Integrating Intuition and Rationality in Strategic Decision-Making Processes: Insights From Product Development in Multinational Corporations

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***Abstract*—In this article, we delve into the strategic decision-making process (SDMP) within the context of new product development (NPD), exploring the nuanced interplay between intuition and rationality as key drivers in product innovation. It investigates how top and middle managers in multinational corporations' subsidiaries in The Netherlands navigate the tension between intuitive and rational decision making to enhance the effectiveness of NPD initiatives. Through 15 semistructured interviews, the research identifies six key influencing factors: personality characteristics, cognitive styles, experience, environmental forces, organizational resource constraints, and the strategic importance of decisions. It reveals two distinct integration patterns, intuition–rationality and rationality–intuition, and three latent dimensions influencing decision making: feeling affirmation, experience-based judgment, and holistic information processing. The findings underscore the critical role of integrating intuition and rationality in improving decision-making quality within NPD, particularly in terms of time efficiency, creativity, and persuasion power. This article significantly contributes to the SDMP literature by demonstrating the complex conditions under which intuition and rationality can be seamlessly integrated to achieve superior outcomes in product development, promoting a holistic approach to decision making that is pivotal for innovation and strategic competitiveness in new product initiatives.**

***Index Terms*—Decision-making effectiveness, intuition–rationality (IR) integration, multinational corporations, product development, strategic decision-making process (SDMP).**

I. Introduction

THE strategic decision-making process (SDMP hereafter) is a nonroutine and long-term planning of decision making, aligning with organizational objectives, ultimately defining a firm's strategy [23], [26]. The SDMP relates to decisions in various scenarios, such as launching and developing new products [42], [51], investments [53], and market entry [38]. Such decisions relate to committing resources and competencies to achieve strategic goals, shaping a firm's course [25].

The SDMP is a rational, or normative, process that involves gathering and analyzing available information, enabling decision makers to choose the most reasonable alternatives [6], [10]. It involves the commitment of the top-management team and addresses novel problems, complexity, or environmental trends [15], [32]. Therefore, understanding how strategic decisions are integrated and crafted by managers remains crucial [29], [30].

Extant research and education focus on analytical approaches and tools to SDMP [14] with the result that rationality is emphasized both in theory and practice [26]. Nonetheless, rational processes may not work in dynamic environments, where firms are required to make fast decisions [1], [2], [29], [30].

There is, indeed, another (necessary) component of SDMP to consider: intuition. Intuition is defined as the rapid, nonconscious recognition of trends, structures, and patterns that support analysis and evaluation [12], [16], [18], [41]. In dynamic environments, using intuition as a heuristic technique may lead to precision [33], adaptability, and resiliency [13] with respect to timing [43] resources [18], [63] and new product development (NPD) [39], [48], [49]. Nonetheless, intuition is not always highly regarded since it eludes accountability and may be perceived as nonrelevant or unreliable [33].

The little empirical research on intuition increasingly views intuitive decision making as a viable and "realistic" SDMP approach [9], [25], [33], [49], [62]. Sadler-Smith and Shefy [62] suggest that enhancing decision strategy requires managers to consider both intuition and rationality, as combining them can improve information exploration and the gathering of details and holistic views simultaneously [39]. Nonetheless, this combination may create cognitive intuition–rationality tensions [12], [17] triggering an alternative use, rather than an integration, of the two [64]. In addition, factors influencing decision-makers' use of SDMP, potential patterns, and the intuition–rationality influence on reaching strategic decisions must be considered [12], [73].

To ground this study further in the NPD debate, it is essential to underscore the critical role that the integration of intuition and rationality plays in navigating the uncertainties and complexities inherent in developing new products. NPD serves as a prime

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example of where strategic decisions can significantly impact a firm's trajectory and market position. This research, therefore, situates itself at the intersection of SDMP and NPD, examining how intuition and rationality contribute to the effectiveness of strategic decisions within this specific context. By focusing on NPD, this study aims to contribute to a deeper understanding of how SDMPs can be optimized to foster innovation, manage risks, and capitalize on new opportunities in rapidly changing markets. Hence, although the integration of intuition and rationality in SDMP has gained increasing attention [1], [2], [12], [39], [46], [62], [63], [64], research gaps still remain for further research to better understand intuition–rationality tensions and integration. In line with [12] and [17], understanding intuition–rationality tension may reveal the complex set of factors causing it. However, it may not be sufficient to solve the tension and make an impact on strategic decisions. Accordingly, once the intuition–rationality tension is triggered, specific integrative patterns may emerge, explaining the sequential enactment of intuition and rationality and their underlying grounding in latent dimensions.

This study examines these integrative modes via 15 semistructured interviews, conducted with top and middle managers of MNCs' subsidiaries in The Netherlands. The study addresses the following research questions: *What factors define the tension between intuition and rationality in SDMP within product-development processes? How and by following which dynamics can intuition and rationality be integrated? To what extent do they influence SDMP effectiveness and what are the consequences for the product-development process?*

Six influencing factors are identified: managers' personality characteristics, cognitive styles, experience, environmental forces, lack of organizational resources, and relevance of taking a strategic decision. Results show that how these influencing factors may hamper the adoption of two distinct patterns: intuition–rationality (IR) and rationality–intuition (RI). Three latent dimensions appear relevant in influencing choices: feeling affirmation, experience-based judgment, and in-depth and holistic information processing. This research demonstrates that both patterns (IR and RI) may have an impact on the effectiveness of the SDMP, also in terms of nonfinancial performance, such as time efficiency, creativity—expressed by the generation of new and useful ideas [68]—and increasing persuasion power. The study makes three contributions to the SDMP literature: First, it extends previous works by showing that intuition and rationality are not mutually exclusive, but integrating them is complex as there are conditions enabling and preventing such integration; second, it shows how different integration modes impact the effectiveness of the SDMP; finally, it suggests that top and middle managers who prefer intuition can significantly benefit by integrating rationality to the development of insights that are both credible and relevant.

This synergy of intuition and rationality—defined as "IR integration mode"—can enhance the decision-making quality in product-development processes. These findings will likely promote the development, at all hierarchical levels, of intuitive capacities together with rational thinking integration, to achieve superior decision-making outcomes.

II. Theoretical Background

Strategy is an essential element for achieving a competitive advantage [55]. Hence, reconciling quick and high-quality strategic decisions is pivotal to remain competitive [5], [72]. The SDMP focuses on how strategic decisions are made and implemented, as well as on the influencing factors determining strategic positioning [26], [29].

Management literature traditionally focused on rational SDMPs [10], [11], [29], [30]. The rational process (also "synoptic" or "comprehensive" as in [10] and [35]) is often used due to its systematic, step-by-step, quantifiable nature. It results from social practices and forms of strategizing, such as organizational interaction and collaboration [11].

Literature describes SDMP either as a sequence of phases, related to situation diagnosis, generation of alternatives, evaluation of alternatives, and decision integration [29] or focus on process dimensions [26]. The academic debate agrees that SDMP consists of several complex activities [12], [26] and synthesizing alternative information [35]. As such, it may result in lengthier strategic decisions due to greater time, efforts, and resources needed [18], [43], which may not be appropriate in dynamic environments, where time is key, firms face internal and external challenges, such as technical and commercial uncertainty and changing competitive scenarios [29], [30], [1], [2], and managers need to make quick and effective decisions for NPD. Since the adaptability of the product-development process is crucial, one solution is, therefore, complementing the traditional (rational) SDMP with intuition [23], [49], [62].

