

Neuroscience Organizational Behavior for Employee Development Program

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Received: April 19, 2025

Revised: April 28, 2025

Accepted: May 15, 2025

Published: May 27, 2025

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Abstract: *In the era of digital transformation, global organizational dynamics have become increasingly complex, highlighting the misalignment between human resource management and neurocognitive adaptability. Conventional management approaches often overlook the role of brain functions in influencing employee behavior and decision-making. This study explores organizational behavior through a neuroscience lens to identify behavioral patterns that can inform effective employee development programs. A qualitative exploratory case study design was employed, involving ten informants comprising HR managers, unit heads, and operational staff from a technology-driven service company. Participants were selected using purposive sampling based on criteria such as work experience and managerial involvement. Data were collected through semi-structured interviews, participant observation, and organizational document analysis. Thematic analysis was conducted through a six-phase process: data familiarization, initial coding, theme identification, theme review, theme definition, and report generation. Data validation was ensured through triangulation, peer debriefing, and member checking. The analysis yielded six key themes: (1) Work experience as a cognitive foundation, where senior employees demonstrated quicker and more intuitive decision-making; (2) Adaptive organizational behavior, characterized by flexible task allocation and informal team collaboration; (3) Varying effectiveness of managerial interventions, dependent on clarity and contextual relevance; (4) Awareness of the importance of neurocognitive profiling, yet lack of formal assessment implementation; (5) Hierarchical dynamics in decision-making, with senior staff often dominating discussions; and (6) Emotional and social support as crucial elements of team resilience. These findings underscore the gap between cognitive awareness and the systemic integration of neuroscience in organizational practice. Neuroscience offers a compelling framework for understanding and managing organizational behavior. Integrating neurocognitive profiling into human resource strategies has the potential to improve decision-making, team dynamics, and the precision of intervention programs. The study recommends developing brain-based assessment systems to foster adaptive, evidence-driven, and personalized workforce management in evolving organizational settings.*

Keywords : Neuroscience, Organizational Behavior, Neurocognitive Profiling, Human Resource Development, Adaptive Behavior

How to cite: Kaliey, A. G. R., & Yudha, R. P. (2025). Neuroscience organizational behavior for employee development program. *Journal of Human Health*, 2(1), 24–31. <https://doi.org/10.62872/pysqyt79>



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INTRODUCTION

In the past decade, global organizational dynamics have experienced increasingly complex transformational pressures, fueled by the digital revolution, market volatility, and the need for rapid innovation. Human resources (HR) are now required not only to be productive but also neurologically and cognitively adaptive to changes in organizational culture. This phenomenon is becoming increasingly evident amid an increase in burnout in the work environment: according to The American Institute of Stress (2024), more than 83% of workers in the United States report chronic stress due to organizational demands that are out of sync with their psychoneurological capacity (The American Institute of Stress, 2023). This reflects a gap between expectations for HR performance and the fact that brain structure and cognitive function are not always aligned with the current organizational design.

The era of global digital transformation has driven significant changes in organizational dynamics and leadership, especially in universities and higher education institutions. This transition demands a new approach to the development of human resources (HR) that can adapt to rapid change (Waldman, Ward and Becker, 2017). Data shows that 76% of organizations have failed to implement digital transformation due to leadership competency gaps and a lack of understanding of neuroscience-based organizational behavior (Becker and Cropanzano, 2010). Although various conventional organizational approaches have been used to measure human resource behavior and performance, neuroscience-based approaches in organizations are still minimally used as the main foundation. The development of neuroleadership and organizational neuroscience shows that understanding brain functions, such as the prefrontal cortex (decision-making), amygdala (response to stress), and anterior cingulate cortex (emotion regulation), can map organizational behavior more objectively and precisely (Rock et al., 2012; Debelak, Penger and Grah, 2022; Arshad et al., 2023). Neuroscience has been used to explain phenomena such as trust, motivation, and the psychological resilience of employees (Zak, 2018). However, the integration of neurological data in the mapping of organizational HR profiles in non-clinical contexts, particularly at the structural and managerial levels, is still very limited methodologically and applicatively.

