)
3. Communication-information-assertiveness-motivation-empathy (66; 17.9%)
4. Decisions-analysis-thinking-agile-speed (68; 18.4%)
5. Objectives (12; 3.3%)
6. Participation-consultation-consensus-commitment-involve-team-support (35; 9.5%)
7. Alternative-proposal (8; 2.2%)
8. Safety-well-being (41; 11.1%)
9. Technology-innovate (21; 5.7%)

There are four apprenticeships with the highest frequency among managers that accounted for 68.2% of the total. First, regarding the decisions taken and the importance of analyzing them, thinking about them carefully, being agile, fast, and having an easy-to-implement model is particularly important for them. Second, the relevance of communication in DMP, emphasizing access to relevant and quality information, assertiveness to communicate, motivate and generate empathy with collaborators. Third, the need to plan and prepare strategies in advance capable of dealing with unexpected events or situations. Fourth, the importance of accepting change and adapting flexibly individually and as a team to face the uncertainty generated.

5. DISCUSSION AND IMPLICATIONS

In the context of COVID-19 recent studies on the relationship between DMP and PEBR show different research needs. First, the importance of involving participants in decisions to address the serious problems that organizations face today (Child, 2020), and increase their degree of participation to achieve business goals (Oyo-Ita et al., 2020). Second, the scarce existence of studies related to the following DMP variables: generation of alternatives (Colorni and Tsoukiàs, 2020), the use in practice of organizational objectives to make decisions (Colorni and Tsoukiàs, 2020; Kunz et al., 2016), and acceptance of decisions (Di Fabio and Gori, 2016). Additionally, Xia et al. (2016) recommended to explore other aspects of organizational communication in DMP; and Holton and Naquin (2005) recommended that in real contexts, simple and easy-to-use models should be used, considering more alternatives (Heath and Heath, 2013), given the current need for decision makers to find quick answers during uncertainty and unrest (Colorni and Tsoukiàs, 2020).

The richness of this study resides in the findings obtained when comparing the results of three decisions made by managers, amid the uncertainty and crisis generated by the COVID-19 pandemic, for the following reasons. First, the findings coincide with Poole and Van de Ven (2004) who stated that "it is difficult to separate independent from dependent variables in processes, because events are interrelated in a complex fashion" (p.547). Although only the variable acceptance of the decision directly affects the PEBR, the quality of the model is statistically significant in the three blocks ($P < 0.05$); so I decided not to eliminate the other variables so as not to unbalance the model or reduce the quality of discrimination (Hoyos and Serna, 2021). Additionally, findings showed that statistically significant correlations increased between one decision and another, confirming that all the independent variables of the model must be studied as a set. Second, findings show the existence of a one-to-one relationship between decision acceptance and PEBR. So, if managers want to achieve a high PEBR, they must seek higher degrees of acceptance. This coincides with Kirkpatrick' findings (2001), since managers who practice participatory leadership obtain quality and acceptance of decisions. Third, this study adds to the literature related to the acceptance of change, considered scarce (Di Fabio and Gori, 2016); and shows that acceptance affects PEBR. Fourth, findings confirm that the optimal size of participants in a decision-making group is three-to-seven (Hackman and Vidmar, 1970; Hackman and Hackman, 2002; Larson, 2016); 53% of these groups obtained PEBR (>70%). Additionally, Oyo-Ita et al.' findings (2020) are not confirmed, who stated that the increase in the number of participants directly affects PEBR: 8-to-12 participants (15%) and >13 (23%). Fifth, the results

are close to Heath and Heath' findings (2013), because when going from one to two or three alternatives the PEBR (>70%) was 32% for one alternative and 55% for two-or-three alternatives; and they are opposite to Larson' findings (2016), because the PEBR (>70%) for four-or-more alternatives it was barely 13%. These empirical finding add to this topic scarcely studied in the literature: the generation of alternatives in DMP (Colorni and Tsoukiàs, 2020). Sixth, regarding the number of objectives positively affected by the decisions, results coincide with Siebert and Keeney' findings (2015), because they show that four-to-five decision makers are aware that their decisions positively impacted more than one organizational objective. Therefore, they confirm the need to consider various organizational objectives during the DMP, which also help to enrich the generation of alternatives. This finding fills the gap in the literature related to the scarcity of research that accounts for the identification and use of organizational objectives in DMP (Colorni and Tsoukiàs, 2020; Kunz et al., 2016). Seventh, related to Xia et al.' recommendation (2016) to address new aspects of organizational communication, four out of five levels used by managers to communicate decisions, and explored in this study obtained significantly higher results: written communication, include reasons, communicate with all those affected and include the name of those involved.