In the context of NPD, the interplay between intuition and rationality becomes especially salient. The NPD process is fraught with uncertainties and requires a balance between creative ideation and rigorous evaluation. Literature increasingly acknowledges the role of intuition in bridging gaps in information and accelerating the decision-making process during the early stages of NPD, where swift action can be crucial to seizing market opportunities and responding to technological advances [28], [60]. Furthermore, the integration of intuition in NPD decision-making processes has been linked to enhanced innovation outcomes, suggesting that the dynamic capabilities required for successful NPD may well rest on the ability to effectively blend intuitive insights with rational analysis [19], [20].

Intuition has gained growing attention [18], [26], [43], [62] despite being intangible and often difficult to define, involving hunches, feelings, and recognizing cues stored in the long-term memory, which are retrieved to support the SDMP [36]. Some researchers describe intuition as a "gut feeling" [33] indicating the confident, instinctive ability to rapidly grasp key issues and understand complex situations [62]. Nonetheless, intuition is neither contrary to rationality nor a random guessing process; it involves a keen sense of upcoming situations [26].

Scholars have described the ways intuition supports the SDMP, especially in dynamic environments [30], [43], daily operations, and product-development processes [19], [20], [28], [60]. It allows decision makers to shorten their SDMP, as intuition requires limited resources and efforts [33], [49], and

quickly find the best alternative, positively affecting a firm's performance [43].

Scholars underline that intuition and rationality, balanced, are complementary and may be simultaneous in the SDMP [12], [62], [63], [73]. Intuitive judgment [40], resulting from accumulated expertise and scenario awareness, becomes key in forming strategic competence. Calabretta et al. [12] also suggest that the integration of intuition within a rational decision-making process results in a positive process and effective NPD decision outcomes: improved task focus results in quicker decisions, reducing mistakes in the subsequent implementation process.

Nevertheless, intuition and rationality are inherently different [27], [45], [70], so tensions emerging from integration may challenge top management [12], [71], especially in dynamic environments [1], [2], [30], [71]. Unstable contexts and reliance on SDMPs comprehensiveness—a characteristic of rationality—in complex product development may hamper organizational performance [8], [29], [35], so intuition needs to be integrated to shorten decision times [43] and is likely to be adopted to face unstable environments, despite environmental uncertainty does not moderate the relationship between the SDMP and its effectiveness [27].

The nature of the situation executives face can also trigger tensions. In crisis situations, managers decide based on real-time information and with faster processes (intuition) instead of using lengthier in-depth analysis and they react differently toward strategic decisions based on the importance placed on them [71]. For crucial decisions with a greater impact on the firm's success, a rational approach is usually adopted, collecting and analyzing relevant information and carrying out cost-benefit analyses [71], [73].

Cognitive styles and contradictory perspectives may influence actors toward rational or intuitive processes. Some decision makers are not comfortable with cause–effect logic and unilaterally reject the use of intuition. Managers using their intuition to make cognitive leaps based on objective information are also able to come up with better decisions than other managers; in contrast, those who take time to seek out socially acceptable decisions reach the fewest decisions and have the lowest perceived effectiveness [41].

Furthermore, the capabilities that enable firms to excel and stay competitive in the market, such as the acquisition of multiple resources [27], influence the way managers opt for integrating intuition into the SDMP. High-performance firms can follow a more rational SDMP even in dynamic environments, while those with limited resources need an intuition-based approach [8].

A final point relates to organizational hierarchy. Middle/product managers use rationality to obtain new important information from inside and outside sources [71]. Senior managers do not appear to use more complex and coherent decision schemas [16]. Rather, it is the content, not the structure of their cognitive maps, that is different. Intuition goes beyond rational data, using experiences to cut through to a situation's essence, making sense of it, and testing its validity: the likelihood of using intuition increases with seniority levels and may be reinforced by seniority through a group, whereas the use of a rational approach may be reinforced by employees with lower hierarchy through hard data collection and processing [62].

These studies highlight three main limitations. First, they partially deal with the factors that influence the managers' choices of using intuitive/rational SDMP but do not clarify the connection between those factors and IR tension. Second, the overall picture is fragmented and shows opposite—and apparently irreconcilable—results. Third, there is no clear explanation of the impact on organizational performance when it comes to combining intuition and rationality in the SDMP of product-development processes.

III. Methodology

A. Research Context and Design

This study aims to analyze how strategic decision makers balance and integrate intuition and rationality, eventually taking on how to apply both relevant strategic decisions simultaneously. More specifically, it looks at the elasticity of managerial decisions, the mechanism that may allow for simultaneously stretching intuition while maintaining rationality—and vice-versa—to understand how decisional choices expand or contract. To do so, the study uses an inductive approach. The inductive approach provides a great insightful theoretical description, reflecting the organizational phenomena and observing how informants experience the phenomenon of interest [44]; the main concepts, themes, and dimensions, including the relational dynamics among those concepts, are analyzed through grounded theory [34]. A shared unit of analysis is used to develop a representation of the SDMP, highlighting differences and commonalities within the decision-makers' discursive construction of their decision processes, as well as the perceived consequences of their SDMP, within their daily product-development context. Our study's focus on subsidiaries within the food industry inherently involves various aspects of NPD. The food processing firms among our subjects are engaged in activities that fall within several of Blanchfield's [74] definitions, such as products made by novel processes, with novel ingredients, or involving changes in processing methods or conditions. Similarly, the subsidiary focused on food catering services, while not directly involved in manufacturing, plays a role in product development through the customization and presentation of food products, which can be considered a form of process and service innovation.

Furthermore, the inclusion of managers from different functional areas and levels within these subsidiaries was deliberate. This approach was aimed at capturing a holistic view of the SDMP, recognizing that decisions related to product development often require input from across the organization, including areas, such as operations, marketing, quality assurance, and more. The diversity of perspectives is essential for understanding how intuition and rationality are integrated across different stages and aspects of product development from initial concept through to market launch and beyond. The findings from our interviews reflect the complex and multifaceted nature of NPD within the food industry, illustrating how strategic decisions—whether directly related to the development of new products or the improvement of existing ones—are influenced by a blend of

intuitive and rational decision-making processes. These insights are consistent with the broader literature on NPD management, as discussed by Ilori et al. [75], which highlights the importance of managing NPD through various strategies and practices to enhance innovation and competitiveness.

Therefore, the relationship between SDMP and NPD in our study is grounded in a comprehensive understanding of product development that encompasses both product and process innovations, as well as the strategic decisions that guide these activities within multinational corporations' subsidiaries. This approach allows us to contribute valuable insights into the integration of intuition and rationality in strategic decision making within the context of NPD in the food industry.

B. Research Sample and Data Collection

The data were collected from a heterogeneous group of decision makers being exposed to the product-development process. Following empirical works [17] on strategizing and strategic decision making, both middle and top managers were included. Total 15 semistructured interviews were conducted with top and middle managers from MNCs' subsidiaries in The Netherlands operating in the food industry and in different functions, ranging from operations to HR, commercial and sales, or production. In this context, both top management and middle management are responsible for strategic decision making [7]. These subsidiaries pursue their own independent strategies while complying with the strategic objectives of headquarters. Accordingly, their strategies are considered as a specific field [7] and allow for the collection of data as to SDMP mechanisms. The subsidiaries were purposively sampled based on their commitment to maximize the firms' adaptability and resiliency of their product-development processes. Given the depth and specificity of the topics covered in the semistructured interviews, and the richness and complexity of the data from each interview, which provided in-depth insights, theoretical saturation was achieved within this sample size [37]. Semistructured interviews were used, as they are particularly suitable for exploring the views of a person about a specific topic, in order to obtain in-depth information for the research [56]. Tables I and II summarize the characteristics of the sample and informants.

