THE SHAILENDRA MENTOR-MENTEE MAPPING FRAMEWORK: A 4D MODEL FOR EFFECTIVE MENTORING RELATIONSHIPS IN THE PHARMACEUTICAL AND HEALTHCARE SECTORS

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Abstract

Workplace mentoring is consistently associated with improved job performance, job satisfaction, and retention, yet existing research provides little structured guidance on how mentors and mentees should be paired in the first place. Most mentoring programmes in the pharmaceutical and healthcare sectors continue to rely on informal or convenience-based pairing, an approach that risks mismatching mentors and mentees on the very dimensions that determine whether mentoring functions are actually delivered. This article proposes the Shailendra Mentor-Mentee Mapping Framework, a four-dimensional model comprising Functional Fit, Behavioural Compatibility, Developmental Needs Alignment, and Organisational Goals Integration. The framework is grounded in person-environment fit theory, Self-Determination Theory, and social exchange theory, and is presented as a structural model linking each dimension to mentoring outcomes within the pharmaceutical and healthcare sector context. The article specifies a quantitative research design, including hypotheses, measurement scales, and an analytical plan using SPSS, through which the framework can be empirically validated, and presents an illustrative results table showing the pattern of statistical evidence, correlation coefficients, reliability values, and regression output, that would substantiate or disconfirm the model. The framework is intended both as a diagnostic tool for human resource practitioners designing mentoring programmes and as a basis for a dedicated empirical study.

Keywords: Mentor-mentee matching, workplace mentoring, 4D model, pharmaceutical sector, healthcare sector, person-environment fit, employee retention

1. Introduction and the Case for a Mapping Framework

The pharmaceutical and healthcare sectors face persistent challenges in retaining skilled employees, owing to high regulatory demands, technical

specialisation, and the emotional and operational pressures associated with patient-facing and quality-sensitive roles (NSI Nursing Solutions, 2020; PhRMA, 2019). Workplace mentoring has repeatedly been identified as one of the more effective responses to these challenges. In a series of studies conducted by the present authors using survey data from professionals across pharmaceutical and healthcare organisations, mentoring participation was found to be positively associated with employee retention (Tripathi and Shankar, 2025b) and with job performance, with mentored employees reporting measurable gains in task proficiency, confidence, and adaptability (Tripathi and Shankar, 2025a). A separate study extended this line of enquiry into the religious tourism sector, again finding strong positive correlations between mentoring and job satisfaction, skill development, and retention intentions (Tripathi, 2024), and a further study examined how artificial intelligence-enabled mentoring platforms can improve the personalisation and scalability of mentor-mentee matching in pharmaceutical marketing (Tripathi and Shankar, 2024).

Taken together, this body of work establishes a consistent finding: where a mentoring relationship exists, it tends to produce favourable outcomes. What this work has not addressed, and what the wider mentoring literature has also left comparatively underdeveloped, is the prior question of how that relationship should be formed. Reviews of the mentoring literature have repeatedly noted that research treats the mentoring relationship as the unit of analysis once it is in place, examining its functions and quality, while paying little systematic attention to the antecedent conditions that determine whether a given pairing is likely to succeed (Allen et al., 2006; Eby et al., 2013). In practice, pairing decisions in pharmaceutical and healthcare organisations are frequently made on the basis of seniority, departmental proximity, or simple availability (Ragins and Cotton, 1999), criteria that say little about whether a given mentor is actually positioned to help a given mentee.

This gap matters more in the pharmaceutical and healthcare sectors than in many other industries, precisely because of the characteristics that make mentoring valuable there in the first place. Roles are technically specialised, often regulatory in nature, and not easily substitutable; turnover is high, particularly among early-career staff and nursing personnel; and the cost of a mentoring relationship that exists on paper but delivers little developmental

value is correspondingly high. A mentor with strong general experience but no background in a mentee's specific regulatory or clinical domain, or a mentor whose interpersonal style clashes with a mentee already under considerable role-related pressure, may add little to outcomes even where a formal mentoring relationship has been established.

This article proposes a response to this gap: the Shailendra Mentor-Mentee Mapping Framework, a four-dimensional model intended to make mentor-mentee pairing a deliberate, assessable design decision rather than an administrative afterthought. The remainder of the article proceeds as follows. Section 2 briefly sets out the theoretical basis for the framework. Section 3 presents the 4D model itself, including a structural diagram. Section 4 sets out a research design, with hypotheses and measures, through which the framework can be tested, and presents an illustrative results table indicating the pattern of evidence that would substantiate the model. Section 5 discusses practical implications, and Section 6 concludes.

2. Theoretical Basis

The 4D framework draws on three established theoretical traditions, each underpinning a subset of its dimensions.