Previous research began to explore the integration of neuroscience in the study of organization and management. As shown in a literature review of 77 neuroscience articles in the field of marketing management and organizational behavior published between 2004 and 2015, neuroscience approaches have been applied in a variety of contexts such as organizational behavior, marketing, leadership, strategic management, finance, and human resources (Healey and Hodgkinson, 2015; Corr et al., 2016). To gain an in-depth understanding of research trends and the distribution of scientific themes in the study of organizational behavior and neuroscience-based human resources, a bibliometric analysis was conducted using VOSviewer. This visualization builds on publications compiled in the database from 2020-2025 and shows the thematic linkages between key terms in the global literature.

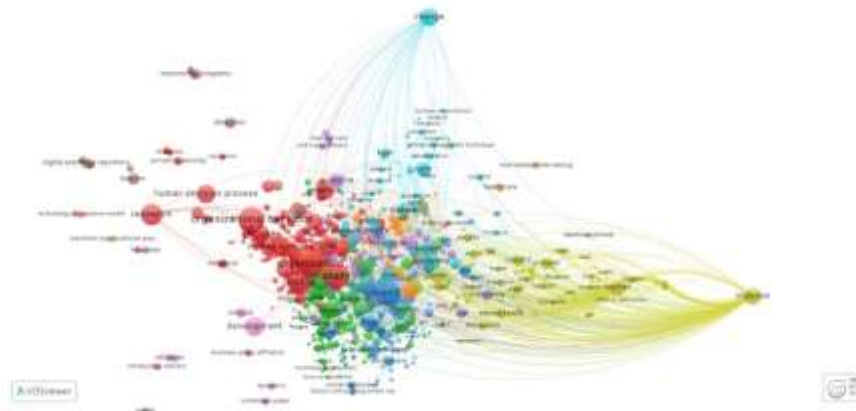


Fig 1. Vos Map

From the visualization results, it can be seen that the terms "organizational behavior", "human resource", "employee", and "profile" appear in one main group in red, indicating the high density of research and the close relationship between sub-themes in the domain of HR management and organizational behavior. This shows that studies related to the development of human resource behavior continue to be strengthened, but still within the limits of conventional paradigms (psychological and sociological), have not touched the neurocognitive realm systematically. Keywords such as "development", "structure", and "role" indicate that the main focus of research still revolves around the structural development and role of human resources in general, rather than on brain function mapping or neuroscience approaches.

Interestingly, terms related to cognitive functions such as "executive function", "neural", "cognition", and "brain function" appear in green clusters and are on the periphery of the main cluster. This indicates that the topic of neuroscience in the context of organizations is still marginal and separate from the main discourse in HR management. These linkages have the potential to be bridged through an interdisciplinary approach. This also emphasizes the research gap that is the main foundation of this research: that there is no established integration between neuroscientific profiling and organizational behavior management.

In addition, the emergence of keywords such as "intervention programs" and "decision process" in separate nodes (on the periphery) indicates that there are still few studies that design organizational interventions based on neurocognitive profiles. If organizations can develop behavioral databases based on brain function mapping, then intervention programs will become more precise and adaptive to the individual needs of workers, as suggested by Balconi et al. (2019) and Boyatzis & Jack (2018).

Furthermore, the terms "covid", "mental health", and "stress management" also seem quite dominant and connected to organizational terms. This reflects an increase in attention to mental health and the cognitive adaptive capacity of human resources in dealing with the uncertainty of

the post-pandemic work environment. However, there is no clear integration between this issue and neurophysiological mapping efforts as a predictor of long-term work behavior. This is where the relevance of this research becomes important: as an effort to bridge the urgency of mental health, organizational culture change, and worker neurocognitive profile data to create an adaptive, efficient, and scientifically evidence-based HR management system.

