

Decoding fairness: Unveiling the cognitive processes that determine pay rises and promotions

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ABSTRACT

Drawing on attribution theory, this study explores how employees explain organizational decisions concerning pay rises and promotions, conceptualizing these attributional processes as an interpretive layer that precedes fairness evaluations, and how distinct configurations of causal explanations are associated with work-related attitudes. The research was conducted in an Italian bank, leveraging on a two-wave design and a two-study structure. The full sample ($N = 3193$) was randomly split into two equivalent subsamples. Study 1 ($n = 1540$) used latent profile analysis to identify three attribution profiles: *meritocratic attributors* profile, the *institutional attributors* profile, and the *relational-structural attributors* profile. Study 2 ($n = 1599$) replicated the profile structure, assessed their longitudinal stability and tested associations with demographic and work-related predictors as well as key work outcomes. Study 2 shows that the *meritocratic attributors* profile and the *relational-structural attributors* profile are both stable over time, while the *institutional attributors* profile is more fluid. Demographic and work-related factors were associated with profile membership. Older employees and those in higher positions were more likely to belong to profiles emphasizing competence-based or institutionalized explanations, whereas younger employees and women were more often associated with profiles emphasizing relational and structural explanations, such as networks and gender dynamics. Our findings also reveal that attribution profiles are associated with different attitudes toward work. Employees in the *meritocratic attributors* profile reported the highest levels of work engagement, affective organizational commitment, distributive justice, and trust in management. These levels were lowest among employees in the *relational-structural attributors* profile, consistent with the idea that explanations centered on relational dynamics and structural constraints are associated with less favourable evaluations of organizational decisions.

Optimizing employee satisfaction and productivity is essential for organizational success (Boccoli et al., 2023). To achieve this, Human Resource (HR) managers must not only design effective policies but also understand how employees interpret them, as these interpretations shape employees' reactions and behaviors (Pak & Heidarian Ghaleh, 2024). This is particularly critical for decisions concerning compensation and incentive systems, which are highly sensitive since they directly concern the allocation of valued

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resources, recognition and career opportunities (Chen et al., 2023). Even when reward systems are formalized and standardized, employees often react differently to the same decisions, suggesting that formal criteria alone do not fully explain how these decisions are interpreted, experienced and evaluated (Adams, 1965; Greenberg, 1987).

Organizational justice research has extensively examined how employees evaluate the fairness of outcomes and procedures, consistently showing that justice perceptions are associated with well-being, commitment, trust and performance (Adamovic, 2023; Choong et al., 2024; Ho, 2025).

Yet, knowing whether an outcome is perceived as fair does not fully explain how employees interpret why that outcome occurred. Attribution theory addresses precisely this interpretive dimension by focusing on the causal explanations individuals construct for important events (Martinko et al., 2007; Nishii et al., 2008; Weiner, 1985): in the context of pay rises and promotions, employees may explain outcomes through competence-based factors (such as ability), institutionalized criteria (such as education or seniority), or relational and structural factors (such as personal networks or gender dynamics). In this study, attribution is therefore the focal construct: attribution processes are conceptualized as fairness evaluations. Whereas attributions capture employees' causal explanations of why organizational outcomes occurred, distributive justice captures evaluative judgments about whether those outcomes are fair and, thus, represents an evaluative consequence of employees' attributional processes.

Even though attributions are central to how individuals interpret and respond to promotion and reward decisions (Hewett et al., 2018), attributional processes have received limited attention in research on compensation and promotions (Harvey et al., 2014; Martinko et al., 2011). To address this gap, we draw on attribution theory (Martinko et al., 2006; Weiner, 1985). Using Weiner's attributional dimensions (locus, stability, controllability), we classify the main causes employees refer to when interpreting these decisions. Indeed, two employees observing the same allocation decision in their organization, for instance, a modest raise or a denied promotion, may interpret it very differently depending on the causes they attribute to it. When employees believe that these outcomes are linked to competence-based and potentially improvable factors, they may be more likely to perceive career advancement as understandable and attainable. Conversely, attributions to uncontrollable or external causes – such as gender bias, politics, or managerial favouritism – can trigger frustration, reduced trust and disengagement. Thus, attribution patterns provide a window into the cognitive processes through which employees interpret organizational decisions and develop evaluative, relational, motivational and affective responses. Understanding these attribution processes is crucial for explaining why standardized HR policies often produce heterogeneous experiences and outcomes among employees. At the same time, understanding attribution processes requires moving beyond the isolated examination of single causes.

Prior research has generated important insights by examining specific attributional dimensions (Harvey et al., 2014; Martinko et al., 2007; Weiner, 1985). However, this approach does not fully capture two features of attributional sensemaking in complex organizational settings. First, causal explanations co-occur within individuals: employees rarely rely on a single explanation in isolation, and may interpret the same promotion as reflecting both individual competence and seniority, or as shaped by personal networks and gender-related dynamics. The meaning of each explanation, thus, partly depends on the constellation in which it is embedded. Second, these configurations are not reducible to average, variable-level effects: an interpretive pattern combining, for instance, credential-based and tenure-based explanations would remain invisible to variable-centered analyses, estimating the net effect of each attribution separately. Therefore, understanding attribution processes as integrated configurations of causal explanations, rather than as isolated cognitive evaluations, requires a person-centered perspective that captures how multiple explanations combine within individuals. Building on this premise, we adopt a person-centered approach to examine whether employees cluster into distinct attributional configurations when interpreting pay rises and promotions.

A further theoretical issue concerns the temporal nature of attribution processes. Most studies examine attributional interpretations at a single point in time, implicitly treating them as relatively stable. However, attribution theory and sensemaking perspectives suggest that causal explanations may evolve as employees reinterpret organizational events in light of new information, feedback and career experiences (Maitlis & Christianson, 2014; Weick, 1995; Weiner, 2008). For this reason, we examine not only whether distinct attributional configurations emerge, but also whether these configurations remain stable over time or whether employees transition between them. Examining profile stability and change, thus, provides a direct test of the temporal nature of attribution processes, which is whether attributional configurations function as relatively enduring, trait-like interpretive frameworks or as state-like patterns sensitive to recent experiences and organizational events (Weiner, 2008). Establishing this temporal nature determines whether attributional configurations should be understood as durable individual differences or as malleable responses to organizational signals.

Attributional interpretations are also embedded in employees' broader organizational and career context. Employees do not form causal explanations in a vacuum; rather, their interpretations are shaped by both objective career experiences and social positioning within the organization. In this study, variables such as performance, job weight, pay, seniority and education represent objective career signals that may inform how employees interpret reward allocation and career advancement. Variables such as gender, age and the gender pay gap capture broader social positioning and exposure to structural inequalities, which may increase the salience of relational or structural explanations. By jointly considering these two sets of predictors, we aim to capture how attributional configurations are associated with the interplay between objective career conditions and socially embedded experiences.

Finally, attributional configurations may also be associated with employees' broader orientation toward the organization in the context of career advancement and reward allocation. In this study, we focus on a set of theoretically connected outcomes that, together, capture employees' evaluative, relational, motivational and affective responses to HR decisions. Specifically: (i) distributive justice reflects evaluative judgments about the fairness of outcomes; (ii) trust in management reflects confidence in the integrity and intentions of organizational decision-makers; (iii) work engagement captures a motivational response in terms of energy and involvement in work; (iv) affective organizational commitment reflects employees' emotional attachment to the organization.

Considered together, these outcomes provide an integrated picture of how employees judge organizational decisions, how they

relate to the actors behind these decisions, and how these interpretations are associated with involvement and attachment to the organization. By addressing these issues, this study contributes to both attribution theory and organizational justice research. With respect to attribution theory, it offers a configurational perspective on how employees interpret career-related decisions, showing that multiple causal explanations concur within individuals and form coherent interpretive patterns that are not reducible to the sum of their parts. It then extends this perspective longitudinally, testing whether these configurations behave in a trait-like or state-like manner, and situates them within their nomological network by examining the personal and work-related characteristics associated with profile membership and transitions, a temporal and contextual dimension largely absent from prior attribution research in organizational settings. With respect to organizational justice research, it specifies attribution processes as an interpretive layer that precedes fairness evaluations, showing how distributive justice perceptions – together with trust in management, work engagement, and affective commitment – are grounded in broader attributional configurations, without conflating causal explanations with evaluative judgments.

1. Theoretical background and development of research questions

1.1. Attribution profiles on organizational decisions about pay rises and promotions

A person's perception of fairness regarding increases in salary and promotions is deeply intertwined with concepts of equity and distributive justice (Cohen-Charash & Spector, 2001). Equity involves mutually beneficial exchanges between parties who transfer valued resources, while distributive justice refers to the perceived fairness of outcomes in allocation situations (Adams, 1965; Blau, 1964; Homans, 1961).

Deepening on the decisions about salary increases and promotions, equity theory (Walster et al., 1978) explores the correlation between the perceived fairness of the decisions taken and factors such as work quality and quantity. Distributive justice, with its emphasis on outcomes, primarily influences cognitive, emotional and behavioural responses (Adams, 1965; Cohen-Charash & Spector, 2001).

The perception of fairness in pay rises and promotions is generally examined through two theoretical lenses: distributive justice theory and social exchange theory. The former states that perceived organizational injustice leads to negative thoughts, emotions, attitudes and behaviour, resulting in less trust in the organization manifested by employees (Colquitt et al., 2001). According to the latter, when individuals feel that their organization cares for their needs and feelings, they reciprocate with positive behaviour and strong commitment (Cropanzano & Mitchell, 2005; Tyler, 1994).

While distributive justice and social exchange theory have extensively explained how employees evaluate the fairness of organizational decisions and respond to them, they provide more limited insight into how employees interpret the causes of these decisions.

Understanding whether an outcome is perceived as fair does not fully capture how employees make sense of why this outcome occurred. Accordingly, we conceptualize attribution processes as an interpretive layer that precedes, rather than operates within, justice perceptions. Specifically, attributions capture employees' causal explanations for *why* career-related outcomes occur, whereas distributive justice reflects evaluative judgments about *whether* these outcomes are fair. These are conceptually distinct phenomena: attributional processes represent a form of interpretive sensemaking that precedes and informs – but is not reducible to – fairness evaluations. Accordingly, distributive justice is conceptualized in this study as an evaluative outcome of employees' attributional processes, rather than as a mediator or control variable.

Attribution theory (Martinko et al., 2006; Weiner, 1985) explains how individuals construct causal explanations to make sense of important events, shaping their expectations, emotions and behavioural responses, and offering insights into the “black box” between organizational events and employee outcomes (Heider, 1958; Hewett et al., 2018; Kelley, 1973; Weiner, 1985). In organizational contexts, and particularly in decisions concerning pay rises and promotions, these explanations play a central role in shaping how employees interpret outcomes that directly affect their careers (Colquitt et al., 2001; Jackson, 2019; Sharafizad, Brown, Jogulu and Omari, 2024). Weiner (1985) conceptualizes attributions along three key dimensions: locus (internal vs. external), stability (stable vs. unstable) and controllability (which provide a useful framework for interpreting how individuals make sense of outcomes). In this study, these dimensions are not used to derive attributional profiles deductively or to exhaustively represent all possible combinations of attributional categories. Rather, they serve as a theoretical lens to guide the selection of meaningful attributional indicators, and to interpret the configurations that empirically emerge from employees' responses. In line with person-centered theorizing, our interest lies in how multiple causal explanations co-occur within individuals, forming distinct attributional patterns.

Decisions regarding career advancement are widely regarded as significant events, and employees are therefore likely to actively seek causal explanations for career-related outcomes. Instead, they may simultaneously draw on multiple explanations, including meritocratic (e.g., ability), institutional (e.g., seniority), and relational or structural (e.g., networks, gender).

As a result, attribution processes may be better conceptualized not as independent cognitive elements, but as configurations of co-occurring explanations that jointly shape how individuals interpret organizational decisions. A variable-centered approach, which estimates the net effect of each attribution separately, cannot fully capture these integrated patterns. By contrast, a person-centered approach allows to examine whether employees cluster into distinct groups characterized by different combinations of attributional explanations. This perspective enables addressing theoretical questions that would otherwise remain unexplored, such as whether attribution processes are organized into recurring interpretive patterns, whether these patterns differ in their underlying logic (e.g., meritocratic, institutional, or relational), whether they exhibit different levels of stability, and whether they carry distinct implications for employee attitudes over time. Importantly, this perspective also helps clarify the relationship between attribution processes and justice perceptions. While organizational justice research focuses on evaluative judgments regarding the fairness of

outcomes, attribution theory captures the underlying causal reasoning through which individuals interpret these outcomes. From this perspective, attributional profiles represent distinct interpretive lenses through which employees make sense of pay rises and promotions, which may in turn shape, without being reducible to, their fairness evaluations. Two employees may evaluate the same outcome differently, not only because they differ in their justice perceptions, but also because they rely on different attributional configurations to interpret its causes.

In this study, we focus on five attributional factors related to pay and promotion decisions – ability, education, personal networks, seniority and gender – which are theoretically informed and empirically salient in the context of career-related decisions. Specifically, prior research on career advancement (Judge et al., 1995; Ng et al., 2005), organizational inequality (Elvira & Graham, 2002; Kräft, 2022), and meritocratic systems (Greenberg, 1987; Leventhal, 1980) suggests that employees commonly refer to competence-based explanations (e.g., ability, education), institutionalized criteria (e.g., seniority), and relational or structural factors (e.g., personal networks, gender) when interpreting pay rises and promotions (Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Ibarra, 1993).