Semistructured interviews were conducted with informants currently working in the chosen subsidiaries and involved in the SDMP, identified in collaboration with the subsidiaries. To ensure no preselection bias, additional interviewees were selected following the "snowball method" [58]. The interview protocol was shared with participants beforehand to outline the study's scope and the topics to be discussed. The semistructured format allowed interviewees the flexibility to express their experiences and thoughts, and facilitated reflection on short- and midterm past events. The protocol specifically centered on strategic decisions made within the prior 12 months, following Eisenhardt and Graebner's article [24]. This was crucial as recalling such recent past events might demand time and effort, potentially limiting the depth of responses from participants [69]. Each interview started by gathering information on the profile of the interviewee, his/her background and career path, as well as his/her formal role and the activities the role entails. Each manager was also asked to provide an example of processes that required strategic decision making. On average, interviews, which lasted 1 h, were recorded and then transcribed. Informant bias was minimized by using formal interview guides [61]. Interviewees could use secondary data in order to recall elements related to their decisions and related to SDMPs.

C. Coding Process: IR Tension

Theory development proceeded through coding analysis, categorizing the concepts and comparing the data during each stage of analysis. Open coding underlined the recurrent themes and refined the resulting categories [67]. The analysis proceeded through a qualitative and inductive research approach [67]. Data were first transcribed and coded by one of the authors, with the others constantly verifying its accuracy. Afterward, the team discussed and resolved points of disagreement. Then, the analysis focused on identifying integration modes between intuition and rationality while balancing these two dimensions. Through an initial interview analysis, first-order categories were defined [34]. Then, similarities and differences among those categories were observed. Categories were then grouped into second-order themes. Further investigation into the emergent second-order themes highlighted the three "aggregate dimensions": managerial elasticity, influencing conditions for selecting a specific integration mode, and the effectiveness of decision making following the integration of intuition and rationality (see Tables III–V).

The highlighted data structure represents an overview of the analysis procedure from raw data to categories and meaningful themes [34]. Analyzing the data structure assessed its alignment with the existing literature and its connection to new concepts and theories.

IV. Findings

To answer the research questions, the SDMP and the balancing of two main modes of integration between intuition and rationality were analyzed: intuition tends toward rationality when the decision is controlled by intuition and rationality tends toward intuition when the response is analytically controlled. In making a decision, managers choose to start from one mode or the other. Constituting steps for each integration mode were formulated, describing how the application of intuition and rationality occurs simultaneously, converging and diverging in the context of relevant strategic decisions. Finally, the perceived consequences of the SDMP were described.

Within the SDMP related to product-development processes, empirical relevance of the construct elasticity of managerial decisions, allowing for simultaneously increasing intuition while maintaining rationality, and vice-versa, was found. It was also clarified how individuals create decisional elasticity depending on specific personal and situational factors. The expansion and contraction of decisions mirror managerial nature and are influenced by social dynamics. Understanding elasticity sheds light on the characteristics used to define the effectiveness of SDMP beyond financial considerations, for example, in terms of time

TABLE I
BACKGROUNDS OF THE INFORMANTS OF EACH CASE

Subsidiary	Interviews	Informant Background				
			Time in the firm	Education	Age (y/o)	Top/ Middle
Subsidiary 1	6 interviews	(1) International Executive Director	1y	MBA	54	Top
		(2) Product Manager	2y	MBO Kitchen and Service	42	Middle
		(3) Commercial and Sales Director	1y 6m	Bakery and Management	46	Top
		(4) Operational Director	6m	Business	54	Middle
		(5) HR Director	6w	Psychology	49	Middle
		(6) Quality Manager	4y	QESH course	39	Middle
Subsidiary 2	1 interview	(1) Financial Director	12y	MSc International Finance	45	Top
Subsidiary 3	1 interview	(1) Plant Manager	5y	MSc Communication and Politics	47	Top
Subsidiary 4	5 interviews	(1) Group Leader Biotransformation	9y 2m	MSc in Biochemical Process Engineering and PhD in Microbiology	39	Middle
		(2) Factory HR Manager	20y	Communication	48	Middle
		(3) Production Manager	9y	BSc Chemical Engineering, MBA Finance	32	Middle
		(4) Formulation Manager	10y	BSc Food Science, MSc Food Engineering	38	Middle
		(5) QA Manager	20y	BSc Food Micro Technology and Master BBA in Education	44	Middle
Subsidiary 5	2 interviews	(1) Department Manager	10y	BSc Food Technology	33	Middle
		(2) Assistant Vice President	11y	Food Technology, Logistic, and supply chain management	33	Top

TABLE II
SUBSIDIARIES BACKGROUND AND SDMP CHARACTERISTICS

Subsidiary	Scope of Activities	# Facilities/assets of MNCs	SDMP Contents
Subsidiary 1	Food Catering Service	175 commercial catering locations in 3 countries	Corporate image development, increase sales and revenue, leverage potential contract , and customer satisfaction
Subsidiary 2	Food Processing	12 production facilities in 10 countries	Increase sales and revenue, strengthen customer relationships
Subsidiary 3	Food Processing	35 production facilities in 10 countries	Invest new machines to improve productivity and product quality
Subsidiary 4	Food Processing	413 production facilities in 85 countries	Product development and innovation, Improve productivity and product quality
Subsidiary 5	Food Processing	38 production facilities in 13 countries	Invest new machines to increase production capability, Set standards for new production plant

TABLE III
DATA STRUCTURE REGARDING THE MANAGERIAL ELASTICITY DURING SDMP ACROSS THE CASES

Aggregate Dimension	Second-order themes	First-order categories
Managerial Decisional Elasticity	Feeling affirmation (IR)	Search for data to support gut feeling and hunch
	Experience-based judgment (IR)	Integrate and adapt experiences to new situations
		Patterns recognition and learning from past experiences
		Experience as expertise
	In-depth and holistic information processing (RI)	Information processing based on the combination of in-depth and holistic view approaches

TABLE IV
DATA STRUCTURE REGARDING THE FACTORS CAUSING THE IR TENSION DURING SDMP ACROSS THE CASES

Aggregate dimension	Second-order themes	First-order categories
Factors causing IR tension	Personality characteristics of managers	Risk aversion
		Risk taking
		Passion
		Propensity for a specific mode of information processing
	Cognitive styles	
	Experience	
	Environmental forces	Intuition is normatively associated with bad thinking
		Hierarchical influence
		Intuition does not gain internal legitimacy very easily
	Relevance of the strategic decision	Decisions with a high degree of importance
	Insufficient organizational resources	Insufficient time
		Uncertain times and tight schedule force managers to find a balance between intuition and rationality
		Others' opinions and experience help in making decisions when the problem is complex and data are missing

TABLE V
DATA STRUCTURE REGARDING THE RELATIONSHIP BETWEEN INTEGRATIVE INTUITION AND RATIONALITY PROCESS AND STRATEGIC DECISION EFFECTIVENESS ACROSS THE CASES

Aggregate dimension	Second-order themes	First-order categories
Effectiveness of strategic decision making following the integration of intuition and rationality	Improvement of nonfinancial performance	Time efficiency
		Creativity
		Power of persuasion

efficiency, creativity as production of new ideas, and increased power of persuasion.