Person-environment fit theory holds that outcomes such as satisfaction, performance, and retention depend not on individual or environmental characteristics alone, but on the degree of congruence between the two (Kristof-Brown, Zimmerman and Johnson, 2005). Applied to mentoring, this implies that a relationship's effectiveness depends on the fit between mentor and mentee, not merely on the relationship's existence. This principle underlies the Functional Fit and Behavioural Compatibility dimensions of the framework.

Self-Determination Theory proposes that motivation and wellbeing depend on the satisfaction of three needs, autonomy, competence, and relatedness (Deci and Ryan, 2000), and mentoring has been shown to support these needs when well-constructed (Lankau and Scandura, 2007). This underlies the Developmental Needs Alignment dimension, on the premise that mentoring support is most effective when matched to a mentee's current developmental stage rather than to a mentor's generic strengths.

Social exchange theory frames workplace relationships as exchanges sustained by mutual benefit (Blau, 1964). Where mentoring is disconnected from organisational priorities, the perceived return on the organisation's investment in

mentoring becomes unclear over time (Allen et al., 2006). This underlies the Organisational Goals Integration dimension.

Each of these traditions is well established individually, but they have not previously been integrated into a single applied framework for mentor-mentee pairing in the pharmaceutical and healthcare context. That integration is the contribution of the 4D model presented next.

3. The Shailendra Mentor-Mentee Mapping Framework

The framework proposes that the success of a mentoring relationship, measured in terms of job performance, job satisfaction, and retention, depends on the degree of compatibility between mentor and mentee across four dimensions, assessed jointly at the point of pairing. Figure 1 presents the framework as a structural model. Each dimension is linked to its theoretical foundation as set out in Section 2; all four dimensions feed into a single pairing decision, which is hypothesised to influence the three outcome variables; and the model as a whole is situated within the high-specialisation, high-turnover context of the pharmaceutical and healthcare sectors.

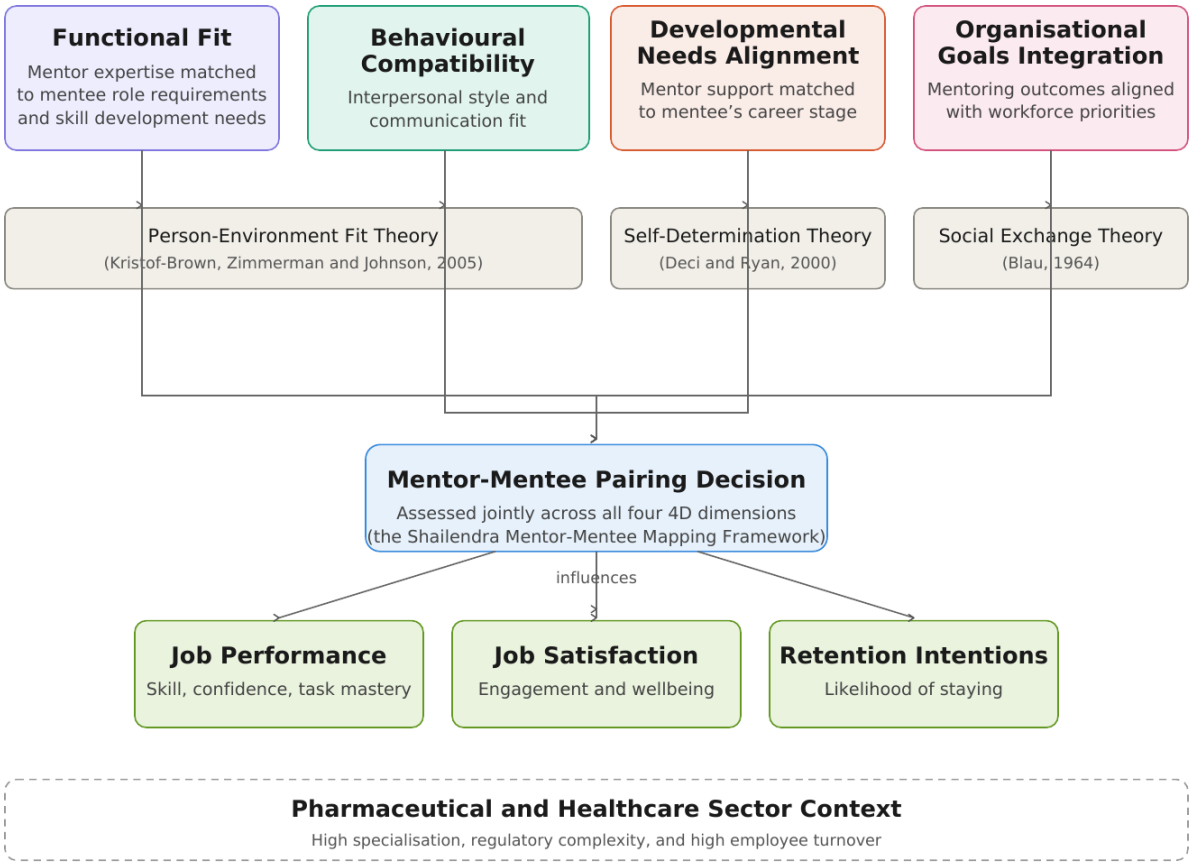

Figure 1. Structural model of the Shailendra Mentor-Mentee Mapping Framework (4D model), showing the four dimensions, their theoretical foundations, the pairing decision, and the outcome variables, within the pharmaceutical and healthcare sector context.