Our goal is not to exhaustively represent all possible attributional categories, but to capture a set of causes that are particularly relevant and frequently invoked in organizational contexts. Accordingly, while other attributional explanations (e.g., effort, performance or organizational systems) are theoretically meaningful, they are not included in order to maintain a focused and contextually grounded framework. Importantly, the classification of these attributional factors reflects employees' perceived causal explanations rather than their objective nature. For instance, gender-related attributions are interpreted as reflecting perceived structural or bias-related explanations, while seniority is understood as an institutionalized criterion linked to organizational rules. Similarly, personal networks are conceptualized as relational resources embedded in the social context, rather than as purely individual competencies.

Each cause corresponds to one of the main allocation criteria that employees perceive as governing the distribution of rewards in organizations, echoing Leventhal's (1980) classic account of allocation rules: rewards may be perceived as allocated according to demonstrated merit and competence (ability), formal credentials (education), institutionalized tenure-based rules (seniority), relational resources (networks), or structurally anchored social categories (gender). Considered jointly, the five dimensions therefore capture the different levels of explanation – individual, institutional, relational and structural – that employees may co-invoke when making sense of the same allocation decision. This generative logic implies that the heterogeneity of the five causes is theoretically meaningful rather than problematic: because each cause instantiates a distinct perceived logic of allocation, employees' attributional configurations should not reflect random co-occurrence, but rather the relative salience individuals assign to these allocation logics when making sense of the same decision. Which specific configurations emerge, however, remains an empirical question that we address through a person-centered analysis.

Beyond their practical relevance, the selected attributions are theoretically anchored in Weiner's attributional framework (Weiner, 1985), distinguishing causal explanations along the locus of causality, stability and controllability (see also Table 1).

Ability is considered one of the core dimensions in Weiner's model, typically classified as an internal, stable and partly controllable cause. It reflects perceptions of enduring competence and skill, attributes residing within the individual and generally consistent over time (Weiner, 1985). Within organizational contexts, ability has long been regarded as a central determinant of promotion and career advancement, as it captures meritocratic principles and performance-based evaluation (Ng et al., 2005). Moreover, ability frequently features in the enduring debate over whether promotions should be based on demonstrated competence or alternative criteria such as seniority or tenure (Mills, 1985). Thus, ability is both theoretically essential within the attributional framework and practically salient in the interpretation of career progression decisions.

A second competence-related but conceptually distinct cause is education, which we conceptualize as internal and stable. It derives from personal choices and achievements, representing the accumulation of human capital that influences career success and mobility (Becker, 1964; Judge et al., 1995). Although largely uncontrollable once obtained, education functions as a durable signal of individual capability and effort, shaping promotion opportunities and organizational perceptions of competence. Education thus differs from ability in a theoretically consequential way. Whereas ability reflects demonstrated and partly controllable competence, education operates as an acquired credential that is no longer controllable and functions primarily as a formal, institutionally recognized signal (Becker, 1964). Although both causes are competence-related, they instantiate different allocation logics: ability belongs to a meritocratic logic centered on demonstrated competence, whereas education, as a formalized credential, is conceptually closer to rule-based criteria such as seniority than to competence displayed on the job. The two causes are therefore treated as conceptually distinct

Table 1
Classification of Career-Related Attributions According to Weiner's (1985) Dimensions.

Attribution	Conceptual Notes	Locus of Causality	Stability	Controllability
Ability	Reflects individual competence and skill; perceived as residing within the person and relatively enduring, although it may be developed over time.	Internal	Stable	Partly controllable
Education	Reflects accumulated human capital and formal qualifications; largely fixed once attained and used as a durable career signal.	Internal	Stable	Largely uncontrollable once attained
Gender identity/ gender dynamics	Reflects perceived gender-related dynamics, bias, or structural inequalities affecting pay and promotion decisions.	External / Structural	Stable	Uncontrollable
Personal networks / social capital	Reflects access to relational resources and informal organizational connections; shaped by social context but partly cultivable.	External / Relational	Unstable	Partly controllable
Seniority	Reflects tenure-based and rule-based criteria embedded in formal organizational systems.	External / Institutional	Stable	Largely uncontrollable

indicators rather than as interchangeable markers of a single merit-based schema.

Gender attributions, in this context, reflect employees' perceptions that gender-related dynamics (including potential bias or differential treatment) influence pay and promotion outcomes. Consistent with how these attributions are typically understood in organizational settings, they are conceptualized here as reflecting perceived structural or contextual explanations. Although gender is inherently a personal attribute, when employees attribute career outcomes to gender they are typically referring to organizational biases and structural inequalities rather than to personal agency, which aligns these attributions more closely with an external, stable interpretive logic (Hamilton & Lordan, 2023).

Personal networks are instead conceptualized as an external cause. They depend on social and organizational contexts beyond the individual, making them external and relatively unstable, yet somewhat controllable through efforts to form and maintain relationships. Networks are conceptually distinct from ability or competence: they represent relational and contextually embedded resources rather than individual capability. Empirical research shows that networking behaviors – defined as attempts to develop and sustain relationships with people who may assist one's career – are strong predictors of both career satisfaction and career prospects (Fryczyńska & Ivanova, 2019).

Finally, seniority attributions reflect employees' perceptions that organizational tenure, as recognized and rewarded by the organization's formal systems, influences pay and promotion outcomes. When employees attribute career outcomes to seniority, they are typically referring to institutionalized tenure-based rules and criteria rather than to personal persistence alone (Leventhal, 1980). Accordingly, seniority is conceptualized here primarily as a stable, institutionalized criterion for career advancement – one that reflects a rule-based and formalized logic of allocation. As noted by Mills (1985), the enduring debate between seniority and ability reflects competing values of fairness and meritocracy, with seniority-based systems preferred for their perceived transparency and contribution to organizational stability.

These attributional categories can help explain how employees interpret and respond to career-related decisions and provide a theoretical basis to identify the distinct attributional profiles and the impact of different attributions to pay/career opportunity. For instance, when employees explain the organization's promotion decisions through ability-based criteria, they may perceive advancement as attainable and contingent on competence, reinforcing beliefs in the controllability of career outcomes. In contrast, explaining advancement decisions through external factors, such as personal networks, may lead to perceptions of organizational politics or inequity, potentially weakening the perceived link between competence and reward. Similarly, if pay raises are perceived as a consequence of seniority, individuals may view advancement as a function of institutionalized criteria rather than current performance, fostering expectations of reward accruing over time. Meanwhile, explaining limited career progression within the organization through gender dynamics may evoke perceptions of structural inequality, discrimination and uncontrollability, rendering advancement less attainable in employees' eyes. Thus, the attributional framing of organizational allocation decisions has meaningful implications for how individuals understand the criteria governing advancement and their future opportunities.

Research focusing on attributions has traditionally relied on variable-centred analyses, which estimate the independent effect of each attribution separately, based on the assumption that results can be summarized through a unique set of average parameters (García-Romero & Martínez-Iñigo, 2021; Martinko et al., 2007). A person-centred approach offers a theoretically more appropriate framework, enabling the identification of distinct attributional configurations within the population – that is, groups of employees who share similar patterns of co-occurring causal explanations. This approach adopts a holistic perspective on individuals, acknowledging that a constellation of attributions may yield distinct implications when considered collectively rather than in isolation (Fouquereau et al., 2020; Morin et al., 2016). Importantly, the profiles that emerge are not derived mechanically from a priori combinations of Weiner's dimensions, but empirically identified from employees' simultaneous endorsement of the five attributional indicators, and subsequently interpreted through the lens of attribution theory.

Considering all the above, we propose the following research question:

Research question 1. *Can employees be grouped into distinct profiles based on different configurations of attributions for how they view pay rises and promotions?*

1.2. Stability of attribution profiles

Weiner (2008) stated clearly that attributions are event-based evaluations and, therefore, subject to change over time. For instance, empirical studies have confirmed that, as time passes, people make attributions that are more likely to be situational (caused by the situation) than dispositional (caused by someone's personality) for the same event (Funder & Van Ness, 1983; Robins et al., 1996). Nonetheless, there remains a shortage of studies adopting a person-centred approach to explore the stability of attribution profiles over time.

To advance our theoretical understanding of the nature and evolution of reward opportunities linked to attribution profiles, it is essential to make sense of both within-sample consistency (i.e., the stability of profiles over time) and within-person consistency (i.e., the stability of individual membership to specific profiles over time). The adoption of a longitudinal person-centred approach goes beyond simple tests of rank order and mean level longitudinal stability. This approach enables examining longitudinal stability in the structure of profiles, looking at within-sample stability in other words, whether, over time, there are the same number of profiles with similar configurations and within-profile variability and of similar sizes. It is also possible to look at whether the employees' membership to a specific profile remains stable or changes, referred to as within-person stability (Kam et al., 2016).

Studying the stability of attribution profiles is important for both theoretical and practical reasons. Theoretically, it provides insights into the nature of attributional processes: if profiles prove to be relatively stable over time, this suggests that they function like

trait-like cognitive patterns, resistant to short-term contextual variation. Conversely, if profiles are more dynamic over time and context-sensitive (as per Weiner's suggestion, this would support a state-like interpretation, implying that attributions are sensitive to recent experiences or organizational events).

Building on this trait-like versus state-like distinction, sensemaking logic also suggests an ex-ante expectation about which configurations should prove stable. Attributional patterns anchored in formal, institutionalized criteria (such as education and seniority) should be more sensitive to disconfirming signals (for instance: performance feedback, salient career experiences or observed promotions that violate rule-based expectations) because these events directly challenge the interpretive frame on which these configurations rest (Maitlis & Christianson, 2014; Weick, 1995). By contrast, meritocratic and relational-structural configurations, being anchored in more crystallized beliefs about individual competence or about structural features of the organization, should prove comparatively more stable over time.

These insights have significant implications also from a practical perspective. Indeed, most managers and practitioners tend to naturally think in terms of fixed categories (Morin et al., 2011). Thus, evidence of profile stability would support the use of these configurations as a basis for tailored and durable HR interventions, given that profiles would reflect consistent employee perspectives on pay increase and rewards policies over time. On the other hand, if attribution profiles prove to be unstable, it becomes crucial to understand what triggers these changes and in which direction, for instance, considering the role of organizational communications, individual career transitions, or evolving experiences with reward systems. This would open new avenues for dynamic, context-sensitive interventions that respond to shifting attributional patterns (Meyer & Morin, 2016).

Moreover, an important consequence of transitions between attribution profiles over time may be reflected in changes in key organizational outcomes, such as work engagement and organizational commitment. Therefore, we propose that it is essential to explore whether shifts in attribution profiles are associated with significant variations in employees' well-being and attitudinal outcomes. Gaining a better understanding of this dynamic would provide valuable insight into how employees' evolving interpretations of workplace rewards shape their broader organizational experience and could inform the design of more responsive and effective HR strategies. To our knowledge, no studies have so far dealt with (within-sample and within-person) stability over time, involving profiles where attributions (concerning things like rewards, recompenses, considerations) come into play.

To fill this gap, we advance the following research question:

Research question 2. *Do the identified attribution profiles linked to how employees view pay rises and promotions show evidence of within-sample stability, and do individuals transition from one attributional profile to another over time (within-person stability)?*

1.3. Predictors of attribution profiles

Having considered the existence and temporal nature of attributional configurations, we now turn to how they are embedded in employees' broader career and organizational context. Specifically, we investigate whether profile membership is associated with employees' personal attributes and work-related factors. We specifically consider the role played by age, gender, job weight (estimated from a person's job role), pay, gender pay gap, education, seniority and performance. Generally speaking, a person's perception of fairness may be influenced by a range of factors, which include adequate notice or perceived system knowledge, employee participation, consistent application of performance standards, linkage to rewards, perceived organizational support, trust in supervisors, and performance feedback (Erdogan et al., 2001; Levy & Williams, 1998). Additionally, demographic characteristics – such as age, gender, race, education, and job tenure – may influence perceptions relating to justice and, consequently, how individuals perceive fairness in remuneration and career progression (Kulik et al., 1996).

Empirical evidence shows that demographic characteristics – particularly gender and race – impact on perceptions of fairness. For example, an action programme to raise awareness about race could be perceived as fair or unfair depending on whether individuals benefit from this programme (Truxillo & Bauer, 1999). Leventhal and Lane (1970) showed that gender identity can influence perceptions of the equity rule of justice. However, not all members in a specific demographic group share the same perceptions about remuneration and career progression (Bauer, 1999; Crosby, 1984; Heilman et al., 1996). For instance, while men are mostly concerned with protecting their own interests when rewards are allocated, women react to distributive justice in different ways. Men tend to react more strongly to inequitable outcomes than women, a fact that may depend on gender differences in how people's work contribution are assessed. From a cognition-oriented perspective, women often expect to perform less effectively than men, and tend to attribute their success to external rather than internal factors (Major & Adams, 1983).

Similarly, in the past 40 years, research on attribution theory has identified significant relationships between individual difference variables and attributions (Martinko et al., 2006). Gender is one such variable. Empirical evidence indicates that men and women have different attribution styles when evaluating both their own performance and the performance of others (e.g., McElroy & Morrow, 1983; Molm, 1985). For instance, Feldman-Summers and Kiesler (1974) found that, when men and women performed at the same high level, observers often attributed female performance to effort and male performance to ability. This tendency was more pronounced among male raters than female raters, suggesting a potential bias in male assessments of female performance.