Therefore, the results of this analysis reinforce the finding that there is a scientific gap (research gap) between the study of organizational behavior and the neuroscience-based approach. The absence of neuro-mapping or mapping of brain function-based HR profiles in the framework of organizational behavior emphasizes the need for exploratory research that is able to bridge these two domains. This visualization also shows the urgency to develop a conceptual model that integrates the neuro-profile database into the design of organizational change interventions, in order to create more precise, effective, and personalized management policies. Thus, the results of this VOSviewer not only visually support the argument in the background, but also provide methodological legitimacy that the study to be carried out is an important scientific contribution that is on the emerging field path and is very relevant to answering real challenges in modern human resource management.

The urgency of this research is even more evident considering the serious consequences if organizations fail to adapt to digital changes. The inability to understand the relationship between neuroscience and organizational behavior can result in a culture of fear and anxiety in the work environment (Weitz, 2015). Pincus (2008) identified the existence of a "dark side" of brain plasticity, where corporate cultural activities can permanently change the brain structure of employees over time (Pincus, 2008). The conditioning of fear-driven limbic responses in organizations suggests that over the years, employees' brains have been trained to be fearful and cautious, thus inhibiting innovation and adaptation when the culture needs to change in response to strategic and competitive pressures. The "New Employee" onboarding program and the ritualistic experiences that follow it are not only easily learned and forgotten, but can shape physiological changes in the structure of an employee's brain over the years, making them more difficult to change when necessary (Weitz, 2015). Without a deep understanding of neuroscience perspectives in organizational behavior, the beliefs and ways of thinking that previously made a company successful can become a barrier in a new competitive environment.(Pincus, 2008).

This research has strong relevance to the development of science and practice in the field, especially in the context of paradigm change in leadership development and human resource management. Neurofeedback techniques to help develop leadership qualities in individuals (Edmi Edison *et al.*, 2019) menunjukkan potensi pendekatan show the potential of neuroscience approaches in increasing the effectiveness of human resource development. Recent studies using organizational neuroscience methods, such as eye-tracking, to assess Task-oriented Leadership (TOL) and Relationship-oriented Leadership (ROL) have shown promising results (Pieter Sahertian, 2010).). In addition, evidence suggests that a culture of trust improves business performance, where the nervous system adapts to experience and training, thus enabling neuroscience-based interventions to improve organizational health (Kleynhans, Heyns and

Stander, 2022). This study aims to fill the gap in the literature by developing a mapping model of worker brain function and management as a database for future research, so that an efficient change model can be obtained with appropriate treatment based on a neuroscience perspective. Through a qualitative approach, this study will investigate the cognitive function and basic mechanisms of the brain in a real work environment, which can make a significant contribution to the development of adaptive HR profiles in the era of digital transformation.

METODOLOGI

Study Design

This study uses a qualitative approach with an exploratory case study design to investigate organizational behavior from the perspective of neuroscience-based HR profiles. The qualitative approach was chosen because of its ability to uncover complex phenomena that are contextual in nature and require a deep understanding (Creswell and Creswell, 2018).

Informant

The number of informants in this study is 10 people, consisting of HR managers, work unit leaders, and operational staff in service sector companies that have implemented technology-based HR development programs. The selection of informants was carried out by purposive sampling with the following criteria: (1) having at least five years of work experience; (2) understanding the work behavior management process in the organizational environment; and (3) willing to participate in in-depth interviews with a long duration. These informant characteristics are considered to be able to represent individual and structural perspectives in HR management that are relevant to the neuroscience focus.

Study Instruments

The main instrument in this study is the semi-structured interview guidelines, which were developed based on literature review and bibliometric mapping results (VOSviewer) to ensure the appropriateness of the topic focus. The questions in the interview guidelines include the dimensions of work experience, organizational behavior patterns, responses to management interventions, and perceptions of the importance of neurocognitive profiles in supporting work effectiveness. In addition to interviews, researchers also used participatory observation techniques to record interaction patterns, decision-making, and team dynamics directly in the work environment.