In this section, differences in decision-making processes are documented, outlining steps for each mentioned integration mode. The discursive construction of each mode is highlighted, dependent on managers' perceptions of themselves and their environment. Finally, it observes how managers navigate consequences tied to changes in decisional choices.

A. Two Integration Modes Between Intuition and Rationality

1) IR: Intuition Leads to Secondary Usage of Rationality: Feeling affirmation: Managers often analyze and theorize about their decision-making behavior, following their efforts to comprehend others' actions. They show how their decisions involve rapid, intuitive judgments, with courses of action coming to mind with little or no conscious effort.

> *Then, of course, you have to change your plan and start looking for other options, for what can be really done. But mainly what triggers me is always intuition. I just say I don't know if it is not going to be right, I just feel it*. (Subsidiary 2, Financial Director)

> *When I sense something doesn't feel right, then I search for extra information or consult with experts to answer the fact.* (Subsidiary 4, QA Manager)

Conversely, some managers prefer to start with data.

> *For me, it is easier to use data because I'm more into results. I'm not really about gut feeling, sometimes I know it is there, but I also try to explain it with data. I know some of my automated answers say 'OK, it doesn't feel right, nothing I can do with that.' I need to see something. So, for me, it is mainly data and of course, sometimes I feel something, but I try to make sure that there is some data behind it, to explain it*. (Subsidiary 3, Plant Manager)

In order to present the outcomes of their SDMP, managers feel compelled to gather extra data to validate intuition-driven actions.

> *As mentioned above, in my opinion, you need to have looked at all the options with the available information and timing. Also, you have to anticipate what impact the strategy will have on the firm and people; the bigger the impact, the surer I would want to be on the decision. For example, calculating the risk if the strategy turns out to be wrong. The bigger the risk, the more data I would want to gather*. (Subsidiary 4, Group Leader Biotransformation)

Managers also believe that the data can help make their decisions more credible, further backing up their positions and views.

> *So, when the data says no, then you want to say yes with your intuition. You also need the data, well if the data says no, you want to show why you are doing this. So, you always have to understand, why you make this decision, to explain it to your team.* (Subsidiary 1, Operational Director)

Finally, in other cases, belief-based reasoning appears as a way to apply conscious analytic reasoning to overcome decision-making difficulties.

> *We share only one big part about our decision, we want to become the best food catering business in The Netherlands. And for that our decision and including my decision. At the moment the best decision I have made was to not sell any more products without margin and with high food cost if they are not profitable for the firm. And now we want to try to sell a little bit less, but with good profitability*. (Subsidiary 1, Product Manager)

Experience-based judgment: Additional conflict may arise between intuition acquired from experience and the application of conscious reasoning after acquiring initial data. In this instance, the use of data and rationality requires to access long-term memory systems where relevant experiences are accumulated. Many factors affect the likelihood of such memories, but personality characteristics are certainly pivotal.

> *The problems for me are so obvious. I can call it gut feeling; I call it more experience. Many times, I can say that I'm acting based on a feeling. So, I'm not a normal finance person. I usually have a feeling, then I go to the data trying to back up my feeling*. (Subsidiary 2, Financial Director)

When decisions are complex and new in nature, experienced managers tend to rely on implicit processing drawing into their long-term memory for relevant details and past experiences.

> *In my case, the strategic decision […] was based on consumer research showing that the trend of fermentation was getting more global awareness (e.g., via new competitor product launches, social-media searches, consumer research, etc.). Based on these findings and the expertise on fermentation, I developed the strategy to explore the potential in more detail*. (Subsidiary 4, Group Leader Biotransformation)

In the majority of the observations, managers themselves found this normal and effective.

> *I think intuition helps. When people encounter changes, they don't use rationality but tend to use their emotions and feeling. So, we can't always use just rationality, we've got to listen more, use experiences and gut feeling to think about the impact and future of the firm. In terms of rationality, we've got to plan and analyze the situation together before we decide to inform the employees about this change. So, I think both approaches support one another like during a meeting, the input can come from gut feeling or feedback from others, then combine with the plan that already exists, in order to find the right timing to execute with the strategic approach that has the least possible negative impact on the firm*. (Subsidiary 4, Production Manager)

2) RI: Rationality Is Backed Up by the Secondary Usage of Intuition:

a) In-depth and holistic information processing: In assessing market opportunities or the execution of strategies, managers appear to rely on data acquisition and analytical information processing.

> *[…] we're working on the big data. The main information system is 'Kasus;' it analyzes what is the consumer behavior, what are the slow/fast movers, what is the revenue over time. Kasus gives a lot of information about people, ticket prices, the revenue of the day/hour, assortment, fast movers and slow movers. All the information is important for me to manage the marketing department. So, I can create the right assortment at the right price for the right place. Every day we pull the data out and analyze it. Then we can benchmark it against the market*. (Subsidiary 1, Commercial and Sales Director)

Hence, managers, to get approvals, need to include formal comparisons and detailed descriptions, as well as information on the essential functions of management. In this context, the analytical approach seems to prevail as they turn their focus to analyzing and planning, trying not to deviate from a linear approach (finding and solving unexpected flaws in the original idea) and exploiting current opportunities. In such context, intuition is found to be less relevant, but it becomes more evident

and works as complementary (but secondary) in seeking new opportunities, such as adapting ideas gathered across departments, solving unusual problems, and finding solutions. Managers may contextualize the data gathered and provide sense to the primary objectives of the organization.

> *I use both intuition and rationality. It's true that data provides us information, but it can't be finalized if we don't consider or pull out just the crucial information. At the same time, I've got to sense 'Is this decision aligned with the organization's goals or not?,' 'Is this decision based on one perspective or not/should I look broader?' I don't know how to call it, maybe 'sense check.' It could happen that even when a lot of information is provided, it doesn't make any sense to me. Then, I ask again 'Why does the data say this?,' 'Why is it different from the previous one?,' 'What did you do last time?*' (Subsidiary 4, QA Manager)

The above sentences emphasize how intuition allows for the rapid contextualization of problems by relying on prior knowledge, whereas the analysis and collection of data appear to be abstract and decontextualized. Additionally, the data analysis can lead to broader solutions than intuitive reasoning, which may be inhibitory. Intuition and access to prior knowledge give managers the ability to engage in hypothetical thought via supposition and mental simulations about alternatives' feasibility.

> *We've got to choose the best options that fit our organization and our people so the data is needed in this case. Because it's a big organization, we can't react right away, but we've got to think carefully about the actions that we decided to take e.g., 'Is it feasible to achieve the goal? 'or 'What is the impact on other people in the organization?*' (Subsidiary 4, QA Manager)

> *For example, the operational teams have to provide us the information about the actual problems that occur and how they cope with such problems. Then, we discuss and share opinions to find common ground that is favorable to everyone in the firm. So, every time we've got an issue, the data has to be involved, say 80%. Unless there is no data support, we normally interview people to find the link to that issue*. (Subsidiary 4, QA Manager)

b) Managerial decisional elasticity: The data show that managers place no limits to having multiple views on the potential decision but these multiple perspectives are dynamic and used to manage conflicting and contrasting views.