Age is another factor that influences self and social attributions. Meta-analytic evidence indicates that the way people explain successes and failures varies across the life span, with the magnitude of the self-serving attributional bias differing markedly across age groups (Mezulis et al., 2004). Such differences may partly reflect the broader range of outcomes and social knowledge that older people accumulate over their lifetimes (Blanchard-Fields, 1994). Additionally, Ferris et al. (1985) found that observers frequently attributed successful outcomes achieved by older employees to causes other than ability. Similarly, Banziger and Drevenstedt (1982) found that observers attributed the failures of older people to a lack of ability more frequently than they did for younger individuals.

Overall, these findings underscore the complexity of attribution processes and highlight the importance of considering individual differences in our understanding of how people explain events and outcomes.

Considering all the above, we propose the following research question:

Research question 3. *Can belonging to a particular attribution profile be predicted by age, gender, job weight, pay, gender pay gap, education, seniority, and performance?*

1.4. Attribution profiles and employee outcomes and attitudes

Beyond their antecedents, attributional configurations may also carry distinct implications for employees' attitudes toward work and the organization. In general, when decisions about salary increases and promotions are seen as unjust, those affected may experience emotions such as anger or guilt (Weiss et al., 1999). There may be cognitive distortions about inputs and outcomes (Adams, 1965; Austin & Walster, 1974), and they may make changes in their actions, including a drop in performance or withdrawal (Walster et al., 1978). Positive perceptions of distributive justice can lead to higher work performance (Adams, 1965; Austin & Walster, 1974), increased organizational citizenship behaviour, job satisfaction and organizational commitment (Cohen-Charash & Spector, 2001), with lower levels of counterproductive behaviors, withdrawal and turnover intentions (Bies & Shapiro, 1987; Greenberg & Scott, 1996; Hendrix et al., 1999).

Underlining this point, empirical research indicates that perceived distributive justice and fairness are positively associated with job satisfaction (Foley et al., 2005), contextual performance (Dongrey & Rokade, 2022), job performance (Ramos et al., 2022), engagement (Aggarwal et al., 2022; Deepa, 2020), and organizational commitment (Aggarwal et al., 2022; Dongrey & Rokade, 2022).

In line with equity theory, employees demonstrate organizational commitment and a sense of obligation toward organizations perceived to mete out fair treatment (Cohen-Charash & Spector, 2001). Differentials in salaries and discriminatory career advancement practices are the main forms of workplace discrimination (Gunderson & Lee, 2016; Palumbo & Manna, 2020), with research concentrating extensively on pay rises and promotions (Foley et al., 2002; Kräft, 2022; Russen et al., 2021). These forms of discrimination are expected to be associated with affective, cognitive, and behavioural components. Perceived gender discrimination, for instance, heightens the perception among both male and female employees that they operate within an unjust organization (Ramos et al., 2022).

Considering all the above, we propose the following research question:

Research question 4. *Are different levels of profile stability associated with varying levels of work engagement, affective organizational commitment, distributive justice, and trust in management?*

2. Overall method

2.1. Study design

This research draws on a two-wave panel conducted within a large Italian banking group. The two measurement occasions were separated by a six-month interval, a lag commonly used in organizational longitudinal research to balance sensitivity to meaningful change with practical feasibility (Ashforth & Saks, 1996; Ho, 2025; Huyghebaert-Zouagh et al., 2022; Kam et al., 2016). The interval also aligns with the organization's promotion and pay review cycles, making it theoretically appropriate to capture shifts in employees' causal interpretations of advancement decisions.

To clearly separate the exploratory and confirmatory components of our research design, we adopted a split-sample, two-study strategy applied to this two-wave panel. This approach aligns with recent recommendations in person-centered research to distinguish profile identification from hypothesis-testing procedures, thereby strengthening the robustness and replicability of findings (Duffy et al., 2022; Gu et al., 2017; Spurk et al., 2020; Woo et al., 2024). The full sample was randomly divided into two comparable subsamples.

Study 1 draws on Subsample 1 to explore whether employees' causal beliefs about promotions and pay rises coalesce into distinct attribution profiles in a strictly descriptive and exploratory fashion, without imposing constraints or assumptions across waves.

Study 2 uses Subsample 2 to replicate the profile solution in an independent sample, assess the longitudinal stability of the identified profiles, and examine how profile membership and transitions relate to theoretically relevant personal and work-related characteristics as well as attitudinal outcomes, using Latent Transition Analysis (LTA) and structural modelling techniques (Collins & Lanza, 2010; Kam et al., 2016). Taken together, this structure allows to establish whether stable and meaningful attribution profiles exist within the organization and, subsequently, evaluate their temporal dynamics and nomological network in a confirmatory framework.

2.2. Participants and procedures

The data used in this research belong to a larger longitudinal study on the engagement and well-being of employees in a major Italian bank with over 6600 employees. With the assistance of the HR department, the survey was distributed to all employees through a link sent via email.

In total, 3139 participants (mean age = 44.59; standard deviation = 10.33) took part in at least one wave of data collection. Of these, 66.96% were men and 33.04% were women, and their average tenure was 15.56 years (standard deviation = 9.74). In terms of

response, 632 (20.13%) responded only at Time 1, 1488 (47.40%) responded only at Time 2, and 1019 (32.46%) responded to both waves of data collection.

2.3. Measures

The measures described in this section were used consistently across both Study 1 and Study 2. All constructs were assessed at both time points using standardized and validated multi-item instruments, as detailed below. Attribution measures provide the basis for the Latent Profile Analyses (LPA), whereas attitudinal variables and objective indicators are primarily used in Study 2 to examine predictors and outcomes associated with profile membership and transitions.

All items in the questionnaire were assessed using a seven-point Likert scale, ranging from “strongly disagree” (1) to “strongly agree” (7), except for work engagement, which ranged from “never” (1) to “every day” (7). All respondents were sent and completed the same questionnaire. During the distribution phase, the participants were assured of the study's confidentiality. These strategies reflect standard survey practices and serve as effective tools for reducing common method bias (Chang et al., 2010).

Subsequently, the organization provided anonymized data on employee pay, job role/position, seniority, performance evaluation (on a 1 to 4 scale), and socio-demographic information such as gender, age, and level of education. Using pay and job position data, we calculated job weight from the median pay for a given position as a proxy for its importance within the organization. Additionally, we calculated the gender pay gap by determining the median pay for each position for men (M) and women (W) and then using the formula: $(M - W) / M$, in line with the standard unadjusted definition used by Eurostat (2023) and OECD (2023).

This combination of self-reported and externally validated data reflects a multi-source data strategy. Although method variance remains a potential concern, several procedural remedies were implemented – such as guaranteeing anonymity and confidentiality, independent online completion, and randomization of item order – help attenuate the risk of common method bias (Podsakoff et al., 2003). The scales used are detailed below.

2.3.1. Attributions

Building on (Weiner, 1985; Weiner et al., 1972) work, we developed a scale to measure employee attributions for decisions on salary increases and promotions. Every attributional dimension was defined a priori by drawing on attribution theory (Martinko et al., 2006; Weiner, 1985) and subsequently refined through structured consultations with experienced HR professionals. This process ensured that the selected dimensions – ability, education, networks, seniority and gender – reflected theoretically meaningful and contextually salient causal explanations within this organizational context, interpretable through Weiner's attributional dimensions of locus, stability and controllability (see Table 1). In line with this view, this research does not lie in examining each attributional dimension in isolation. Rather, consistent with a person-centered perspective, we assume that employees may simultaneously endorse multiple causal explanations when interpreting promotion and pay decisions. For this reason, the five attributional dimensions were treated as profile indicators intended to capture broader attributional configurations within individuals. To validate the dimensions, we conducted three rounds of structured discussions with a total of six HR professionals from the company in which data were collected. These professionals were selected based on their experience in promotion and talent-management decisions (ranging from 7 to 18 years). Each consultation followed a semi-structured protocol in which we asked participants to identify the key factors they believed employees attribute to promotions, to evaluate the relevance of a preliminary factor list derived from existing attributional research, and to discuss possible omissions or redundancies. Across these consultations, the five selected factors consistently emerged as the most salient and recurring categories. Although performance emerged during the structured consultations with HR professionals as a salient explanation for pay and promotion outcomes, it was excluded from the final set of attributional dimensions as a deliberate scoping decision. Consistent with attribution theory, we acknowledge that employees may directly invoke performance as a first-order causal explanation (e.g., ‘she was promoted because she performed well’) – a legitimate subjective attribution in its own right. The present study focuses instead on the broader differentiating attributional logics employees invoke to explain why some individuals advance more than others, including competence-based, institutional, relational and structural explanations, under the assumption that a baseline performance threshold is shared across employees in comparable organizational positions. This scoping decision reflects a theoretical choice, not a denial of performance's importance (see Limitations). The scale developed was included in a special section of the questionnaire, where we asked respondents to specify what, in their view, were the underlying reasons for the bank's promotions and salary increases. This scale followed the measurement procedures outlined by Martinko et al. (2006), which involve evaluating explanations for an event on a Likert scale, and was tested and validated, with factor analysis supporting a five-factor structure. The exact wording of all items is reported in the annexes (Table S1). Each attribution construct was measured using two items. While earlier methodological literature has traditionally recommended using at least three items per construct to ensure construct reliability (e.g., Hinkin, 1998), more recent studies have shown that two-item scales can be both psychometrically acceptable and practically advantageous under specific conditions (Eisinga et al., 2013; Rogers & Schmitt, 2004). In line with these recommendations, our constructs were: (a) theoretically well-defined, (b) empirically validated through confirmatory factor analysis, and (c) psychometrically robust, as evidenced by satisfactory Composite Reliability (CR), Cronbach's alpha, Average Variance Extracted (AVE), and outer loadings – all of which exceeded conventional thresholds. Full details on the items psychometric properties are reported in the annexes (Tables S2 and S3). The CR and Cronbach's alpha values, as detailed in the annexes, all fell within Hair et al., 2010 recommended cutoff range of 0.70 to 0.95, confirming the reliability of the scales. Additionally, the outer loadings and AVE values exceeded the acceptable threshold of 0.50, establishing convergent validity.

2.3.2. Distributive justice

The employees' perception of fairness was assessed using the scale proposed by Niehoff and Moorman (1993). Distributive justice refers to the perception of fairness in the distribution of outcomes and was assessed using the five-item subscale ($\alpha_{t1} = 0.815$; $\alpha_{t2} = 0.820$; e.g., "I think my pay level is fair").

2.3.3. Work engagement

The employees' work engagement was assessed using UWES-3, an ultra-short version of the Utrecht Work Engagement Scale. Developed by Schaufeli et al. (2017), UWES-3 includes three items designed to measure the core dimensions of work engagement: vigour, dedication, and absorption ($\alpha_{t1} = 0.789$; $\alpha_{t2} = 0.791$; e.g., "At work, I am bursting with energy").

2.3.4. Affective organizational commitment (AOC)

The employees' attachment to and emotional involvement with their organization was assessed using the scale developed by Allen and Meyer (1990), which includes eight items ($\alpha_{t1} = 0.912$; $\alpha_{t2} = 0.920$; e.g., "I feel emotionally attached to my organization").

2.3.5. Trust in management

The employees' trust in management was assessed using the scale developed by Gould-Williams and Davies (2005), which includes five items ($\alpha_{t1} = 0.861$; $\alpha_{t2} = 0.875$; e.g., "I trust the management of this company to take care of my interests").

2.4. Preliminary analyses, model estimation and missing data

The psychometric properties of all multi-item measures were validated through preliminary factor analyses (exploratory and confirmatory), which were conducted on the full sample ($N = 3139$), before any sample-splitting procedure. This approach not only ensures that measurement properties are tested with maximum statistical power but also avoids distortions due to subsample-specific characteristics (Huyghebaert-Zouagh et al., 2022; Meyer & Morin, 2016). Detailed results of these analyses – including descriptive statistics, factor correlations, factor structure, composite reliability and measurement invariance over time – are presented in the annexes (Tables S4 to S6). The main analyses were conducted utilizing factor scores derived from these preliminary analyses (Huyghebaert-Zouagh et al., 2022; Meyer & Morin, 2016). To ensure consistency over time, factor scores were obtained from models specified to be longitudinally invariant (Millsap, 2011) and were standardized (standard deviation = 1; mean = 0). Using factor scores helps in part to control for unreliability (Skrondal & Laake, 2001) and maintain the integrity of the measurement model, including its invariance (Morin et al., 2016).

The analyses were conducted using the Maximum Likelihood estimator with Robust standard errors (MLR) available in Mplus version 8.6 (Muthén & Muthén, 2021). Missing responses were managed using Full Information Maximum Likelihood (FIML) procedures, allowing to estimate longitudinal models that contain all the participants who responded at least once ($n = 3139$). This method uses all available data to estimate each model parameter, avoiding the need for a less optimal listwise deletion approach that includes only the participants who completed both measurements ($n = 1019$). FIML is known to be just as efficient as Multiple Imputation (MI) but requires less computational effort (Enders, 2010). Given that LPA are sensitive to the start values used during model estimation (Hipp & Bauer, 2006), all models were analysed using 5000 sets of random start values with 200 iterations each. We then carried out the final stage optimization on the 200 best solutions. For the longitudinal analyses, the numbers were 10,000, 1000, and 500, respectively.

2.5. Analytic strategy: Two-phase profile identification and validation

To strengthen the methodological rigor of the study and ensure the robustness and generalizability of the identified profiles, we implemented a two-phase analytic strategy, distinguishing between profile exploration and validation (Duffy et al., 2022; Gu et al., 2017; Herrero Romero et al., 2025; Runst & Thomä, 2023; Spurk et al., 2020; Ullrich-French & Cox, 2020).