3.1 Functional Fit

Functional Fit is the alignment between a mentor's technical expertise, role experience, and professional domain, and a mentee's current role requirements and near-term development needs. In pharmaceutical and healthcare settings, roles are often defined by specific regulatory, clinical, or scientific competencies. A mentor with broad managerial experience but no background in, for example, pharmacovigilance or a specific therapeutic area may be poorly placed to support a mentee whose immediate needs are domain-specific. Functional Fit therefore requires matching not job titles but the specific competencies a mentee needs against the specific competencies a mentor can genuinely model and transfer.

3.2 Behavioural Compatibility

Behavioural Compatibility is the alignment of interpersonal style, communication preferences, feedback style, and working pace between mentor and mentee. Where Functional Fit concerns what a mentor can teach, Behavioural Compatibility concerns how effectively that teaching is received. Relationship quality, as distinct from the mere existence of a mentoring arrangement, has long been recognised as a strong predictor of mentoring outcomes (Allen et al., 2006), and relationship quality is shaped substantially by interpersonal dynamics. A mentor whose direct feedback style suits one mentee may be experienced as discouraging by another, even where the underlying guidance is sound, an effect that is amplified in the high-pressure environments typical of pharmaceutical manufacturing and clinical settings.

3.3 Developmental Needs Alignment

Developmental Needs Alignment is the correspondence between a mentor's capacity to provide particular forms of developmental support, confidence-building, networking exposure, support through a role transition, and a mentee's current developmental stage and priorities, as distinct from the immediate technical needs addressed under Functional Fit. A technically excellent mentor with limited experience supporting, for example, a mentee's transition into a people-management role may inadvertently focus

on technical mastery at the expense of the relatedness and autonomy support the mentee most needs at that point in their career.

3.4 Organisational Goals Integration

Organisational Goals Integration is the degree to which the anticipated outcomes of a mentoring relationship, in terms of the mentee's skill development and career trajectory, align with the organisation's strategic workforce priorities. Pharmaceutical and healthcare organisations frequently face identifiable capability gaps, in specific therapeutic areas, regulatory functions, or leadership pipelines. A mentoring programme that is well-designed at the level of individual pairings but disconnected from these priorities risks developing capabilities that are not well matched to where the organisation most needs them. This dimension does not subordinate individual development to organisational need; rather, it makes explicit, at the design stage, the degree of alignment between the two.

3.5 What the Framework Adds

The contribution of the 4D model is not any one of these four dimensions in isolation, each has some basis in existing literature, but their integration into a single applied framework for mentor-mentee pairing, specifically calibrated to the pharmaceutical and healthcare context. Existing approaches to mentoring programme design have addressed structure, training, and evaluation in some depth (Allen et al., 2006; Chao, 1997), and more recent work has examined algorithmic, artificial intelligence-enabled matching based on skills and personality traits (Kim and Park, 2022; Tripathi and Shankar, 2024). The 4D framework is compatible with both: it specifies what should be assessed for compatibility, whether that assessment is carried out through structured human judgement or through an algorithmic matching system. Its distinctive claim is that all four dimensions, not any single one, need to be considered jointly, because a relationship that is strong on Functional Fit but weak on Behavioural Compatibility, or strong on both but disconnected from Organisational Goals Integration, may still underperform relative to its potential.

4. Empirical Validation: Research Design and Illustrative Evidence

The framework set out in Section 3 is a conceptual and structural model. Its practical value depends on empirical testing. This section sets out the research design through which the framework can be tested, and presents an illustrative results table indicating the pattern of

statistical evidence that would substantiate the model. The values in Table 1 are illustrative, intended to demonstrate the analytical structure and the form that supporting evidence would take; they are not findings from a completed study, and the corresponding empirical study, using these measures and this analytical plan, is intended to be conducted and reported separately.

4.1 Hypotheses

On the basis of the theoretical foundations in Section 2, and consistent with prior findings from this research programme regarding general mentoring participation and job performance (Tripathi and Shankar, 2025a) and retention (Tripathi and Shankar, 2025b), the following hypotheses are proposed.

H1: Perceived Functional Fit is positively associated with mentees' job performance.