This study uses a qualitative approach with an exploratory case study design to investigate organizational behavior from the perspective of neuroscience-based HR profiles. All interviews were recorded (with the informant's permission) and transcribed verbatim for further analysis.

Data Collection

The data collection procedure was carried out through three main stages: (1) introduction to the organizational context and identification of informants; (2) conducting in-depth interviews lasting 60–90 minutes per informant; and (3) gathering field notes and internal organizational documents that support data triangulation. All interviews were recorded (with the informants' consent) and transcribed verbatim for further analysis.

Data Analysis

Data analysis was carried out using thematic analysis techniques, namely by identifying thematic patterns that emerged from interview transcripts, observation notes, and supporting documents. The analysis steps include: (1) data familiarization, (2) initial coding, (3) theme search, (4) theme review, (5) theme definition and naming, and (6) preparation of results reports. To ensure the validity of the results, triangulation of sources and methods, peer debriefing, and member checking were carried out, namely, reconfirming the results of the interpretation with the main informant to maintain the accuracy of the meaning.

This method is considered suitable to achieve research objectives because it is able to capture the depth of meaning and contextual experience of organizational actors who are directly involved in work behavior management practices. The phenomenological approach also provides space for the exploration of neurocognitive dimensions that are subjective and cannot be measured purely quantitatively. The validity and reliability of the research are maintained through methodological rigor strategies, such as documentation trail audits, double-code confirmation between researchers, and the use of diverse data to enrich the context of the analysis.

RESULTS

The results of this research were obtained through thematic analysis of data collected through semi-structured interviews, participatory observations, and analysis of internal organizational documents. The analysis process follows six systematic thematic stages, starting from data familiarization, initial coding, search and review of themes, to defining and compiling findings reports. To maintain the validity of the results, the researcher triangulated sources and methods, peer debriefing with fellow researchers, and member checking with the main informant to ensure the suitability of the data interpretation.

The first theme that emerged from the analysis was work experience as the cognitive foundation of the organization. The majority of informants, especially those with a tenure of more than five years, show a tendency to make faster, more accurate, and contextual decisions. This is in line with the development of cognitive schemas that are formed through the process of repetitive learning in the workplace. Senior workers tend to leverage experience-based intuition when faced with complex problems, in contrast to new workers who rely more on formal procedures. Work experience not only enriches technical insights but also strengthens synaptic networks associated with the brain's executive functions, such as selective attention, emotion regulation, and simultaneous processing of social information and tasks (Biswas, 2015; Knights, 2019).

The second theme is adaptive organizational behavior patterns. Participatory observation shows that the work team can respond dynamically to changes in tasks and work pressures. When there is a spike in workload, teams don't just rely on formal instructions, but make spontaneous adjustments to task allocation, work priorities, and communication schemes. This adaptability seems dominant in teams that have a strong informal structure and are supported by a collaborative work climate. However, in work units with minimal cross-position interaction, the response to change tends to be slow and rigid. These data suggest that organizational adaptability is closely

correlated with cognitive flexibility and inter-individual connectedness, two aspects that in the organizational neuroscience literature are associated with prefrontal and limbic network activity (Ontario Public Service, 2016; Lieberman, 2020).

Table 1. Key Findings

No	Main Themes	Description of Findings	Data Source
1	Work Experience as a Cognitive Foundation	The majority of informants stated that long work experience strengthens fast and accurate decision-making.	Interviews, observations
2	Adaptive Organizational Behavior Patterns	The work team shows flexibility in responding to work dynamics, especially when facing high loads.	Participatory observation, SOP documents
3	Response to Management Intervention	Interventions such as training and work rotation are welcome, but their effectiveness depends on clarity of objectives.	Interviews, training documents
4	Perception of Neurocognitive Profiles	Informants are aware of the importance of neurocognitive profiles in supporting work effectiveness, but there is no formal assessment system.	Interviews, HRD documents
5	Team Dynamics in Decision Making	Decisions are generally collective, but there is still dominance of members with high seniority.	Observations, interviews
6	Social and Emotional Roles in Interactions	Emotional support between team members is the glue that strengthens collaboration, especially when faced with work pressure.	Observations, interviews