As described in Section 2.1, the full sample was randomly partitioned into two compositionally equivalent subsamples, with Subsample 1 used for exploratory profile identification and Subsample 2 for validation, thereby reducing overfitting and enhancing replicability (Duffy et al., 2022; Gu et al., 2017). As emphasized by Spurk et al. (2020), "a replication of the same number and types of profiles across multiple samples would be important for guarding against potential overinterpretation of spurious profiles". Similarly, Runst and Thomä (2023) stress the importance of evaluating model stability and predictive accuracy across independent samples, and Ullrich-French and Cox (2020) recommend that validation efforts include checks for consistency in profile structure and interpretation.

The random split was stratified to ensure balanced distribution of key sociodemographic and organizational variables, including age, gender, tenure, job weight, gender pay gap and participation at both time points. While no formal constraints or parameter fixing were applied across subsamples, we assessed the structural robustness of the solution by evaluating the extent to which the profile solution identified in the validation phase aligned with that of the exploratory phase – both in terms of number of profiles and substantive interpretability (Duffy et al., 2022; Gu et al., 2017; Herrero Romero et al., 2025; Masyn, 2013). This approach improves internal coherence and reinforces the interpretive validity of subsequent analyses, anchoring them in a replicable and independently verified latent structure (Gu et al., 2017; Morin et al., 2016; Spurk et al., 2020). Beyond its methodological advantages, this two-phase strategy is also aligned with the theoretical objective of this study. Again, the study aims to examine whether attribution processes are structured as recurring combinations of co-endorsed explanations within individuals, rather than as independent attributional tendencies. The use of profile-based analyses, therefore, follows directly from our theoretical interest in identifying naturally occurring

attributional configurations and testing their robustness and implications over time.

3. Study 1

Study 1 examines whether employees' causal beliefs about promotions and pay rises coalesce into distinct and meaningful attribution profiles. Using Subsample 1, we estimated time-specific latent profile models based on attribution indicators related to ability, education, networking, seniority and gender. This exploratory phase focuses exclusively on identifying the latent structure of these attributions.

3.1. Participants and procedure

Study 1 draws on Subsample 1 ($N = 1540$), extracted from the overall panel described in the Method section. Subsample 1 included 66.62% men, with a mean age of 44.41 years ($SD = 10.46$) and a mean tenure of 15.28 years ($SD = 9.68$). Regarding response patterns, 318 participants (20.65%) responded only at Time 1, 738 (47.92%) only at Time 2, and 484 (31.43%) participated at both waves.

As noted, Subsample 1 was generated through a stratified random split to ensure compositional equivalence with Subsample 2 across key sociodemographic and organizational variables. This supports the validity of using Subsample 1 for exploratory purposes while reserving Subsample 2 for confirmatory analyses.

3.2. Measures

All measurement instruments used in this research are fully described in the Measures section of the overall Method. In Study 1, we used the five attribution dimensions as the profile indicators for the LPA. The remaining variables (e.g., distributive justice, work engagement, affective organizational commitment, trust in management, and objective HR data such as pay, job weight, gender pay gap, seniority, and performance) were not included in profile identification and are analysed only in Study 2.

3.3. Latent profile identification

To identify distinct attribution profiles, LPA was conducted on Subsample 1, following the methodological steps outlined in several pertinent studies (Houle et al., 2020; Huyghebaert-Zouagh et al., 2022). LPA models are designed to analyse the multivariate distribution of scores on a set of profile indicators, summarizing this distribution by identifying a finite number of latent sub-populations of participants. These profiles have unique configurations of indicators (in our study, the profiles were estimated based on attributions for promotion and salary increases), while allowing for variability within each profile on all indicators (McLachlan & Peel, 2000). These profiles are referred to as latent to reflect their probabilistic nature (Morin et al., 2018). Each participant is assigned a probability for membership in each latent profile, which helps to assess the LPA model while accounting for classification errors. Initially, time-specific LPA models were estimated using the following five indicators: attribution to ability, attribution to education, attribution to networking, attribution to seniority, and attribution to gender. At each time point, we tested various models with between one and seven profiles, allowing the means and variances of the indicators to be freely estimated (Morin & Litalien, 2019). The decision on how many profiles to retain at each time point was based on whether the profiles were meaningful, theoretically aligned, and statistically adequate (Marsh et al., 2009; Morin, 2016). Statistical indicators (McLachlan & Peel, 2000) were also consulted. For instance, lower values on the Akaike information criterion (AIC), Consistent AIC (CAIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (aBIC) indicate better fitting models. Similarly, statistically significant p -values from Lo, Mendell, and Rubin's (2001) adjusted likelihood ratio test (aLMR) and the Bootstrap Likelihood Ratio Test (BLRT) suggest a better fit compared to a model with one fewer profile. Research has demonstrated that the BIC, CAIC, aBIC, and BLRT are effective in identifying the number of latent profiles, whereas the AIC and aLMR are not as reliable (e.g., Diallo et al., 2016, 2017). Consequently, AIC and aLMR were reported for transparency but not used in the final model selection. These tests depend heavily on sample size (Marsh et al., 2009), which can lead to inconclusive results regarding the number of profiles. Lastly, we reported the entropy value, which indicates a classification accuracy of between 0 and 1. However, as it is a purely descriptive indicator, it should not be used as a criterion for determining the optimal number of profiles (Lubke & Muthén, 2007).

4. Results

4.1. Latent profile identification

The statistical indicators for each time-specific LPA solution are presented in Table 2. These indicators did not conclusively point to a single dominant solution at either time point. Both elbow plots (Fig. S1 in the annexes) revealed inflexion points corresponding to three profiles at both Time 1 and Time 2, with additional inflexion points for five profiles. Therefore, we carefully examined solutions ranging from three to five profiles. However, introducing a fourth profile typically resulted in splitting one profile into two smaller, similarly configured profiles. On this basis, we chose to retain the three-profile solution for further analyses at both time points.

Table 2

Study 1: Results from the Exploratory Latent Profile and Latent Transition Analyses.

Model	LL	#fp	S.C.	AIC	CAIC	BIC	aBIC	Entropy	aLMR	BLRT
Latent profile analysis Time 1										
1 profile	−10,869.217	10	0.9462	21,758.434	21,821.829	21,811.830	21,780.062	Na	Na	Na
2 profiles	−10,318.507	21	1.2770	20,679.014	20,812.144	20,791.145	20,724.433	0.731	≤0.001	≤0.001
3 profiles	−9943.341	27	1.3011	19,940.682	20,111.85	20,084.849	19,999.077	0.771	≤0.001	≤0.001
4 profiles	−9828.824	33	1.2616	19,723.647	19,932.853	19,899.852	19,795.019	0.769	≤0.001	≤0.001
5 profiles	−9702.512	39	1.2931	19,483.023	19,730.266	19,691.265	19,567.372	0.794	≤0.001	≤0.001
6 profiles	−9641.353	45	1.3437	19,372.706	19,657.985	19,612.985	19,470.031	0.768	≤0.001	≤0.001
7 profiles	−9539.831	51	1.4317	19,181.662	19,504.978	19,453.979	19,291.964	0.778	0.0382	≤0.001
Latent profile analysis Time 2										
1 profile	−10,886.300	10	0.8971	21,792.599	21,855.995	21,845.995	21,814.227	Na	Na	Na
2 profiles	−10,373.570	21	2.1717	20,789.140	20,922.270	20,901.270	20,834.559	0.693	0.2475	≤0.001
3 profiles	−10,019.962	27	1.3541	20,093.925	20,265.092	20,238.092	20,152.320	0.752	≤0.001	≤0.001
4 profiles	−9858.348	33	1.2778	19,782.697	19,991.901	19,958.902	19,854.069	0.784	≤0.001	≤0.001
5 profiles	−9736.369	39	1.2245	19,550.739	19,797.980	19,758.981	19,635.087	0.802	≤0.001	≤0.001
6 profiles	−9698.022	45	1.2734	19,486.044	19,771.323	19,726.323	19,583.369	0.767	0.0032	≤0.001
7 profiles	−9614.346	51	1.2940	19,330.691	19,654.008	19,603.008	19,440.993	0.818	0.0394	≤0.001
Latent profile analysis: three profiles										
Configural similarity	−19,752.669	64	1.1533	39,633.338	40,039.068	39,975.069	39,771.756	0.769	Na	Na
Structural similarity	−19,756.146	49	1.3511	39,610.292	39,920.929	39,871.929	39,716.268	0.768	Na	Na
Dispersion similarity	−19,762.501	34	1.7098	39,593.002	39,808.546	39,774.546	39,666.536	0.766	Na	Na
Distributional similarity	−18,947.571	36	1.7101	37,967.142	38,195.365	38,159.365	38,045.002	0.878	Na	Na

Note. LL: Model loglikelihood; #fp: Number of free parameters; Scaling: Scaling correction factor associated with robust maximum likelihood estimates; AIC: Akaike Information Criteria; CAIC: Constant AIC; BIC: Bayesian Information Criteria; aBIC: Sample Size Adjusted BIC.

4.2. Longitudinal similarity assessment

The fit indices for all longitudinal models are detailed in Table 2. We began with a model of configural similarity that included three profiles per time point and gradually incorporated the equality constraints. The second model, involving structural similarity, showed lower BIC and CAIC values, which supported this model. Similarly, the data supported the dispersion and distributional similarity of the solution, as indicated by lower BIC, aBIC, and CAIC values. Consequently, we retained the model of distributional similarity for interpretation and further analysis. This model is shown in Fig. 1, with detailed parameter estimates available in Table S7 in the annexes. According to Table S9 in the annexes, this solution showed high classification accuracy, with rates ranging from 92.7% to 94.0% across Time 1 profiles and from 92.2% to 94.3% at Time 2, along with a relatively high entropy value of 0.878.

These findings suggest that employees do not rely on single causal explanations in isolation when interpreting career-related decisions. Rather, their interpretations appear to cluster into broader attributional configurations characterized by distinct combinations of meritocratic, institutional, and relational-structural explanations. This pattern supports the view that attribution processes in this domain are configurational in nature. Based on our analysis, we identified three distinct attribution profiles (see Fig. 1). At both measurement times, we found similar configurations for the constructs considered.

4.2.1. Profile 1: Meritocratic attributors

At both measurement times, this profile shows high levels of attribution to ability, combined with lower levels of attribution to education and seniority, and minimal attribution to networking and gender. This configuration, which accounts for 23.12% of participants, reflects a pattern centred on internal, competence-based explanations for promotions and salary increases. The structure of this profile aligns with attribution theory's emphasis on ability as a stable, internal cause. Individuals in this group tend to interpret career advancement as primarily driven by performance and capability rather than contextual or relational factors. For instance, employees with this attributional pattern are more likely to ascribe a promotion to the candidate's performance or task-related competence. Given its strong internal orientation, this profile represents a relatively coherent attributional configuration, which may have implications for how stable such interpretations remain over time – an issue examined in Study 2.

4.2.2. Profile 2: Institutional attributors

This profile, comprising 54.91% of participants, is characterized by elevated attributions to education and seniority, accompanied by moderate levels of attribution to ability and lower levels of attribution to networking and gender. Members of this group consider multiple determinants of promotions and salary increases, but place a predominant emphasis on formal qualifications and length of service. The configuration resonates with more institutionalized interpretations of career progression, typically associated with tenure-based or credential-based systems. For instance, employees in this group may view advancements as reflective of established career paths, accumulated experience, or credential requirements. As discussed in Study 2, this profile presents particular interest because its relative emphasis on institutional factors may be more susceptible to variation in the presence of new organizational information or experiences, with potential implications for its temporal dynamics.

4.2.3. Profile 3: Relational-structural attributors

This profile, representing 21.97% of participants, exhibits high attributions to networking and gender and very low attribution to ability. Employees with this pattern view career-related decisions as strongly shaped by relational and social dynamics, such as access to informal networks or perceived gender-related advantages or disadvantages. The attributional structure reflects a more contextualized and externally oriented perspective, consistent with theoretical approaches that emphasize the role of social capital, visibility, or structural biases in shaping career outcomes. For instance, these employees may interpret promotions as partly contingent on relational resources rather than on competence alone. Because this profile captures a cluster of socially anchored attributions, its

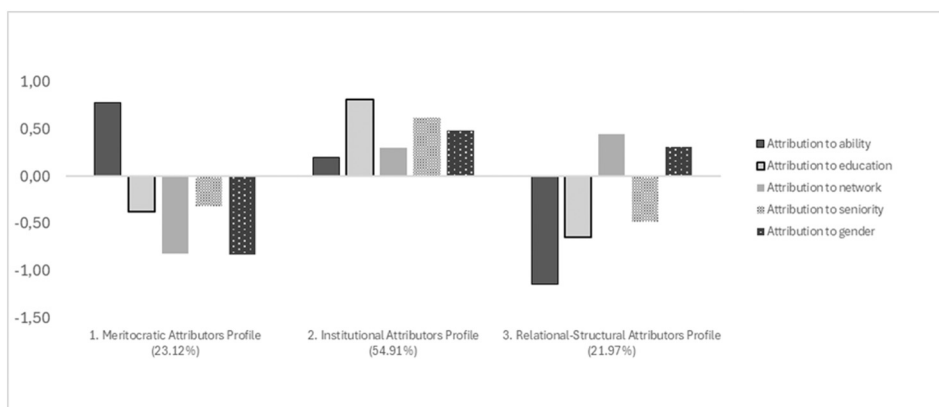


Fig. 1. Study 1: Final 3-Profile Solution of Distributional Similarity.

Note. Profile indicators are factor scores with a mean of 0 and standard deviation of 1.

temporal behaviour is examined in Study 2 to assess the extent to which such interpretations persist or change over time.