> *Sometimes, it is better to use the rationality process; if we achieve our target in one year maybe I can take the risk of using intuition. You must be flexible, adapting your style to the position of the firm*. (Subsidiary 1, International Executive Director)

Specifically, some patterns for reconciling conflicting views about the decision to be made emerge. Reconciling conflicting views occurs either congruently (i.e., Financial Director, Subsidiary 2) or incongruently as compared with the manager's initial ideological stance (i.e., International Executive Director, Subsidiary 1).

> *Sometimes it is not always clear. It's clear for me, but sometimes the firm has many goals it wants to reach. They can sometimes contradict one other. Imagine, if you want to get them all, it's impossible because of the conflicting nature. But then, we do what we feel*. (Subsidiary 2, Financial Director)

> *The rational approach is comfortable place; data is black and white. Intuition is the panorama when the rational approach isn't perfect, when you understand that maybe it is the correct decision to continue this way*. (Subsidiary 1, International Executive Director)

B. Conditions Influencing Managerial Decisional Elasticity

The previous section shows how intuition and rationality can be sequentially integrated and the role of managerial decisional elasticity in deciding between the two options—IR or RI. It is then relevant to understand how managers perceive their organization and to what extent their understanding shapes the SDMP since managerial decisional elasticity may partially depend on a number of factors.

1) Personality Characteristics: Manager risk perception is one of the personality characteristics that have the greatest impact on choosing one of the integration modes—IR or RI. Managers define themselves either as risk averse or risk takers and, based on this emerging categorization, their decisions are linked to different modes of processing information.

A number of interviewees demonstrated a propensity for sticking to both data collection methods and accepted ways of thinking, as there may be a level of risk associated with doing things differently when based on intuition.

> *Intuition is good but there is a big risk. That's why we use rationality more on strategic decision-making*. (Subsidiary 1, Product Manager)

> *For me, it is difficult to rely on intuition or feeling. So, it may be a barrier for me.* (Subsidiary 3, Plant Manager)

> *To be honest, I'm a more rational decision-maker. I like to make decisions based on data. Also because you have to be prepared, responsible for your decision*. (Subsidiary 1, Operational Director)

Conversely, some managers think that risk taking is an important element for intuitive decision making.

> *When you rely on data, there is no risk-taking anymore. When you don't take risks, the firm does not grow.* (Subsidiary 1, Operational Director)

Passion is also an important personality trait for managers, which appears crucial to understanding if others are committed to the firm.

> *For me, with intuition, there comes also a certain passion for the direction to take. And you need to have passion or a strong belief in order to get people committed to the new strategy or direction*. (Subsidiary 4, Group Leader Biotransformation)

Our data also show that some managers believe that their propensity for a specific type of information processing has an influence on the selection mode they choose.

> *The use of intuition or rationality depends a bit on people. Some find it easier to change the way of working based on facts (rational), others are more inclined to follow a strong person who they feel they can trust (intuition)*. (Subsidiary 4, Group Leader Biotransformation)

2) Cognitive Styles: The context significantly influences managers' mental models. Managers arrange histories of organizational behaviors, competitors, and customers into a set of current beliefs, and in turn, the structure of their beliefs shapes the manager's mental model, driven by the individual abilities, goals, and aspirations. Accordingly, the conceptual

model explicitly accounts for individual differences stemming from managers' cognitive abilities.

> *If I make a strategic plan for the coming three years for sales, I know exactly who my competitors are on the basis of my experiences; I have worked with them. They were my clients in the past. I know a little bit what their strengths and weaknesses are, then I can make a SWOT analysis of the firm which will be used for making the strategy for the market*. (Subsidiary 1, Commercial and Sales Director)

Evidence also indicates a shift from individual to group-based strategic decision making. Specifically, managers tend to use "group" decision rules, supported by their own mental response models, instead of relying on "IF–THEN" decision rules.

> *In the beginning, it was more difficult. Now it's better. You have to make sure that you have your team in place […]. Make sure people talk with each other and work together. So, after that, it is easier to make decisions*. (Subsidiary 1, Commercial and Sales Director)

> *You need your team to help. The biggest mistake in a lot of countries is that people are not involved, don't know what direction you're going. So, you've to be clear, transparent with the direction you're going and what you want to achieve. Then, involve people, make them responsible and accountable for what they've got to do. Investigating my internal clients is also a job for my people who work for me, so, I teach my team to investigate what the objectives are for the internal clients so that they can make a business plan by themselves*. (Subsidiary 1, Operational Director)

Managers often see intuition as a composite phenomenon that incorporates expertise, intelligence, and emotional states.

> *Sometimes, I think intuition is also an emotion. […] You can also be in new situations, but you can always have some kind of déjà vu*. (Subsidiary 2, Financial Director)

> *I think intuition helps with the mental models of people. When people encounter changes, they don't use rationality but tend to use their emotions and feeling. So, we can't always just use rationality; we've got to listen more to experiences and gut feelings to think about the impact and future of the firm*. (Subsidiary 4, Production Manager)

> *I've got managers with high EQ [Emotional Quotient] and low IQ [Intelligence Quotient], but also the other way around. That makes a big difference in decision-making because the person with high EQ and low IQ is more open to discussion. Then I can address [the situation] and think. But sometimes it does not end with a good decision, and I lack the knowledge to finalize the decision. The manager with low EQ and high IQ makes hinders my ability to speak, address [the situation], or make decisions. Sometimes, this does not lead to very good decisions because some input is a one-sided decision*. (Subsidiary 1, Quality Manager)

3) Experience: Some managers see intuition as a pattern recognition exercise, requiring the use of judgment in specific situations.

> *During my previous job in that firm, we had exactly that same thing and then I handled that. So, I'd have done this and that. People could say that is intuition, but actually, it could be your past life records. You're just pulling that experience out of it. It could be, but sometimes when I get that hunch, I've got to look a little bit more carefully. I really don't know*. (Subsidiary 2, Financial Director)

> *Intuition builds on from my past experiences*. (Subsidiary 2, Financial Director)

The ability to move quickly is also seen as dependent on the capacity to recognize situations already faced in the past.

> *I used my experience, of course, as well as things that I've worked on in the earlier days. I use them again. I think it is what most human beings do. And, of course, something had to be adapted. And I've been working for 20 years now, so I've developed typical skills and know what works and, if it doesn't work, what I should adjust*. (Subsidiary 3, Plant Manager)

So, intuition is seen as a managerial ability requiring tapping into stored knowledge.

> *For the strategic decision-making process in general, I don't think things can be improved or can be worse. It is something personal, the thing that suits you. It's not something like a trick. It's something that is natural for me and is based on experience*. (Subsidiary 3, Plant Manager)

4) Environmental Forces: The environment has a normative impact on managers, who may change their behavior accordingly.

> *When I have to work with the team, I have to be more rational* (Subsidiary 1, Product Manager)

In other cases, managers may realize their intuition-based solutions and use data to prove the validity of their initial ideas.

> *To have data support on what I think, I use facts. I think pretty much all the people are using both intuition and rationality. But it could be more like most of the people do 80/20 or 60/40; for me, it's probably 50/50. And the outcomes are mainly on the positive side*. (Subsidiary 2, Financial Director)

Hierarchical influence is another important factor.