Source : Data Processed in 2025

Furthermore, the third theme is related to the response to management interventions. Informants generally welcome training, workshops, or rotation programs offered by management. However, the effectiveness of such interventions depends on the extent to which the program's goals and benefits are communicated to employees. Some informants stated that the training program felt "forced" or out of context to their daily work needs. This shows that there is a gap between the design of managerial interventions and the neuropsychological reality of workers. If the intervention does not consider the cognitive load, mental readiness, and learning preferences of the individual, then the benefits will be minimal and even cause resistance (Camerer, Loewenstein and Prelec, 2014).

The fourth theme that is very important is the perception of the importance of neurocognitive profiles in supporting work effectiveness. Some informants recognize the concept

of thinking style, work memory strength, or level of focus as part of an individual's uniqueness that affects work performance. They believe that scientifically mapping employees' cognitive and emotional potential will be very helpful in making strategic decisions regarding placement, promotion, or training design. Unfortunately, until now, there is no formal neurocognitive assessment system in organizations. This creates a gap between awareness of the importance of neuroscience-based approaches and their practical implementation. Previous studies have also shown that the integration of neuroprofiling in HR management can increase productivity by up to 20% if implemented strategically (Cacioppo and Berntson, 2013; Howard-Jones, 2014).

The fifth theme that emerged from the observation data was team dynamics in decision-making. The decision-making process in most work units is collective. However, in practice, there is dominance of team members who have high status or seniority. The decisions made are not always based on rational arguments, but rather on the interpersonal and symbolic influences inherent in a particular individual. This phenomenon shows an imbalance in the distribution of cognitive roles within the team. These dynamics can stifle innovation if ideas from new or junior members tend to be ignored. The neuroscience literature says that dominance in group interactions is related to overactivation in the amygdala area, which leads to a decrease in reflective and analytical functions in social dynamics (Lieberman, 2020).

The last theme found is The final theme found was the social and emotional role in team interaction. In addition to rational and functional factors, social relationships between individuals in the organization play a significant role in maintaining the continuity of teamwork. In high-pressure situations, emotional support from coworkers becomes a key reinforcement that stabilizes emotions and keeps individuals motivated. Observations show that team members often perform spontaneous prosocial actions such as helping colleagues unasked, or providing positive affirmations after a heavy task is completed. This kind of interaction contributes to the strengthening of social connections that have an impact on mental health and work productivity (McKee, Boyatzis and Johnston, 2008).

Overall, the results of this study confirm the importance of a neurocognitive approach in understanding and managing organizational behavior. An individual's cognitive and affective profile plays a fundamental role in shaping work experiences, interaction patterns, and decision-making within teams. The absence of a system that is able to map and integrate neuropsychological data into HR management policies is a critical gap that needs to be filled immediately. This study recommends the development of a database of worker brain profiles as a foundation for the design of more targeted and impactful organizational interventions.