4.3. Discussion

The findings from Study 1 provide initial empirical support for our central theoretical argument: employees' causal interpretations of pay rises and promotions are not organized as isolated attributional judgments but as broader configurational patterns in which multiple co-occurring explanations form distinct interpretive schemas.

Three recurring profiles emerged consistently at both measurement occasions, each reflecting a theoretically distinguishable interpretive logic. The *meritocratic attributors* profile – characterized by high ability attributions and low emphasis on institutional, relational, and structural factors – aligns with the prototypical internal, stable and moderately controllable causal structure described in [Weiner's \(1985\)](#) framework. This profile captures a competence-centered interpretive logic in which career advancement is understood primarily as a function of individual skill, with limited attribution to context or social dynamics.

The *institutional attributors* profile – centered on education and seniority, with moderate ability attributions – reflects a formalized, rule-based interpretive schema. As argued in the Theoretical Background, this profile captures an institutionalized logic of advancement in which formal credentials and organizational tenure are seen as the primary determinants of career outcomes. Importantly, this profile occupies a theoretically distinct position that is not reducible to an internal or external label: education functions as an achievement-based internal signal, while seniority reflects an external organizational rule. Their co-occurrence within a single profile suggests a coherent institutional interpretive frame that variable-centered analyses would fail to detect.

The *relational-structural attributors* profile – with high attributions to networking and gender – reflects an externally-oriented and structurally anchored interpretive schema. Employees in this group explain career outcomes through relational capital and perceived organizational or societal biases, consistent with an external, stable and largely uncontrollable attributional logic.

Together, these three profiles confirm that attributional reasoning about pay and promotions is configurational in nature, as anticipated by our theoretical framework. They also demonstrate the added value of the person-centered approach: the institutional attributors profile, in particular, would be invisible to variable-centered analyses that treat each attribution independently.

5. Study 2

Study 2 builds on the exploratory findings of Study 1 to examine the robustness and implications of the identified attribution profiles. Using Subsample 2, we first tested whether the three-profile solution can be replicated in an independent sample. We then investigated the longitudinal stability of these profiles by estimating transition probabilities over time and analysed how profile membership and transitions are associated with key personal and work-related characteristics as well as attitudinal outcomes (work engagement, affective organizational commitment, distributive justice, and trust in management).

5.1. Participants and procedure

Study 2 relied on Subsample 2 ($N = 1599$), which was drawn from the same organization, timeframe, and data collection procedures as described in Study 1. In this subsample, 67.29% of participants were men, the mean age was 44.76 years ($SD = 10.19$), and the mean tenure was 15.83 years ($SD = 9.78$). A total of 314 participants (19.64%) responded only at Time 1, 750 (46.91%) only at Time 2, and 535 (33.46%) responded at both time points. Apart from the different subsample, the procedures were identical to those used in Study 1. As noted, the stratified random split ensured that Subsample 2 was compositionally equivalent to Subsample 1 on key sociodemographic and organizational characteristics, supporting the use of Subsample 2 for confirmatory and longitudinal analyses.

5.2. Measures

The same measurement instruments described in Study 1 were used in Study 2.

5.3. Profile replication and longitudinal stability

To validate the profile structure identified in Study 1, the same LPA procedures were applied to Subsample 2. This step aimed to confirm whether the same number and types of attribution profiles could be replicated in an independent sample, thereby strengthening the structural validity and generalizability of the solution ([Duffy et al., 2022](#); [Gu et al., 2017](#); [Herrero Romero et al., 2025](#); [Runst & Thomä, 2023](#); [Spurk et al., 2020](#); [Ullrich-French & Cox, 2020](#)). Once profile replication was established, we proceeded to examine the longitudinal stability of these profiles across the two time points in Subsample 2. In the context of profile stability, it is important to recognize that there are no established guidelines for interpreting what constitutes a high, low, or moderate rate of stability, as highlighted by [Huyghebaert-Zouagh et al. \(2022\)](#). The interpretations can vary from study to study, depending on the time interval and relative stability of the profiles. In keeping with [Huyghebaert-Zouagh et al. \(2022\)](#), we propose that stability rates of 70% or higher may indicate high levels of stability. Assuming the same number of profiles are identified at both time points ([Morin & Wang, 2016](#)), the two time-specific LPA solutions are merged into a longitudinal LPA to assess within-sample profile consistency over time. Following the recommendations of [Morin et al. \(2016\)](#) and adapted for longitudinal analysis by [Morin and Litalien \(2019\)](#), this approach begins by verifying whether the same number of profiles is found at each measurement occasion. The two time-specific solutions are then integrated into a longitudinal model to test for configuration similarity. Equality constraints are subsequently

applied to within-profile means (structural similarity), variances (dispersion similarity), and sizes (distributional similarity). The CAIC, BIC, and aBIC indices are employed to compare these models, with each form of profile similarity being confirmed if at least two of these indices decrease upon the application of equality constraints (Houle et al., 2020; Meyer & Morin, 2016). The longitudinal LPA solution that shows the greatest similarity will then be re-expressed as a LTA to examine within-person stability and transitions in profile membership (Collins & Lanza, 2010; Morin & Litalien, 2019). This LTA solution, along with all subsequent analyses, will be specified using the manual three-step approach (Asparouhov & Muthén, 2014) outlined by Morin and Litalien (2019). To examine whether sociodemographic and organizational characteristics were associated with transitions between profiles, we incorporated covariates into the LTA using the manual three-step approach (Asparouhov & Muthén, 2014). This method accounts for classification uncertainty and estimates the effects of covariates on individuals' probabilities of transitioning from one profile to another between Time 1 and Time 2. Covariate effects were modelled using multinomial logistic regressions embedded within the LTA framework, following guidelines for longitudinal extensions of person-centered analyses (Morin & Litalien, 2019). No equality constraints were imposed across time or across transitions, allowing covariates to exert distinct effects on each specific transition pathway.

5.4. Associations with predictors and outcomes

Building on the profile solution replicated in Study 2, we examined the stability of the relationships between profiles, predictors (predictive similarity), and outcomes (explanatory similarity) over time. The predictors analysed consisted of age, gender, job weight, pay, gender pay gap, education, seniority, and performance, while the outcomes were distributive justice, work engagement, affective organizational commitment, and trust in management. First, a null effects model was estimated, which assumed no relationships between these predictors and the profiles. Subsequently, we freely estimated the effects of these predictors, allowing them to vary over time and on the basis of profile membership at Time 1, in order to evaluate their associations with specific profile transitions. In the third model, the predictions were permitted to vary over time only. Lastly, a model of predictive similarity was estimated by constraining these associations to remain constant over time. Time-specific outcomes (distributive justice, work engagement, affective organizational commitment, and trust in management) were directly included in the final LTA and were allowed to vary according to the participants' profile membership at the same time point. Outcome measures at Time 2 were controlled for their shared variance with their Time 1 counterparts (i.e., stability) due to their joint inclusion in the model. Explanatory similarity was then assessed by constraining these associations to be equal over time. The multivariate delta method was employed to test the statistical significance of differences in outcome levels between profiles (Raykov & Marcoulides, 2004).

6. Results

6.1. Profile replication and longitudinal stability

To validate the profile structure identified in Study 1, we first replicated the LPA procedures on Subsample 2 ($N = 1599$). The results of these analyses are reported in Table 3. Although the model fit indices did not point to a single dominant solution, the elbow plots depicted in Fig. S2 (in the annexes) reveal inflexion points at both the three-profile and five-profile solutions – closely mirroring the patterns observed in Study 1. As in the exploratory phase, we carefully evaluated models ranging from three to five profiles and ultimately retained the three-profile solution based on its superior theoretical interpretability and parsimony.

Importantly, the profiles identified in this validation sample were structurally and interpretively identical to those derived in Study 1. Fig. 2 illustrates the replication of the same three attributional configurations: the *meritocratic attributors*, *institutional attributors*, and *relational-structural attributors* profiles. This replication strengthens the generalizability and structural robustness of the solution across independent subsamples.

Having validated the latent structure, we proceeded to assess the longitudinal stability of attribution profiles using LTA in Subsample 2. Transition probabilities for the final model are presented in Table 4. Membership to the *relational-structural attributors* profile showed the highest stability over time (99.6%), followed by the *meritocratic attributors* profile (96.9%). By contrast, membership in the *institutional attributors* profile was considerably less stable (53.7%). These results indicate an overall high level of stability, while also highlighting that the *institutional attributors* profile represents a more dynamic configuration. Consistent with this pattern, our analyses revealed notable transitions out of the *institutional attributors* profile over time. Specifically, 24.0% of individuals initially in this profile at Time 1 transitioned to the *meritocratic attributors* profile at Time 2, and 22.3% transitioned to the *relational-structural attributors* profile. Although these pathways were the most prominent, the transition estimates also indicated the presence of less frequent movements in other directions. This suggests that attributional configurations may shift both toward and away from particular patterns over time, even if some transitions are clearly more likely than others.

Fig. 3 visualizes the longitudinal transition flows between profiles through a Sankey diagram, depicting the relative magnitude and direction of movements from Time 1 to Time 2.

To better understand which individual and organizational characteristics were related to changes in attribution profiles over time, we examined the effects of covariates on transitions. The results, reported in Table 5, indicate that the *institutional attributors* profile was particularly sensitive to several predictors when compared to the more stable *meritocratic attributors* and *relational-structural attributors* profiles. Performance emerged as the strongest correlate of transitioning away from the *institutional attributors* profile. Higher-performing employees were significantly more likely to move from the *institutional attributors* profile to the *meritocratic attributors* profile. Job weight and education level also showed significant associations: employees with higher job weight or higher educational qualifications showed greater probabilities of transitioning from *institutional attributors* profile to *meritocratic attributors*

Table 3

Study 2: Results from the Confirmatory Latent Profile and Latent Transition Analyses.

Model	LL	#fp	S.C.	AIC	CAIC	BIC	aBIC	Entropy	aLMR	BLRT
Latent profile analysis Time 1										
1 profile	−11,397.869	10	0.9844	22,815.738	22,879.509	22,869.509	22,837.741	Na	Na	Na
2 profiles	−10,801.128	21	1.1660	21,644.256	21,778.176	21,757.175	21,690.463	0.745	≤0.001	≤0.001
3 profiles	−10,465.875	27	1.4732	20,985.751	21,157.933	21,130.933	21,045.160	0.761	≤0.001	≤0.001
4 profiles	−10,321.237	33	1.5116	20,708.474	20,918.919	20,885.919	20,781.085	0.762	0.0447	≤0.001
5 profiles	−10,299.869	39	1.2781	20,677.739	20,926.446	20,887.447	20,763.552	0.807	≤0.001	≤0.001
6 profiles	−10,131.234	45	1.2648	20,352.468	20,639.439	20,594.439	20,451.483	0.807	≤0.001	≤0.001
7 profiles	−10,055.727	51	1.3918	20,213.455	20,538.688	20,487.689	20,325.672	0.787	0.0082	≤0.001
Latent profile analysis Time 2										
1 profile	−11,380.828	10	0.9066	22,781.655	22,845.427	22,835.426	22,803.658	Na	Na	Na
2 profiles	−10,768.832	21	1.0151	21,579.663	21,713.584	21,692.583	21,625.870	0.756	≤0.001	≤0.001
3 profiles	−10,439.853	27	1.2663	20,933.705	21,105.889	21,078.888	20,993.114	0.759	≤0.001	≤0.001
4 profiles	−10,315.234	33	1.3037	20,696.468	20,906.913	20,873.913	20,769.079	0.776	≤0.001	≤0.001
5 profiles	−10,260.240	39	1.3788	20,598.480	20,847.188	20,808.189	20,684.293	0.775	0.0749	≤0.001
6 profiles	−10,145.205	45	1.2438	20,380.409	20,667.381	20,622.380	20,479.424	0.762	≤0.001	≤0.001
7 profiles	−10,046.679	51	1.3357	20,195.359	20,520.592	20,469.593	20,307.576	0.790	≤0.001	≤0.001
Latent profile analysis: three profiles										
Configural similarity	−20,736.150	64	1.2134	41,600.301	42,008.437	41,944.437	41,741.122	0.753	Na	Na
Structural similarity	−20,739.935	49	1.4315	41,577.870	41,890.350	41,841.349	41,685.686	0.752	Na	Na
Dispersion similarity	−20,743.599	34	1.7952	41,555.197	41,772.021	41,738.020	41,630.008	0.751	Na	Na
Distributional similarity	−19,945.310	36	1.8576	39,962.621	40,192.197	40,156.197	40,041.833	0.863	Na	Na
Latent transition analysis with predictors										
Null effects model	−19,296.062	36	1.9242	38,664.124	38,893.701	38,856.510	38,742.147	0.863	Na	Na
Effects free across time and profiles	−18,915.466	116	0.9477	38,062.933	38,802.680	38,682.845	38,314.341	0.933	Na	Na
Effects free across time	−18,953.229	68	1.6012	38,042.459	38,476.103	38,405.855	38,189.836	0.931	Na	Na
Predictive similarity	−19,203.927	52	1.7365	38,511.854	38,843.465	38,789.746	38,624.554	0.867	Na	Na
Latent transition analysis with outcomes										
Effects free across time and profiles	−33,510.264	70	1.5634	67,160.527	67,606.927	67,536.927	67,314.551	0.953	Na	Na
Explanatory similarity	−33,762.030	56	2.1121	67,636.059	67,993.179	67,937.179	67,759.278	0.912	Na	Na

Note. LL: Model loglikelihood; #fp: Number of free parameters; Scaling: Scaling correction factor associated with robust maximum likelihood estimates; AIC: Akaike Information Criteria; CAIC: Constant AIC; BIC: Bayesian Information Criteria; aBIC: Sample Size Adjusted BIC.