> *If the boss starts with a point of view at the beginning of the meeting, it's very easy to convince the team. They may be 'frozen' in expressing their decisions, ideas, or points of view*. (Subsidiary 1, International Executive Director)

Finally, the organizational environment does not allow intuition to become internally legitimated.

> *Internally, people don't understand decisions made following intuition, […] what is the motivation to do this? If it is based on rationality, it is easier to share and explain to colleagues. Some people maybe don't understand your intuition approach. If you have a positive oriented team maybe it easier to explain this kind of decision, but for ordinary employees and second-level managers, sometimes it's difficult because people are conservative. And they prefer only what they consider safe, data, rationality*. (Subsidiary 1, International Executive Director)

5) Insufficient Organizational Resources: Sometimes, it appears that the use of intuition is linked to an external need to make fast decisions or driven by limitations imposed by the lack of data, placing pressure on a manager's cognitive capability to quickly handle information. However, despite the needs dictated by uncertain and dynamic situations [2], rationality becomes a necessity in many strategic management decisions.

> *Collecting data is indeed important, but it takes a lot of time which doesn't match our tight timeframe. So, we've got to think more about the efficient and less time-consuming ways of gathering data*. (Subsidiary 5, Department Manager)

Indeed, in difficult conditions, managers try to include both rationality and intuition as mutually reinforcing components in their SDMP.

> *The speed has increased. I come from another generation; I did many things in the past. What I see around me is that good businesspeople in a big firm work a lot with intuition and rationality. They want to check everything. At some time, I'm doing and then I know also the result: rationality. To make things simpler. This's also my style; rationality and intuition based on my experience are very important because the computer isn't thinking for you all the time. Intuition makes the difference, not data; data is only information. It's what you do with the data that matters the most*. (Subsidiary 1, Commercial and Sales Director)

Complex problems, the volatility of relevant information, and insufficient knowledge necessitate seeking help from others to interpret facts and figures, or to compensate for missing data.

> *Due to the instability of the knowledge, we get information from the team as soon as we can find the expertise and experience. So, this helps us to find a solution based on facts and rationality*. (Subsidiary 5, Department Manager)

> *Different departments are involved in decision-making. We compare the information from many suppliers, then decide together which supplier is the best choice. The reason for choosing this process is because many people from different departments can provide broader knowledge, information, and also opinions*. (Subsidiary 5, Assistant Vice President)

6) Relevance of the Strategic Decision: The relevance of specific strategic decisions is another key factor in the SDMP.

> *Especially in production operations, it is all about results and data. In my case, everybody wants to know all about the money, what is the payback time, what is the result. Results, ROI, data, and the figures are very important in the operation factory like where we are*. (Subsidiary 3, Plant Manager)

> *Big and small projects need different approaches. If the project is related to the future of the firm, then it needs high investment involving a lot of people. It needs time. In this firm, we've got more than 770 employees, and my responsibility is obviously to the firm and those people too. Sometimes it better to use the rationality process*. (Subsidiary 1, International Executive Director)

Using rationality seems to be the norm, with a few exceptions. Managers seem to associate the use of intuition with bad ideas, requiring them to compensate using data and a rational approach. Hence, managers tend to consider the analytical processing of data as a necessary step to finding the right answer.

> *The bigger the risk, the more data I would want to gather. Furthermore, it is essential to keep track that the chosen strategy is bringing the desired effect. If early indicators show it is not working, you need to re-evaluate and make changes early on, since it is still manageable to change. […] I do believe you need to have solid data to make a good* decision. (Subsidiary 4, Group Leader Biotransformation)

C. Effectiveness of Decision Making Following the Integration of Intuition and Rationality

The previous section focused on the influencing factors affecting the selection of the two modes of integration between intuition and rationality (IR and RI). The attention now turns to the outcomes of such integration.

1) Creativity: Creativity in SDPM can result from collaboration and specific group characteristics and diversity, leading to novel idea generation. Evidence shows that the SDMP results from a distributed cognitive process, with managers surveying the various people involved in the decision. Managers believe that gathering others' opinions and ideas is needed ahead of decision making.

> *Teamwork allows us to gain different perspectives and knowledge from people from many functions. We listen to each other, then validate the obtained information together by expressing our opinions and ideas*. (Subsidiary 4, QA Manager)

Team diversity substantially influences creativity and allows reflections on novel, creative ideas and solutions. Therefore, gathering and discussing the ideas and opinions of others sometimes leads to creative solutions.

> I think diversity is the key here. In the team, you should have as much diversity as possible. This will trigger the discussion and the challenge; then you start discussing it and actually notice the many points that you haven't been thinking of. And I think what is the most important is open-mindedness; people have an ego, they don't want to say when they make mistakes. People have just to be open, listen more and talk less. Then, gathering information together making sure that different people are in a team. (Subsidiary 2, Financial Director)

2) Power of Persuasion: During meetings or while collaborating with peers, managers feel that they need to convince their employees about a decision they are going to make, mixing the outcomes from their intuition and experience with supporting facts. Then, instead of focusing on the content of their argument, they try to tailor it to facts, to prove to others the soundness of ideas. Managers seem aware of the power of facts and their persuasion ability. They look to the integration mode to convince others about the validity of their solutions.

> *Of course, you have to change your plan to start looking for other options […]; what triggers me is always intuition […]. But you can't convince anybody before you derive facts from research and data*. (Subsidiary 2, Financial Director)

> *By showing the hard data from the consumer research and the passion we have for the project, the strategy got approved. For me […] you need to have passion or strong beliefs in order to get people committed to the new strategy or direction. So, it was both showing good data, and pitching the idea in a convincing way that made it possible. The outcome so far of the new direction we have taken has led to the commitment of 3 business units. This is considered a success*. (Subsidiary 4, Group Leader Biotransformation)

3) Time Efficiency: The temporal order of intuition and rationality in decision-making speed, and the resulting integration mode, is crucial and potentially altering SDMP outcomes.

> *This indeed depends on what strategy you would be implementing and on time pressure. I do believe you need to have solid data to make a good decision, but in cases where there is not enough time to get all data verified, you have to make the decision based on your own experience and advice from people you trust*. (Subsidiary 4, Group Leader Biotransformation)

Using intuition in the SDMP implies quick judgment. Managers do this unconsciously, mentally assessing information and observations against the importance of the decision to make. They search for patterns to use, comparing them with past