Table 2. Results of Triangulation of Sources and Methods

No	Main Themes	Interview Data (Informant)	Observation Data (Work Situation)	Supporting Documents (Policies/Procedures)	Interpretation
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1	Work experience influences decision-making	"I feel like I'm getting used to it faster" (I2)	Senior employees make decisions without formal consultation	SK Job Description shows role flexibility for seniors	There is consistency between experiential narratives, actual patterns of behavior, and formal organizational provisions. Adaptability is formed organically, not formally regulated, but manifest in work interactions. The mismatch between training design and real needs gives rise to passive resistance. There is an awareness of the importance of profiling, but it has not been implemented structurally. Formal hierarchy influences decision-making patterns that tend to top-down.
2	Adaptability in work	"We used to help each other when the workload went up" (I4)	Cross-section collaboration during peak hours	There are no specific SOPs on workload adaptation	
3	Response to management interventions	"The training is good, but sometimes it's irrelevant" (I1)	Passive response during training	Regular training schedule each quarter	
4	Perception of neurocognitive in work	"Everyone has a different mindset, it should be mapped" (I5)	No neurocognitive assessment was performed	There are no regulations on HR profiling	
5	Team decision-making dynamics	"Usually we follow more senior decisions" (I3)	New members rarely present ideas in meetings	Hierarchical organizational structure	

Source : Data Processed in 2025

Table 3. Member Checking Results

No	Key Findings	Statement of Results to Informants	Informant Response	Researcher's Actions	Interpretation
1	Seniors are more dominant in team meetings	"Is it true that you feel reluctant to present ideas during meetings?"	"Yes, because usually decisions have been made secretly" (I3)	Adding descriptions of social context in decision-making	The validation of the initial interview data was strengthened by the clarification of its social meaning.
2	Training feels out of context	"Does the training you take support your day-to-day work?"	"Only partial, sometimes too general" (I1)	Confirms that the resistance findings are not due to poor training, but less relevant	Ensure that results are not biased against negative perceptions of training in general.
3	Workload adaptation without formal rules	"Are there any guidelines when coworkers help each other?"	"Nothing, it's just a habit" (I4)	Strengthen the analysis that adaptability is spontaneous and based on organizational culture	In-depth validation of the results of informal observations that are not recorded in official documents.
4	Awareness of the importance of neuroprofiling	"Do you agree that cognitive profiles are scientifically mapped?"	"Strongly agreed, but never offered" (I5)	Add a gap record between the needs and implementation of data-driven HR	Increase urgency to recommendations for the implementation of formal neuroprofiling systems.

Source : Data Processed in 2025

Based on the three validation strategies above, it can be concluded that the research findings have a high level of consistency and validity. Triangulation of sources and methods showed a strong correlation between informant statements, the reality of work in the field, and the presence or absence of formal organizational documents. Peer debriefing succeeded in criticizing and refining the results of thematic analysis, especially in the aspects of theme clarity and possible researcher bias. Meanwhile, member checking ensures that the meaning of the results interpreted

by the researcher follows the informant's understanding, thereby increasing the accuracy and credibility of the study results.

This validation provides a strong foundation that the research results are not only speculative, but truly reflect the real conditions experienced and perceived by the research subjects in their work environment.

DISCUSSION

The findings show that employees with longer work experience tend to make decisions quickly and independently, even without a formal consultative process. This is consistent with the theory of Human Capital (Becker, 1975) which states that experience is a form of capital that affects work efficiency and speed in making decisions. In addition, research by Gino & Staats (2012) also emphasizes that accumulated experience allows individuals to establish efficient work patterns that do not necessarily require standard procedures. However, the dominance of experience also gives rise to the potential exclusion of new ideas from junior employees, as found in the team dynamics in the observed organization (Gino and Staats, 2012).

Adaptability emerged as one of the main strengths of organizations in dealing with daily work challenges. A culture of mutual help without written rules suggests that collective values are the basis for proactive behavior. This is in line with the concept of organizational citizenship behavior (Organ, 1997) which highlights the importance of informal prosocial behavior in maintaining team effectiveness. These findings also reinforce previous studies by Pulakos et al. (2000) on the importance of adaptability as a form of employee behavioral flexibility in a rapidly changing work environment. However, since there is no official guideline, this adaptability is highly dependent on social cohesiveness and cannot necessarily be replicated in other environments (Pulakos et al., 2000).

Most informants showed a passive attitude towards management training, arguing that the training materials were not as needed. This reflects the challenges in fit between managerial policy and field needs, as stated by Deci & Ryan (1985) in the framework of self-determination theory, where active participation only occurs when individuals feel their needs are valued and relevant. This shows the importance of a bottom-up approach in designing organizational intervention programs (Deci and Ryan, 1985).