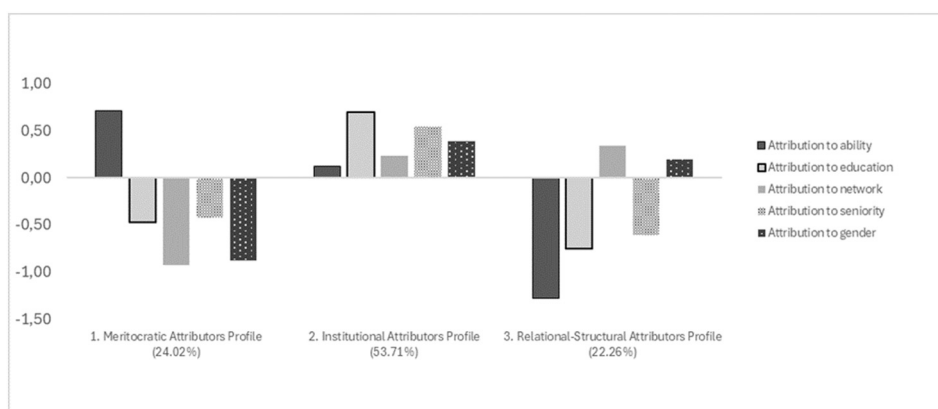


Fig. 2. Study 2: Final 3-Profile Solution of Distributional Similarity.

Note. Profile indicators are factor scores with a mean of 0 and standard deviation of 1.

Table 4

Study 2: Transition Probabilities for the Final Latent Transition Analysis Model.

Probability of Transitioning to a Different Profile at Time 2				
	Profile 1	Profile 2	Profile 3	
Time 1				
Profile 1. Meritocratic attributors	0.969	0.027	0.005	
Profile 2. Institutional attributors	0.240	0.537	0.223	
Profile 3. Relational-structural attributors	0.004	0.000	0.996	

profile or *relational-structural* profile, respectively. Gender played a role as well. Men were more likely to transition from *institutional attributors* profile to *meritocratic attributors* profile than women, suggesting gendered dynamics in how employees reconsider attribution processes over time. Age and seniority also contributed modestly: older or more senior employees showed higher stability within *institutional attributors* profile and lower likelihood of transitioning to other profiles. Taken together, these results suggest that employees who possess stronger performance signals, higher organizational responsibility, or higher educational attainment are more likely to shift away from an institutional interpretation of career advancement toward either a more meritocratic or more relational-structural attribution pattern.

6.2. Predictors of profile membership

Following the validation of the latent profile structure and the examination of longitudinal transitions, we tested whether the identified profiles could be meaningfully differentiated based on key individual and organizational characteristics. The model where the effects were free across time gave the lowest values for the information criteria and was therefore retained (see Table 3). Table 6 presents the results from the multinomial logistic and multiple regressions predicting profile membership for both Time 1 and Time 2. Education emerged as a consistent predictor across both time points. Specifically, higher education levels were associated with a lower likelihood of belonging to the *meritocratic attributors* profile compared to the *relational-structural attributors* profile ([Odds Ratio = OR] = 0.825 at Time 1; OR = 0.829 at Time 2), and to the *institutional attributors* profile compared to the *relational-structural attributors* profile (OR = 0.801 at Time 1; OR = 0.960 at Time 2).

At Time 1, significant differences emerged based on age, gender, job weight, seniority and performance. Older participants were more likely to belong to the *institutional attributors* profile than to the *relational-structural attributors* one (OR = 1.460), and less likely to belong to the *meritocratic attributors* profile than to the *institutional attributors* one (OR = 0.737). Gender played a notable role, with men more likely to belong to the *meritocratic attributors* profile than to the *relational-structural attributors* one (OR = 1.548), and also more likely to belong to the *meritocratic attributors* profile than to the *institutional attributors* one (OR = 1.603). Job weight significantly increased the likelihood of membership in the *meritocratic attributors* profile compared to both the *relational-structural attributors* (OR = 2.194) and *institutional attributors* (OR = 1.835) profiles. Seniority increased the likelihood of being in the *meritocratic attributors* profile compared to the *institutional attributors* one (OR = 1.780), and reduced the likelihood of being in the *institutional attributors* profile compared to the *relational-structural attributors* one (OR = 0.473). Performance increased the likelihood of membership in the *meritocratic attributors* profile compared to the *relational-structural attributors* one (OR = 1.279), and in the *institutional attributors* profile compared to the *relational-structural attributors* one (OR = 1.357).

At Time 2, many of the same predictors remained significant, with some shifts. Older participants were more likely to belong to the *institutional attributors* profile than to the *meritocratic attributors* one (OR = 0.698), and less likely to belong to the *meritocratic attributors* profile than to the *relational-structural attributors* one (OR = 0.698). Gender remained a significant predictor, with men more likely to

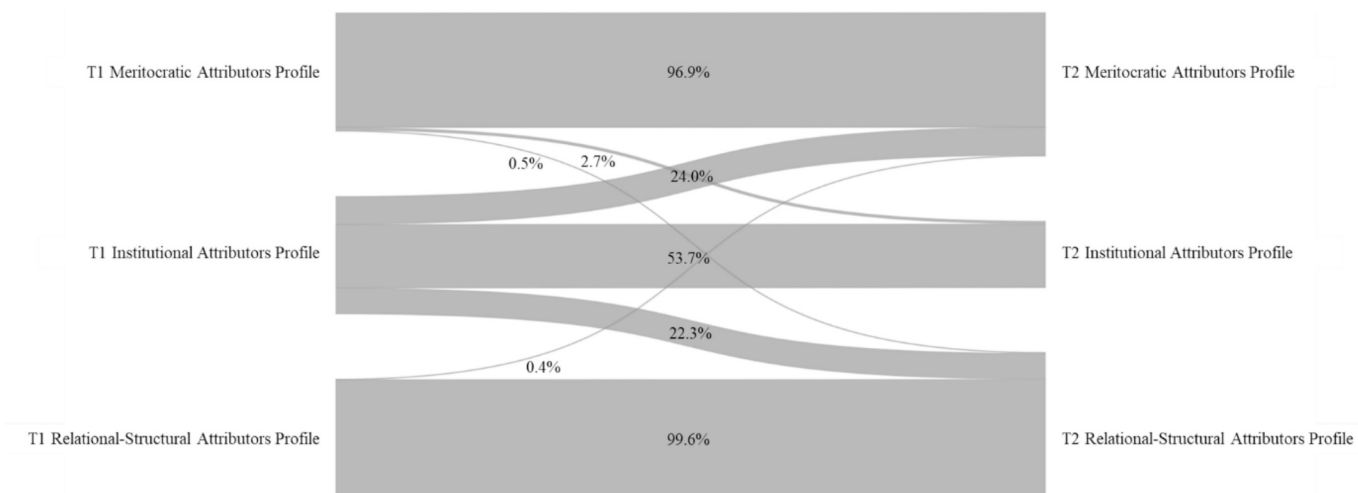


Fig. 3. Study 2: Transition Probabilities Between Attribution Profiles from Time 1 to Time 2.

Note. Values indicate estimated transition probabilities from the LTA. The width of each flow is proportional to the probability of transitioning from a given profile at Time 1 to a profile at Time 2.

Table 5

Study 2: Predictors of Transitions from the Institutional Attributors Profile.

	Profile 1 vs Profile 3		Profile 2 vs Profile 3		Profile 1 vs Profile 2	
	Coeff (SE)	OR	Coeff (SE)	OR	Coeff (SE)	OR
Age	−0.124 (0.227)	0.883	−0.199 (0.212)	0.820	0.074 (0.171)	1.077
Gender	0.234 (0.347)	1.264	−0.262 (0.324)	0.769	0.497 (0.231) ^b	1.643
Pay	0.263 (0.391)	1.300	0.121 (0.353)	1.128	0.142 (0.263)	1.152
Job Weight	0.195 (0.421)	1.216	0.598 (0.370) ^c	1.819	−0.403 (0.305)	0.668
Gender pay gap	0.144 (0.188)	1.154	0.140 (0.169)	1.150	0.004 (0.122)	1.004
Seniority	−0.234 (0.186)	0.791	−0.037 (0.164)	0.963	−0.197 (0.142)	0.822
Education	−0.045 (0.117)	0.956	−0.175 (0.106) ^c	0.839	0.130 (0.081) ^c	1.139
Performance	−0.493 (0.182) ^a	0.611	−0.338 (0.173) ^c	0.713	−0.154 (0.117)	0.857

Note. SE: standard error of the coefficient; OR: Odds Ratio. Coefficients and OR refer to the increased likelihood of belonging to the first profile in each pair compared to the second profile.

Gender coded 0 = women, 1 = men. Education coded 1 = High school diploma, 2 = Bachelor's degree, 3 = First-level master's degree (Italian system), 4 = Master's/Specialist degree.

Profile 1: meritocratic attributors profile; Profile 2: institutional attributors profile; Profile 3: relational-structural attributors profile.

^a $p < .01$.

^b $p < .05$.

^c $p < .10$.

Table 6

Study 2: Results from the Multinomial Logistic and Multiple Regressions Predicting Profile Membership.

Time 1	Profile 1 vs Profile 3		Profile 2 vs Profile 3		Profile 1 vs Profile 2	
	Coeff (SE)	OR	Coeff (SE)	OR	Coeff (SE)	OR
Age	0.073 (0.205)	1.076	0.378 (0.139) ^a	1.460	−0.305 (0.151) ^b	0.737
Gender	0.437 (0.219) ^b	1.548	−0.075 (0.182)	0.928	0.472 (0.202) ^b	1.603
Pay	−0.181 (0.302)	0.834	0.037 (0.222)	1.038	−0.218 (0.206)	0.804
Job weight	0.786 (0.401) ^b	2.194	0.054 (0.268)	1.056	0.607 (0.212) ^a	1.835
Gender pay gap	0.054 (0.120)	1.056	0.059 (0.094)	1.061	−0.005 (0.076)	0.995
Seniority	−0.342 (0.168) ^b	0.710	−0.748 (0.118) ^a	0.473	0.576 (0.121) ^a	1.780
Education	−0.193 (0.077) ^b	0.825	−0.222 (0.069) ^a	0.801	0.021 (0.058)	1.021
Performance	0.246 (0.121) ^b	1.279	0.305 (0.077) ^a	1.357	0.069 (0.090)	1.071

Time 2	Profile 1 vs Profile 3		Profile 2 vs Profile 3		Profile 1 vs Profile 2	
	Coeff (SE)	OR	Coeff (SE)	OR	Coeff (SE)	OR
Age	−0.360 (0.183) ^b	0.698	0.132 (0.124)	1.141	−0.360 (0.181) ^b	0.698
Gender	0.418 (0.210) ^b	1.519	0.122 (0.155)	1.129	0.398 (0.202) ^b	1.489
Pay	−0.144 (0.268)	0.866	−0.028 (0.284)	0.972	−0.115 (0.358)	0.891
Job weight	0.815 (0.404) ^b	2.259	0.281 (0.293)	1.325	0.521 (0.381)	1.684
Gender pay gap	0.082 (0.091)	1.086	−0.023 (0.090)	0.977	0.105 (0.125)	1.111
Seniority	−0.327 (0.162) ^b	0.721	−0.245 (0.108) ^b	0.783	0.217 (0.154) ^b	1.242
Education	−0.188 (0.075) ^b	0.829	−0.041 (0.053) ^c	0.960	−0.081 (0.075)	0.922
Performance	0.241 (0.118) ^b	1.273	0.251 (0.072) ^a	1.285	0.146 (0.117)	1.157

Note. SE: standard error of the coefficient; OR: Odds Ratio. The coefficients and OR reflect the effects of the predictors on the greater likelihood of belonging to the first profile in the list than to the second profile in the list; gender was coded as 0 for women and 1 for men; education was coded as follows: 1 = High school diploma, 2 = Bachelor's degree, 3 = First-level master's degree (Italian system), 4 = Specialist/master's degree; Profile 1: meritocratic attributors profile; Profile 2: institutional attributors profile; Profile 3: relational-structural attributors profile.

^a $p < .01$.

^b $p < .05$.

^c $p < .10$.

belong to the *meritocratic attributors* profile than to both the *relational-structural attributors* (OR = 1.519) and *institutional attributors* (OR = 1.489) profiles. Job weight continued to predict a higher likelihood of membership in the *meritocratic attributors* profile compared to both the *relational-structural attributors* (OR = 2.259) and *institutional attributors* (OR = 1.684) profiles. Seniority increased the likelihood of being in the *meritocratic attributors* profile compared to the *institutional attributors* one (OR = 1.242), and reduced the likelihood of being in the *institutional attributors* profile compared to the *relational-structural attributors* one (OR = 0.783). Performance continued to increase the likelihood of membership in the *meritocratic attributors* profile compared to the *relational-structural attributors* one (OR = 1.273), and in the *institutional attributors* profile compared to the *relational-structural attributors* one (OR = 1.285).

In contrast, pay and the gender pay gap were not significant predictors of profile membership at either time point, suggesting that these factors did not play a decisive role in determining profile allocation in this analysis.