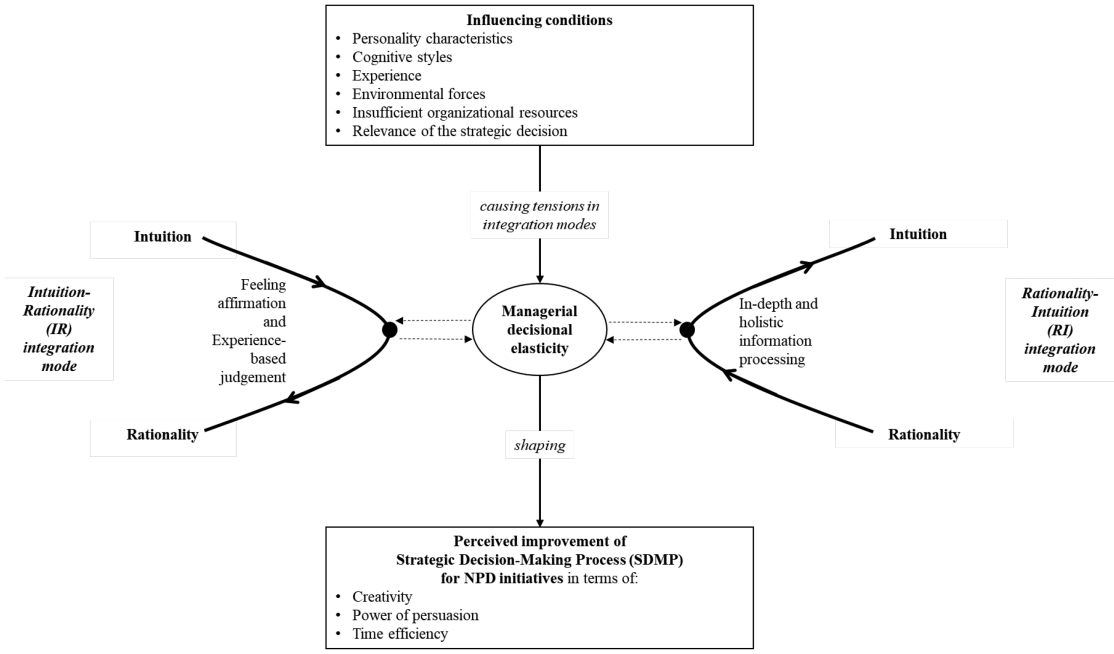

Fig. 1. Interpretive framework.

experiences. These associations enable supporting an idea or solution and to rule out alternatives. The resulting process of integrating intuition and rationality allows managers to make fast decisions.

> *Time is always the factor […] You need to have intuition and rationality. I think it helps to overcome those difficulties [time, incorrect information].* (Subsidiary 1, HR Director)

> *We need it just-in-time not delayed (e.g., after a month). For this reason, we've got to improve the quality of our system, the efficiency and the timing of the reporting. Sometimes when the decision-making process is not really perfect - perhaps because we don't have a useful information system to make the correct decision - we'd take risks as the market is moving all day and then we move from a rational approach to intuition.* (Subsidiary 1, International Executive Director)

> *The process should be faster and based on experiences and data that we have in order to pick up on the trends at the right time.* (Subsidiary 4, Formulation Manager)

These results are relevant in situations where there is insufficient time for thinking and analysis since, especially for important strategic decisions, the rational approach, the conscious acquisition of data, and the continuous search for confirmation from trusted experts make the process too long.

V. Discussion

A. Theoretical Contributions

1) Integrating Intuition and Rationality: The empirical analysis shows that the SDMP is inherently sequential and has two possible emerging patterns: in the first, intuition comes first and is then backed up by a rational process of reflective thinking (IR pattern); in the second, rationality precedes the use of heuristics to recognize specific patterns (RI pattern), mainly relying on the previous experience. Three elements characterize the integration of intuition and rationality: feeling affirmation, experience-based judgment, and in-depth and holistic information processing. Managerial decisional elasticity takes place behind the scenes in this integration [64]. Fig. 1 depicts our interpretative framework, showcasing how managerial decisional elasticity, influenced by specific conditions, interacts with two distinct integration modes to enhance the SDMP in the NPD context.

This research confirms that intuition is important for decision making, serving as a conduit to increase the awareness of upcoming situations [26], their key characteristics, and underlying issues [62]. Intuition facilitates the SDMP leveraging on "gut feelings" from long-term memory [36].

This work also interprets the bidirectional sequential integration of intuition and rationality and understands how this shapes top and middle managers' decision making. Extant literature argues that intuition and rationality are complements and can take place simultaneously [12], [40], [62], [63]; this work rather looks at bidirectional and sequential enactment of intuition and rationality. The two sequential patterns—IR and RI—allow managers to better balance their decisions and guarantee a fit with the SDMP [9].

Looking at the patterns underlying IR, feeling affirmation confirms that the relationship between intuition and rationality reflects a "validation sequence" in which executives use rational analysis to ensure that their gut feeling is right [62]. Experience-based judgment becomes crucial when considering the cognitive-experiential self-theory [54], suggesting a sequential interaction between the rapid, experiential system and the rational, conscious reasoning in information processing. Initial reactions to experimental systems are emotional and fast, but if deemed rationally inappropriate, the rational system cancels or adjusts the response. Incubation sequence is another type of validation judgment: a quick reaction through recalling and

recognizing past experiences in which the validation judgment is reached through rational analysis [62]. In terms of reliance on intuition and automated answers, this research confirms that managers acquire initial information to be able to act intuitively in an automatic, rapid, and effective manner [57], however aware of the risk of introducing personal biases and errors [47].

In-depth and holistic information processing emerges in relation to the RI pattern. Managers use both rationality and intuition for processing information by first exploring extensive analytical data, and then by looking at the holistic picture. In a dynamic environment, managers do not need to carry out intensive data collection to make strategic decisions but may rely on crucial information gathered from the holistic picture [18]. For an effective SDMP, managers must understand crucial details while maintaining a broad view [40], combining analytics and intuition in information processing.

Finally, results show that the decision toward sequential patterns is not straightforward, and elasticity plays a role, enriching the process and allowing managers to balance conflicting and contrasting views on decisions.

2) Role of Influencing Conditions: This research also investigates the conditions that influence the adoption of sequential integration modes. Tensions can emerge since controversial issues are found in the two modes [12], [27], [45], [71], resulting in a rejection of the integrative process.

The amount of effort an individual puts into information processing is shown as a function of personality characteristics. Intuition involves automatic processing, lacking conscious control, while rationality involves controlled processing. Findings show no form of implicit data processing automatic selection. Furthermore, two types of decision-making styles were identified among managers with different roles and across business departments: risk averse and risk takers, with the first being in favor of rationality and data over intuition and feelings. Seniority also results relevant [62] since top-level managers' responsibilities require them to sharpen their intuitive skills. Finally, passion is another important aspect of a manager's personality, but the connection between passion and the use of intuition was not investigated before.

Tensions can also arise as a consequence of the cognitive styles of managers. Managers' comprehension of the context, along with the history of relationships with stakeholders, shapes their experience, beliefs, and mental models [27]. In the SDMP, managers see intuition as composed of expertise, intelligence, and emotional states. Both emotional and intelligence quotients are decisive, but the former is more important when making shared and effective decisions. This is in line with [76] who argue that decision-making processes are partially driven by emotion, imagination, and memories crystallized into insights. However, in contrast with the articles of the authors presented in [23] and [25], who emphasize multidimensional approaches to decision making, results show that emotions manifest as gut feelings [33], which are perceived as sources of intuition. Managers have difficulties in finding the cause–effect logic between intuition and rationality [12]. As a consequence, some managers are more comfortable with a transcendent view (based on analytics), while others with an immanent view of strategy (based on engagement, intuition, and opportunities) [14], [17]. Results do not highlight a superior approach, but rather an attempt to solve the tension through the bidirectional sequential enactment of intuition and rationality. Indeed, intuition is ambiguous [40] and exposes managers' cognitive styles to conflicting motivations [4].

Some managers see intuition as pattern recognition, demanding the application of their judgment to situations [52], [65]. Myers [52] suggests that intuitive behaviors reflect personal histories. In fact, cumulative experience seems to support making strategic decisions by accessing stored knowledge. Interestingly, intuition seems to speed up the process. Experienced managers benefit from an intuitive approach, used as a retrieval mechanism [22].