Although it has not been formally implemented, there is an awareness from most informants that understanding an individual's neurocognitive profile (e.g. thinking style, attention capacity, or work preferences) can help optimize teamwork. This supports the theory of neurodiversity at work (Austin and Pisano, 2017) that encourages cognitive mapping to support individual strength-based human resource management. The lack of systemic implementation of profiling shows a gap between awareness and policy, as well as opening up opportunities for the development of cognitive assessment systems in organizations. Dominant determinant in team decision-making. Junior members feel that they lack space to convey ideas. This is in line with Hofstede's (1983) study of high power distance in organizational culture in Asian countries, where vertical structures greatly influence communication within teams. As a consequence, bottom-up

innovation is difficult to develop, and collective participation becomes limited (Sorge and Hofstede, 1983).

From the theoretical side, this research reinforces the importance of integration between cognitive and social approaches in understanding organizational behavior. Neurocognitive profiles are a new potential in the study of human resource management that has not been widely applied in the context of conventional organizations. In practical terms, these findings provide important input for organizational management to design training policies based on actual needs, open up space for dialogue across departmental levels, and consider the use of neurocognitive-based assessment tools for work placement and team development.

This research has several limitations. First, the limited number of informants (6 people) and from one type of organization, which can affect the generalization of findings. Second, observations are made over a limited period of time, so seasonal dynamics or extraordinary events may not be monitored. Third, the neuroprofiling approach has not been supported by quantitative data, so it is still exploratory.

CONCLUSIONS

This study reveals that work experience, team interaction patterns, and responses to managerial interventions are important components in shaping effective organizational behavior, seen from a neurocognitive perspective. Through a careful thematic analysis of interview data, participatory observations, and internal documents, six main themes were obtained: (1) work experience as the cognitive foundation of the organization, (2) adaptive behavior patterns of teams, (3) the effectiveness of management interventions, (4) awareness of the importance of neurocognitive profiles, (5) the dynamics of team decision-making, and (6) the role of emotions and social relationships in teamwork. A major contribution of this research lies in its approach that integrates insights from neuroscience into the study of organizational behavior. The research findings enrich understanding of how neuropsychological factors such as experience-based intuition, cognitive flexibility, and social-emotional connections affect work effectiveness, especially in dynamic and complex work environments. The practical implications of this study are that organizations need to begin considering mapping employee neurocognitive profiles as a basis for decision-making in recruitment, HR development, training, and work team management. In addition, organizations need to develop a managerial intervention design that considers the cognitive readiness and affective needs of individuals so that the results are maximized and sustainable. Recommendations from this study include: (1) the need to develop a neurocognitive assessment system in the work environment to optimize employee potential; (2) increasing the capacity of leaders in reading team dynamics based on cognitive and emotional indicators; and (3) the need for further research that tests the effectiveness of brain profile-based interventions in the context of organizational management. Overall, the study confirms that a cross-disciplinary approach that combines management science, psychology, and neuroscience can make a significant contribution to creating organizations that are more adaptive, psychosocially healthy, and productively sustainable.

ACKNOWLEDGMENTS

First and foremost, I would like to extend my sincere thanks to PT Indonesia Cahaya Cendekiawan (ICC) for their generous funding, which played a pivotal role in facilitating our research. Your support allowed

us to delve deeper into the application of brain digital technology in identifying and nurturing productive workers and effective leaders. I also want to acknowledge the contributions of my co-author, Rivo Panji Yudha, whose insights and expertise have enriched this research. Together, we have crafted a study that we believe can significantly impact the understanding of workforce development through applied neuroscience. To our colleagues, mentors, and organizations that provided encouragement and resources throughout this journey, your assistance and guidance have been invaluable. Your belief in our work has motivated us to push forward and strive for excellence.

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