6.3. Associations with outcomes

The model in which the effects were free across time and profiles was the one that produced the lowest values for the information criteria and was thus supported by data (see Table 3). Consequently, we report the data for Time 1 and Time 2, even though the patterns are consistent across both times. The profile-specific outcome levels are given in Table 7. The results revealed clear differences across all profiles. The highest levels of distributive justice were observed in the *meritocratic attributors* profile, followed by the *institutional attributors* profile and, lastly, by the *relational-structural attributors* profile. Significant differences were found between all profiles, indicating that the *meritocratic attributors* profile was associated with significantly higher levels of distributive justice than the *institutional attributors* profile, which, in turn, was associated with higher levels of distributive justice than the *relational-structural attributors* profile ($1 > 2 > 3$). Similarly, the highest levels of work engagement were found in the *meritocratic attributors* profile, followed by the *institutional attributors* profile, and lastly by the *relational-structural attributors* profile. Again, significant differences were observed between the profiles, supporting the $1 > 2 > 3$ ranking of profiles. For affective organizational commitment, the *meritocratic attributors* profile exhibited the highest levels, followed by the *institutional attributors* profile, with the *relational-structural attributors* profile showing the lowest levels of affective commitment. The differences between all profiles were statistically significant, reinforcing the profile ordering of $1 > 2 > 3$. In terms of trust in management, the highest levels were also seen in the *meritocratic attributors* profile, followed by the *institutional attributors* profile, and lastly the *relational-structural attributors* profile. All differences between the profiles were statistically significant, again retaining the $1 > 2 > 3$ profile order.

Regarding the changes between Time 1 and Time 2, the analysis shows that, while the overall patterns across profiles remained stable ($1 > 2 > 3$), there were no significant changes between Time 1 and Time 2 for work engagement, distributive justice, or trust in management in any of the profiles. However, there was a marginal increase in affective organizational commitment and distributive justice from Time 1 to Time 2 in the *institutional attributors* profile. These results suggest that in certain profiles, particularly the *institutional attributors* one, specific attitude-related outcomes become more pronounced over time.

6.4. Discussion

Study 2 extends the findings of Study 1 in three important ways. First, by replicating the three-profile solution in an independent subsample, it confirms the structural robustness and generalizability of the attribution profiles identified in the exploratory phase. The fact that the same meritocratic, *institutional attributors*, and *relational-structural* configurations emerge again supports the idea that these patterns capture meaningful and recurrent attributional tendencies rather than sample-specific artefacts.

Second, the latent transition analyses show that profile membership is not random over time. Some profiles – such as the *meritocratic* and *relational-structural* profiles – tend to be relatively stable, whereas others – such as the *institutional attributors* – exhibit more mobility. This suggests that institutionalized attribution patterns may be more susceptible to change considering new information or experiences, whereas the *meritocratic attributors* and *relational-structural* configurations tend to crystallize over time. Third, Study 2 demonstrates that attribution profiles are systematically related to both predictors and outcomes. Personal and work-related factors – such as education, seniority, job weight and performance – help explain who is more likely to remain in or transition between

Table 7

Study 2: Associations Between Profile Membership and the Outcomes Taken from the Model Where the Effects Are Free Across Time and Profiles.

	Profile 1 M [CI]	Profile 2 M [CI]	Profile 3 M [CI]	Summary of significant differences
Time 1				
Work Engagement (WE_1)	0.781 [0.725; 0.837]	0.095 [0.023; 0.166]	−1.164 [−1.289; −1.039]	$1 > 2 > 3$
Affective Organizational Commitment (AOC_1)	0.830 [0.781; 0.878]	0.089 [0.021; 0.158]	−1.190 [−1.330; −1.049]	$1 > 2 > 3$
Distributive Justice (DJ_1)	0.966 [0.903; 1.028]	0.013 [−0.061; 0.087]	−1.293 [−1.394; −1.193]	$1 > 2 > 3$
Trust in Management (MT_1)	0.964 [0.918; 1.011]	0.096 [0.028; 0.164]	−1.412 [−1.527; −1.296]	$1 > 2 > 3$
Time 2				
Work Engagement (WE_2)	0.787 [0.730; 0.844]	0.114 [0.038; 0.190]	−1.140 [−1.265; −1.016]	$1 > 2 > 3$
Affective Organizational Commitment (AOC_2)	0.821 [0.771; 0.871]	0.111 [0.040; 0.181]	−1.165 [−1.304; −1.026]	$1 > 2 > 3$
Distributive Justice (DJ_2)	0.937 [0.874; 0.999]	0.043 [−0.032; 0.118]	−1.288 [−1.392; −1.184]	$1 > 2 > 3$
Trust in Management (MT_2)	0.958 [0.913; 1.003]	0.107 [0.041; 0.173]	−1.429 [−1.560; −1.298]	$1 > 2 > 3$
Significance of changes T1 vs T2	WE_1 = WE_2 AOC_1 = AOC_2 DJ_1 = DJ_2 MT_1 = MT_2	WE_1 = WE_2 AOC_1 < AOC_2 DJ_1 ≤ DJ_2 MT_1 = MT_2	WE_1 = WE_2 AOC_1 = AOC_2 DJ_1 = DJ_2 MT_1 = MT_2	

Note. M: Mean; [CI]: 95% Confidence Interval; Outcomes are factor scores with a mean of 0 and standard deviation of 1; Profile 1: meritocratic attributors profile; Profile 2: institutional attributors profile; Profile 3: relational-structural attributors profile.

profiles, while attitudinal outcomes (work engagement, affective organizational commitment, distributive justice and trust in management) consistently differ across profiles.

Taken together, these findings reinforce the idea that attribution processes are configurational rather than purely dimensional. Not only do employees combine multiple causal explanations into recurring patterns, but these patterns also differ in their temporal stability and in their associations with individual characteristics and work-related attitudes. This highlights the added value of the profile-based approach, which captures attribution processes as broader interpretive systems rather than as isolated beliefs.

7. General discussion and conclusions

7.1. Theoretical contributions

First, our findings advance attribution theory by demonstrating that employees' causal interpretations of pay rises and promotions are organized not merely as isolated attributions, but as broader configurations of co-occurring explanations. Rather than relying on a single causal account, employees appear to combine meritocratic, institutional, and relational-structural explanations into distinct interpretive patterns. Specifically, we identified three attribution profiles reflecting distinct interpretive logics through which employees make sense of pay and promotion decisions. Employees in the *meritocratic attributors profile* interpret pay and promotion outcomes primarily through ability-based explanations, reflecting a competence-centered logic in which career advancement is seen as the result of individual skill and proven performance. Employees in the *institutional attributors profile* attribute career-related decisions to education and seniority, reflecting a rule-based and tenure-centered interpretive logic in which formal credentials and accumulated organizational experience are seen as the primary drivers of advancement. Employees in the *relational-structural attributors profile* interpret career outcomes as heavily shaped by relational dynamics (e.g., personal networks) and perceived structural factors (e.g., gender bias), reflecting an explanatory logic grounded in social context and organizational inequality. Crucially, these profiles are not reducible to a simple internal-versus-external distinction. The *institutional attributors profile* represents a theoretically distinct and previously underexplored attributional logic, positioned between internal and external explanations but anchored in stable, formalized, and institutionally legitimized criteria. This hybrid configuration would remain largely invisible in variable-centered approaches, which treat each attribution independently, thereby confirming the value of the person-centered perspective adopted here. By contrast, our findings show that attributional reasoning is structured around coherent interpretive systems that differ in their underlying logic, stability, and implications. Our results therefore, extend attribution theory by demonstrating that causal interpretations in organizational settings are configurational in nature, reflecting structured cognitive frameworks rather than isolated judgments — an insight that would be obscured by examining each attribution dimension in isolation. Our findings also contribute to organizational justice research by clarifying the theoretically distinct role of attribution processes relative to fairness evaluations. Attributional profiles represent a preceding interpretive layer — capturing *why* employees believe outcomes occurred — that is conceptually prior to, and distinct from, evaluative judgments about whether those outcomes were fair. This distinction allows us to link attribution theory with organizational justice in a theoretically precise way, responding to calls in the introduction for an interpretive layer that precedes fairness evaluations and explains how employees make sense of HR decisions before they appraise them.

Second, our results reveal a strong profile stability for the *meritocratic attributors* and the *relational-structural attributors* profiles, whereas the *institutional attributors* profile shows a relatively lower stability. This asymmetry admits a sensemaking interpretation: configurations anchored in formal-institutional criteria rest on rule-based expectations that salient career events — performance feedback, observed promotions, role changes — can directly disconfirm, prompting reinterpretation (Maitlis & Christianson, 2014; Weick, 1995). Meritocratic and relational-structural configurations, by contrast, are anchored in more crystallized beliefs about individual competence or about structural features of the organization, and are therefore less easily unsettled by single events. Rather than treating this as a limitation, we interpret this asymmetry as theoretically informative, and propose that the institutional profile may function as a transitional or “pivot” configuration, from which employees may shift toward either competence-based or relational-structural interpretations depending on contextual cues. Our transition analyses reveal that this fluidity is not random but systematically patterned. Performance emerges as the most robust antecedent, being associated with an increased likelihood that employees shift toward more ability-based attribution patterns. Job weight and education also show meaningful associations, suggesting that individuals occupying more complex roles or holding higher qualifications are somewhat more likely to reconsider the relative importance of ability, education, or relational factors when interpreting pay and promotion decisions. By contrast, age and seniority tend to stabilize membership within the *institutional attributors* profile, and are linked to a lower likelihood of change. Gender also plays a modest role, with men being more likely to transition toward attribution patterns centred on ability. These patterns offer novel theoretical insights at the intersection of attribution theory, HR attribution theory, and cognitive dissonance theory. Classic attribution theory (Heider, 1958; Martinko et al., 2006; Weiner, 1985) suggests that favourable outcomes tend to activate internal, ability-based explanations, whereas less favourable or ambiguous outcomes are more likely to elicit external explanations. Our data extend this logic to a longitudinal, configurational setting: performance feedback appears to act as a key interpretive signal that may be associated with shifts in existing attributional configurations toward more ability-centered or relational-structural frameworks. This temporal dimension — largely absent from prior attribution research in organizational contexts — represents a contribution in its own right. HR attribution theory (Hewett et al., 2018; Nishii et al., 2008) further enriches this interpretation by suggesting that employees infer the underlying intent of HR practices from their personal experiences within the system.

When employees receive strong performance signals or occupy roles characterized by greater responsibility and complexity, they may interpret the organization as operating according to meritocratic criteria, thus privileging competence-based and controllable causal explanations. Conversely, when performance signals or advancement opportunities are ambiguous, employees may increasingly

view outcomes as influenced by relational, political, or structural factors. Cognitive dissonance theory (Festinger, 1957) adds a motivational dimension to this account: when employees' experiences diverge from their existing attributional beliefs, they may adjust their framework to restore cognitive consistency – moving toward ability-oriented explanations when performance feedback is strong, or toward relational-structural ones when advancement appears to follow social rather than meritocratic channels. Social capital theory (Burt, 1997; Lin, 2001) completes the picture: observing the career acceleration of well-connected colleagues, or perceiving gendered regularities in career mobility, can enhance the salience of relational or structural explanations – particularly among employees with weaker performance cues or lower job weight. As noted by Ibarra (1993), relational and gender-based explanations are frequently co-invoked, and our findings provide empirical support for this theoretical expectation within a configurational framework. We advance these mechanisms as plausible interpretive accounts rather than tested explanations. Although not directly measured, they converge with the observed pattern of transition predictors: performance captures precisely the kind of disconfirming signal that dissonance accounts identify as prompting attributional revision; job weight reflects employees' first-hand experience of how the organization actually allocates responsibility and rewards, the raw material of HR attributions; and education speaks to the salience of credential-based logics.

Third, our findings show that attributional configurations are embedded in employees' broader organizational and career context – that employees do not form causal explanations in a vacuum, but in light of both objective career signals and their social positioning within the organization. The results confirm this dual embeddedness. On one hand, objective career signals – performance, job weight, and position in the organizational hierarchy – are systematically associated with profile membership. Employees with stronger and more visible performance signals, or occupying roles characterized by greater complexity and responsibility, are more likely to endorse competence-centered attributional frameworks. This is consistent with the idea that meritocratic cues embedded in work contexts increase the salience of ability-based explanations, and aligns with self-serving attributional tendencies whereby individuals in higher-status roles may be more inclined to attribute their position to competence, thereby legitimizing their standing (Ashforth & Saks, 1996).

On the other hand, social positioning variables – particularly gender and age – are associated with distinct attributional profiles in ways that reflect broader structural exposures rather than idiosyncratic differences. Being male is associated with a higher likelihood of belonging to the *meritocratic attributors* profile at both time points, while younger employees and women are more frequently associated with the *relational-structural* profile. Rather than reflecting fixed cognitive tendencies, these differences are better understood as reflecting differential exposure to organizational experiences and career-related signals that render competence-based versus relational-structural explanations more or less plausible (Feldman-Summers & Kiesler, 1974; Major & Adams, 1983). The growing emphasis on diversity, inclusion, and social networks in contemporary organizations means that relational and structural factors are particularly salient in the interpretive frameworks of those more likely to encounter them directly (Colquitt et al., 2001; Elvira & Graham, 2002).

Age-related differences in profile membership follow a generational rather than tenure-based logic. Older employees are more likely to belong to the *institutional attributors* profile, consistent with interpretive schemas that emphasize formal credentials and accumulated experience. Crucially, this pattern is linked to chronological age rather than organizational tenure, suggesting that it reflects broader career-stage factors and generational cognitive schemas rather than experience in the specific organization. This interpretation aligns with career time perspective theory (Savickas et al., 1984), which highlights how age shapes individuals' expectations and mental models about career advancement, and with generational values theory (Twenge et al., 2010), which suggests that older cohorts tend to value stability, hierarchy, and formal recognition of qualifications.