5.1. Effectiveness in Business Results

Since, only the acceptance of the decision affects the PEBR, and additionally, there is a great similarity between the acceptance percentages and PEBR. Indeed, while 53.6% of employees fully accepted the three decisions, 52.3% of PEBR was (>70%). The same way, 30.3% of employees partially accepted the decisions, and 30% of PEBR ranged between (50% and 69%). This results not only confirm Dholakia and Bagozzi' findings (2002), but also, they show that high-or-moderate levels of acceptance of decisions predict high-or-moderate PEBR. Therefore, academics and managers must consider that the acceptance of decisions is crucial for the expected PEBR. Furthermore, findings show the importance of the strength of association between the variables that make up DMP model, offering SMLC' managers a meaningful, simple, and easy-to-use decision-making model in real contexts, even in environments of uncertainty like the current one. The lessons learned by the managers and classified in the categories presented above confirm this. This is particularly important for managers and academics in developing countries with growing foreign investment because they respectively need to develop experience with affordable, easy to understand and apply DMP; and publicize the results of their research to enrich DMP in Latin America, to improve PEBR. However, these findings should be viewed with caution and more studies are needed to confirm, if they are kept under conditions different from uncertainty to those generated by COVID-19.

Additionally, it is highlighted that female managers between 31-40 years old obtained the highest PEBR (>70%) in small and large companies; while, in medium-sized company, female managers between 41 and 50 years old were the most prominent. On the other hand, male managers who obtained PEBR (>70%) in small and large companies are between 41-50 years old, while in medium-sized company they are between 21 and 40 years old (Figure 8). This curious finding among managers both genders -by age and company size- is a positive sign of the incursion of women into managerial levels. Consequently, identifying groups more likely to obtain high PEBR provides both business community with the opportunity to implement policies on best DMP practices, and academy, the opportunity to develop studies that confirm and/or deepen the characteristics that make this happen, and the causes that generate it.

Empirically tested DMP model not only serves for companies and managers to monitor their decisions, but also to know if they generate the expected PEBR, inspecting DMP and assigning responsibilities as occurs when other organizational areas are reviewed. In this sense, this study shows managers the importance of learning from their decisions, and make the necessary changes, improving the quality of decisions, capturing learning from DMP, and taking advantage of the experiences of their colleagues; so that they improve it and positively affect the PEBR, and quickly adjust to the new situations generated by COVID-19. Consequently, academics have a fertile field for further quantitative and qualitative research, related to the dimensions of the proven DMP model, because managers continue applying them in real contexts, without being aware that together, they impact on the PEBR.

In summary, findings point out seven ways in which this study adds to a growing, albeit limited, body of literature on the components of DMP and their relationship to PEBR. Furthermore, findings show significantly higher results for specific groups of managers, according to gender, age, and the size of the company in which they work. The empirically tested model is a solid starting point for academics and managers to understand, that the perception of acceptance generates different PEBR for certain groups of managers; and that the variables that make up DMP have increasing positive associations between evaluated decisions.

5.2. Future Research and Limitations

Because these findings cannot be generalized, this study recommends carrying out probabilistic investigations in situations of high uncertainty such as the one mentioned above. Also test in other contexts whether the findings of the proposed relationships are confirmed or not. In addition to the above, I suggest the following future research. First, expand the operationalization of each of these five variables to strengthen the reliability of the instrument. For example, Di Fabio and Gori, (2016) already operationalized the acceptance of change. Second, to develop more empirical research to better understand the role of the five predictor variables, in the face of the different types of results that emerge from DMP (Papadakis et al., 2010). Third, considering that, although due to the pandemic foreign direct investment in Latin America decreased (Cepal, 2020), researchers should examine the determinants and results of the DMP in foreign companies that invest in these countries, and compare them with those of their local counterparts.

6. CONCLUSION

In the context of COVID-19 this article studied the impact on PEBR considering an empirically evaluated DMP model. Consequently,

this article found support for the idea that there is a relationship between DMP and PEBR based on the acceptance of the decision; and also provides a rare examination of the variables involved in DMP, because it incorporates five variables that interact positively each other, in order to test a simple and easy-to-use model in real contexts, such as the one generated by COVID-19, that involves participants, alternatives, objectives, communication and acceptance, showing its impact on PEBR. In addition, this study emphasizes that to better understand the relationship between DMP and PEBR and increase it, it is important to achieve participatory involvement of collaborators in decisions, because they contribute both the quality and the acceptance of the decisions, generating alternatives linked to business objectives and high levels of communication and empathy.

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