Environmental factors also need to be considered. First, instability and uncertainty are factors behind emerging tensions [29], [30], [71]. Instability and uncertainty compel organizations to standardize internal behavior, restricting the legitimacy of intuition and reinforcing hierarchical power [8]. The environment operates in a normative fashion stigmatizing those managers who explicitly rely on intuition in their SDMP. This is in line with Gigerenzer's article [33]: intuition is not highly respected and top managers avoid it since it is neither quantifiable nor reliable.

In contrast with [43], [49], and [62], results show that if organizations have insufficient resources, and the environmental is uncertain and dynamic, managers tend to balance intuition and rationality in their SDMP.

Finally, not all strategic decisions are equally relevant [71]. In line with [21] and [33], managers may perceive the need to apply rationality in more relevant decisions, even if intuition is involved. Indeed, results confirm that the greater the organizational importance of the strategic decisions, the more managers resort to rationality rather than intuition [50].

3) Perceived Outcomes of Managerial Decisional Elasticity: In SDMP research, scholars mainly look at organizational performance [35], [43], effectiveness [9], success [59], and quality [3]. The study contributes to the literature, exploring how the integrative process of intuition and rationality affects SDMP effectiveness, focusing on nonfinancial outcomes.

The integration of intuition and rationality has an impact on perceived creativity. Literature has already found creativity results from collaboration and specific group dynamics [68]. The study highlights that the diversity of managers in terms of background, personality, and organizational role is fundamental in order to take advantage of the integration of intuition and rationality and to generate ideas [31], [66]. In line with [12], the integration of intuition and rationality into the SDMP may have a positive impact on information exploration. Creativity enhancement appears to result from the integrative process as an experience-based judgment. Managers exchange experiences and knowledge, fostering discourse that generates new ideas for strategic development. Consistently, Eling et al. [28] using intuition in NPD decisions aid in transforming new ideas into products. Yet, less experienced managers rely on intuition risk inaccuracy, leading to misguided decisions or unsuccessful products.

Another interesting consequence of integration relates to persuasion [29]. It is easier to put advance ideas or solutions when there is a balanced use of managerial decisional elasticity. Precisely, the integrative process, as a source of feeling affirmation, helps to increase the power of persuasion in convincing senior-level executives to approve the strategic direction.

Finally, this study confirms that the integrative process of intuition and rationality can improve time efficiency in the SDMP. Leveraging experience-based judgment improves processes by utilizing managers' stored experiences and knowledge. This, matched with rational considerations, accelerates decision making. The integrative process is driven by feeling affirmation from intuition. Recognizing problems through gut feelings allows managers to focus on high-potential alternatives upfront, adding greater value to the firm. In addition, the use of rationality prior the intuition may cause delays due to information unavailability [63]; thus, in order to increase speed, managers should apply intuition first, followed by analytics. Automated expertise [49] can play a role in accelerating decision making in SDMP when decision makers apply it to a familiar situation, making the most of existing capabilities. Managerial decisional elasticity enables managers to support an idea or solution, removing alternatives [18] and decreasing the probability of making errors in subsequent stages [12]. However, in line with [33] and [49], results show that if managers embrace intuition, the SDMP is faster because intuition does not require large amounts of resources.

The increasing complexity of the business context, coupled with the need to improve marketable product ideas, underlines the centrality of mastering the SDMP [26], [42], [53]. The contributions of this article are threefold. First, investigating insights from top- and middle-level managers in Dutch food industry subsidiaries of MNCs regarding intuition and rationality, a conceptual model is presented, illustrating two opposing integration modes: from IR and from RI. IR involves feeling affirmation and experience-based judgment, while RI requires in-depth and holistic information processing. Adopting these integrative modes underscores the importance of managerial decisional elasticity, aligning with microfoundations for strategy and the concept of "adaptive capacity" proposed by Friedman et al. [32]. Second, this research extends recent work (e.g., [12] and [73]) on SDMP nonfinancial outcomes. Finally, it examines various conditions: managerial traits, cognitive styles, experience, and contingencies, such as environmental forces, resource constraints, and strategic decision relevance. The resulting conceptual model enriches theoretical perspectives for evaluating SDMP effectiveness in product-development contexts.

B. Practical Implications

The intertwined relationship of intuition and rationality in the SDMP extends far beyond theoretical implications, offering concrete, actionable insights for practice. The concept of "managerial decisional elasticity" emphasizes the criticality of a nuanced approach to decision making. Organizations are encouraged to invest in training programs that equip managers with the skills to discern when to lean on their intuitive judgments and when a shift toward rational analysis is warranted. Such programs aim to cultivate the capabilities of decision makers, ensuring they possess the agility to navigate the complexities of modern business environments effectively. The research underscores the vital role of team diversity in amplifying creativity and enhancing the quality of decisions. Managers are advised to form teams that encompass a broad spectrum of backgrounds, experiences, and viewpoints. Diverse teams are better equipped to leverage the combined strengths of intuition and rationality, fostering an environment ripe for innovative problem solving and decision making. This aspect is particularly crucial in sectors where innovation speed is paramount; integrating intuitive insights with rational deliberation enables firms to strike a delicate balance between quick decision making and thorough analysis, which is essential for efficient and effective NPD. Moreover, the fusion of intuitive conviction with empirical evidence has the potential to render managerial communications more persuasive. Managers employing this integrated approach can achieve a resonance of emotional appeal backed by data, particularly when advocating for significant strategic initiatives. The study suggests that optimizing the sequence of decision-making steps—initially utilizing intuition to narrow down options and, subsequently, applying rationality for validation—can significantly enhance the SDMP. For MNCs and their subsidiaries, understanding how to meld intuition and rationality becomes even more critical. The adaptation of decision-making processes to accommodate cultural distinctions and the specificities of strategic decisions can enable the crafting of strategies that resonate on a local level while maintaining global coherence.

Overall, this research transcends academic theory to serve as a strategic compass for businesses striving to refine their decision-making practices. By interweaving intuition with rational analysis, managers unlock new avenues for achieving superior strategic outcomes, especially vital in today's fast-evolving and uncertain business landscape. This balanced approach not only aids in navigating immediate decision-making challenges but also prepares organizations for future strategic endeavors by fostering a culture that values both instinctively and analytically.

C. Limitations and Suggestions for Future Research

This research focuses on the Dutch food industry, paired with the data collection methods primarily being single-session interviews, and introduces specific limitations and potential biases that can be addressed in subsequent studies. The methodology largely rests on a qualitative foundation. Integrating quantitative approaches, especially experimental designs, could provide richer insights. Future exploration can be directed toward understanding the role of diversity within managerial teams for the integration of intuition and rationality within SDMPs. Additionally, expanding the study's geographical and industrial scope could reveal how unique market challenges, cultural nuances, and organizational hierarchies shape the application of the IR and RI integrative modes deepening the robustness and generalizability of the proposed conceptual model. A potential drawback of emphasizing sequential integration patterns is the

oversimplification of the complex interplay between intuition and rationality. To address this, future studies might explore the conditions under which these patterns are most effective, considering factors, such as organizational culture, the nature of the decision, and external environmental pressures. Finally, as the current landscape sees rapid technological advancements, it becomes imperative to investigate how digital tools and platforms either augment or disrupt SDMP.

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