A further theoretically notable finding is that the gender pay gap does not predict the likelihood of belonging to any particular attribution profile. This finding reinforces a key theoretical point: attributional configurations are not merely reflections of objective organizational conditions, but are also shaped by social norms, cognitive schemas, and culturally embedded beliefs (Markus & Kitayama, 1991). It suggests that even when structural inequalities are present, employees' interpretive frameworks are not automatically recalibrated – a finding with important implications for understanding why organizational fairness interventions do not always produce uniform attitudinal change.

Fourth, our findings on work-related attitudes provide an integrated picture of how attributional configurations are associated with employees' evaluative, relational, motivational, and affective responses to HR decisions. Consistent with this framework, individuals in the *meritocratic attributors* profile report the highest levels of work engagement, affective organizational commitment, distributive justice perceptions, and trust in management, whereas individuals in the *relational-structural attributors* profile report the lowest levels. The institutional attributors profile tends to fall in between. Rather than interpreting each outcome in isolation, we read this pattern as reflecting a coherent attitudinal configuration: when employees interpret career outcomes through competence-based and controllable causes, they simultaneously report higher fairness evaluations (distributive justice), greater confidence in decision-makers (trust in management), higher energy and involvement in work (engagement), and stronger emotional attachment to the organization (affective commitment). These outcomes are not independent; they co-vary as part of an integrated response to the interpretive framework employees bring to HR decisions.

This pattern can be interpreted through a convergent theoretical lens. Attribution theory (Weiner, 1985) suggests that ability-based, stable, and controllable attributions reinforce self-efficacy and the perceived link between effort and reward. Social exchange theory (Cropanzano & Mitchell, 2005) adds that when employees perceive organizational decisions as based on fair and controllable criteria, they are more likely to reciprocate with engagement and commitment. Taken together, these perspectives suggest that meritocratic attributional configurations activate a virtuous cycle: perceived controllability supports fairness evaluations, which sustain trust, which in turn reinforces motivational and affective investment in the organization. Conversely, relational-structural attributions – emphasizing factors beyond individual control – disrupt this cycle, generating lower justice perceptions and trust

and, consequently, lower engagement and commitment (Martinko et al., 2006).

It is important, however, to acknowledge a theoretical caveat. The observed associations between attributional profiles and work attitudes may not be purely driven by the attributional configurations themselves. Employees with stronger objective career trajectories may be both more likely to endorse meritocratic attributions – consistent with self-serving tendencies – and more likely to report positive work attitudes. Attributional configurations thus capture not only distinct interpretive frameworks but also, in part, how employees make sense of their own objective career conditions. This complexity does not undermine the theoretical relevance of attributional configurations; rather, it calls for future research that explicitly models the interplay between objective career outcomes, attributional processes, and attitudinal responses.

Finally, the longitudinal increase in affective commitment and distributive justice perceptions observed among institutional attributors warrants theoretical attention. This trajectory could be interpreted not as an independent attitudinal effect of the attributional configuration itself, but as reflecting a growing alignment between employees' institutionalized interpretive framework and their accumulating career experiences. As employees gain seniority and see their credentials increasingly recognized, they may perceive organizational decisions as progressively more consistent with the formal rules they invoke to explain career outcomes, generating a cumulative sense of validation that strengthens both fairness perceptions and organizational attachment. In line with social identity theory (Tajfel & Turner, 1986), increasing seniority and accumulated expertise may be associated with a stronger identification with the organization and, consequently, higher affective commitment. From an organizational justice perspective, this temporal dynamic suggests that the relationship between attributional configurations and justice perceptions is not static: it can evolve as the organizational context provides experiences that confirm or disconfirm employees' interpretive frameworks.

7.2. Practical contributions

This study offers valuable insights for managers, HR professionals and organizations. First, person-centred results are more naturally aligned with the tendency of managers and practitioners to pigeon-hole employees into different categories (Meyer & Morin, 2016). Accordingly, our findings are likely to have implications for practice, in that they call attention to the value of taking note of their employees' attribution processes, given that these are closely connected with their responses to decisions around pay rises and promotion.

Rather than guiding “who” should be promoted or rewarded, attribution profiles can help managers understand “how” different employees are likely to interpret promotion and pay decisions, and therefore how these decisions should be communicated. In this sense, the profiles work as sensemaking tools allowing organizations to tailor messages, transparency mechanisms, and justification narratives to different employee audiences (both at the level of targeted groups and at the level of the broader workforce) – helping reduce misinterpretation, resistance, and dissatisfaction.

The study also highlights the role of social and cultural factors on people's individual perceptions, showing that attributions are not solely the result of formal organizational practices but are also shaped by broader structural and normative dynamics. In particular, gender-related attributions reflect perceived structural and social dynamics that extend beyond formal pay practices, suggesting that creating a genuine perception of fairness requires efforts that go beyond achieving numerical equality in pay and position. Tailored communication strategies and policies for distinct employee prototypes can address the various behaviors associated with how people perceive events such as promotions and pay rises.

Meritocratic attributors tend to evaluate promotion and pay decisions through the lens of individual competence and personal effort. For this group, organizations should ensure that reward systems are tightly coupled with objective performance metrics and merit-based evaluations. Communicating clear performance criteria, offering regular feedback and publicly recognizing achievements are likely to increase their trust in the system and sustain their engagement.

Institutional attributors are more sensitive to indicators of tenure, education and formal qualifications. HR policies could be tailored to emphasize structured progression frameworks that reward loyalty and experience. For example, clearly defined internal mobility paths, career ladders linked to length of service and recognition of formal training or certifications can align with the expectations of this group and reinforce their sense of fairness.

Finally, *relational-structural attributors* may perceive that advancement is largely driven by networking opportunities and perceived structural factors, including gender dynamics. For these employees it is particularly important to implement and communicate fair procedures transparently, to counteract the perception of bias or favouritism. HR professionals could, for instance, ensure that promotion panels are diverse and trained in unconscious bias, that decision rationales are shared transparently, and that mentorship and sponsorship opportunities are distributed equitably across groups. This group may also benefit from targeted initiatives aimed at enhancing their perceived control and agency over career outcomes.

It is important to stress that this differentiation concerns communication rather than the way employees are treated. The goal is to maintain equal processes while improving the legitimacy, clarity, and perceived fairness of organizational decisions for different employee audiences. Over time, clear feedback, transparent performance systems, and credible evaluation procedures may also help employees gradually shift their interpretations toward explanations that are more focused on ability and merit.

Importantly, our findings also show that not all employees respond in the same way to organizational signals over time. In particular, individuals in the *institutional attributors profile* – whose attributional configuration is comparatively less stable – appear more sensitive to cues such as performance feedback, job weight, educational attainment and gender. These factors are associated to higher likelihoods of shifting toward more meritocratic or more relational-structural interpretations of pay and promotion decisions. For practitioners, this suggests that communication and HR practices targeting this group should pay particular attention to how evaluative signals (e.g., performance ratings, role complexity, developmental opportunities) are conveyed, contextualized and

justified, as these cues may recalibrate employees' attributional interpretations over time.

More broadly, awareness of profile transitions may serve as an anticipatory tool for organizations. Monitoring whether employees are moving toward more relational-structural explanations can signal emerging scepticism or declining trust in reward systems, prompting timely interventions (such as reinforcing transparency), improving feedback quality or revisiting promotion practices before concerns crystallize into disengagement, cynicism or complaints. Conversely, transitions toward more competence-based explanations may indicate that reward systems are increasingly perceived as credible and legitimate. Attending not only to who belongs to which profile, but also to how profiles evolve over time, may therefore help organizations proactively protect distributive justice perceptions and sustain positive employee attitudes across the workforce.

8. Limitations and further research

This study advances our understanding of attribution processes in organizational contexts, but several limitations should be acknowledged, each of which points to directions for future research.

First, while our study focuses on employees' individual attributional interpretations, this perspective necessarily brackets other important factors that shape pay and promotion outcomes — including managerial decision-making processes, organizational power dynamics, and structural features of reward systems. Future research could enrich this picture by combining individual-level attribution data with organizational-level variables, offering a more complete account of how career-related decisions are made and experienced.

A further methodological limitation concerns the way attributional dimensions were defined. In this study, the attribution categories were specified *a priori*, on the basis of attribution theory, and refined through consultations with HR professionals, rather than emerging inductively from employees' own narratives. Although this approach ensured conceptual clarity and contextual relevance, recent research shows that attributional categories can also be derived bottom-up by eliciting spontaneous causal accounts and coding them inductively before person-centered analysis (e.g., Wyatt et al., 2022). Future research could therefore complement our design by adopting similar inductive procedures to explore whether different attributional structures emerge across contexts.

We also recognize that the attribution dimensions were measured with two items only. Although our analyses provided strong evidence of their reliability and validity, future research could strengthen this approach by employing longer scales to further consolidate the measurement of attributional constructs. Additionally, we did not include performance as a separate attributional cause. As discussed in the Theoretical Background, this was a deliberate scoping decision: merit-based causal explanations are primarily captured through ability attributions, which represent a more enduring and causally informative construct within Weiner's framework. Nonetheless, performance attributions are highly salient in many employees' narratives about pay and promotion outcomes, and treating performance as a distinct attributional category could yield important insights, particularly in contexts where performance ratings are the explicit basis for salary differentiation. Future research should consider incorporating performance-related attributions, particularly in designs that explicitly vary or assess perceived performance alongside the attribution dimensions examined here.

A related measurement consideration concerns our combining of promotion- and pay-related attributional items into unified factor scores. Although our exploratory and confirmatory factor analyses, as well as our longitudinal measurement invariance tests, provide strong empirical support for this approach — with items loading consistently on the same underlying factors across both domains and time points — we acknowledge that promotions and pay increases may differ in important ways, such as frequency, visibility, and susceptibility to bias. Future research could examine these two types of career-related decisions separately to assess whether distinct attributional profiles emerge across outcome domains. More broadly, future research should further examine the extent to which attributional configurations emerge across different organizational contexts and attributional domains, and compare profile-based approaches with variable-centered alternatives more directly.

Second, the use of self-reported data represents a further methodological limitation, as it can introduce biases and raise concerns about common method variance. Although we employed appropriate techniques to minimize these issues, future studies could address this limitation by incorporating objective HR data (such as actual promotion rates or administrative records), which would help cross-validate self-reported responses and provide a more robust empirical foundation for the attribution-outcome relationships identified here.

Third, given the lack of a significant association between the gender pay gap and attribution profiles, the role of gender dynamics in shaping attributional interpretations warrants deeper investigation. Future research could investigate this issue through interviews or ethnographic methods, and by examining implicit biases (such as the tendency to attribute men's success to competence and women's success to luck), to better understand how gender dynamics shape attribution processes within organizations. This would also allow researchers to explore how structural inequalities are cognitively processed and normalized, and why formal equity measures do not always translate into changed attributional frameworks.

Fourth, the generalizability of our findings is constrained by both the organizational and geographical context of the study. The sample concerns a bank, a factor that may restrict applicability to other sectors. It is plausible that attribution patterns vary depending on sector-specific features, such as organizational structure, evaluation systems and career progression models. For instance, in technology firms, where innovation and rapid advancement are emphasized, employees may be more likely to adopt meritocratic attribution styles. In contrast, manufacturing environments, which often rely on standardized roles and hierarchical progression, may reinforce institutional attributions. In the public sector, where advancement may be influenced by bureaucratic rules, tenure, or perceived favouritism, relational-structural attributions could be more prevalent. Beyond sector, it is equally plausible that attribution profiles are shaped by socio-cultural and geographical factors. Cultural values, institutional norms and labour market dynamics often

influence how individuals interpret fairness in promotions and pay raises. For instance, in Southern European contexts (such as Italy or Spain), where relational networks and seniority may still play a central role in career advancement, relational or structural attribution styles could be more prevalent. Conversely, in Nordic countries, where meritocracy and transparency are institutionalized, meritocratic attribution patterns might be more dominant. Similarly, individuals from lower socioeconomic backgrounds may be more likely to attribute promotions and salary increases to networking or seniority, while those from higher-status backgrounds may emphasize merit and individual ability. Future research could adopt comparative designs across both sectors and regions – and across socioeconomic groups – to explore how attribution profiles and their associated outcomes vary in different structural and cultural contexts, thereby assessing the broader applicability of our findings.

Fifth, future research could profitably adopt experimental designs to investigate which managerial interventions are most effective in supporting employees — particularly those in the institutional attributors profile — in developing more stable and meritocratic attributional frameworks, with downstream benefits for engagement, commitment and organizational trust.

Finally, the longitudinal design of this study represents a strength, but also introduces interpretive challenges. The current study concentrated on the relatively short time interval of six months. While this allowed us to capture meaningful profile transitions, a longer observation window would be needed to track more gradual attributional change and to assess whether profiles stabilize, consolidate, or continue to evolve across career stages. Conversely, longer intervals also introduce the risk that employees may have transitioned back and forth between profiles in ways that are not captured by two-wave designs, suggesting that future research could benefit from more intensive longitudinal approaches – such as experience sampling or multi-wave panel designs – to better track the dynamics of attributional change over time.

CRedit authorship contribution statement

Gabriele Boccoli: Writing – original draft, Supervision, Methodology, Investigation, Data curation, Conceptualization. **Benedetta Colaiaacovo:** Writing – original draft, Conceptualization. **Francesco Candia:** Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Luca Gastaldi:** Writing – review & editing, Supervision. **Mariano Corso:** Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jvb.2026.104299>.

Data availability

The authors do not have permission to share data.

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