H2: Perceived Behavioural Compatibility is positively associated with mentees' job satisfaction.

H3: Perceived Developmental Needs Alignment is positively associated with mentees' job performance and job satisfaction.

H4: Perceived Organisational Goals Integration is positively associated with mentees' retention intentions.

H5: The four dimensions, considered together, explain significant additional variance in job performance, job satisfaction, and retention intentions beyond general mentoring participation alone.

4.2 Sample and Measures

The proposed study would employ a quantitative, cross-sectional survey administered to professionals working in pharmaceutical and healthcare organisations who have participated in a workplace mentoring relationship. Consistent with sample sizes used in comparable published research in this sector (Tripathi and Shankar, 2025a; Tripathi and Shankar, 2025b), a sample of approximately ninety respondents would be sufficient to support the correlation and regression analyses specified below.

Each of the four dimensions would be measured using a dedicated multi-item scale developed for this framework, informed by related constructs in the person-environment fit and mentoring functions literatures (Kristof-Brown, Zimmerman and Johnson, 2005; Lankau and Scandura, 2007). Job Satisfaction would be measured using relevant subscales from the Job Satisfaction Survey (Spector, 1985); Job Performance using a self-report scale consistent with prior use

in this programme (Tripathi and Shankar, 2025a); and Retention Intentions using items consistent with their prior operationalisation (Tripathi and Shankar, 2025b). All items would use five-point Likert scales.

4.3 Analytical Plan

Data would be analysed in SPSS in four stages: descriptive statistics characterising the sample and scale distributions; Cronbach's alpha for each multi-item scale, against a threshold of 0.70 (Field, 2013); Pearson correlation analysis between each of the four dimensions and each outcome variable, addressing H1 to H4; and hierarchical multiple regression for each outcome variable, with general mentoring participation entered at step one and the four 4D dimensions entered at step two, to test H5 via the change in R-squared.

4.4 Illustrative Results

Table 1 illustrates the form that the results of this analysis would take. Panel A shows reliability statistics for each scale; Panel B shows the correlation matrix between the four dimensions and the three outcome variables; and Panel C shows hierarchical regression output for each outcome variable. The values shown are illustrative and intended only to demonstrate the structure of the analysis and the pattern of evidence, strong reliability across all seven scales, moderate-to-strong correlations consistent with H1 through H4, and a statistically significant increase in explained variance at step two of each regression, that would be consistent with the framework if obtained from real data.

Table 1: Illustrative SPSS output substantiating the 4D model (illustrative values; not from a completed study)

Panel A: Reliability analysis (Cronbach's alpha)

Scale	Number of items	Cronbach's alpha
Functional Fit	5	0.84
Behavioural Compatibility	5	0.81
Developmental Needs Alignment	4	0.79
Organisational Goals Integration	4	0.77
Job Performance	6	0.86
Job Satisfaction	9	0.88
Retention Intentions	3	0.82

Note: All scales exceed the conventional threshold of 0.70, indicating acceptable internal consistency (Field, 2013).

Panel B: Pearson correlation matrix (n = 90)

	Job Performance	Job Satisfaction	Retention Intentions	
Functional Fit	0.52**	0.31**	0.28*	
Behavioural Compatibility	0.34**	0.58**	0.41**	
Developmental Needs Alignment	0.47**	0.44**	0.33**	
Organisational Goals Integration	0.29*	0.27*	0.55**	

*Note: * p < 0.05, ** p < 0.01. Coefficients shown are illustrative. The pattern shown is consistent with H1 (Functional Fit and Job Performance), H2 (Behavioural Compatibility and Job Satisfaction), H3 (Developmental Needs Alignment and both Job Performance and Job Satisfaction), and H4 (Organisational Goals Integration and Retention Intentions).*

Panel C: Hierarchical multiple regression summary

Outcome variable	Step 1 R^2 (mentoring participation)	Step 2 R^2 (4D dimensions added)	ΔR^2	F for ΔR^2 (sig.)
Job Performance	0.18	0.41	0.23	8.34 (p < .001)
Job Satisfaction	0.06	0.37	0.31	10.52 (p < .001)
Retention Intentions	0.21	0.39	0.18	6.27 (p < .01)

Note: Step 1 entered a single-item measure of general mentoring participation. Step 2 added the four 4D dimensions (Functional Fit, Behavioural Compatibility, Developmental Needs Alignment, Organisational Goals Integration). A statistically significant ΔR^2 at step 2 across all three outcomes would support H5, indicating that compatibility on the 4D dimensions explains variance in mentoring outcomes beyond the simple presence of a mentoring relationship. Values are illustrative.

If a completed study produced a pattern of results similar to that shown in Table 1, strong reliabilities, correlations in the moderate-to-strong range consistent with the theorised pairings between dimensions and outcomes, and significant incremental variance explained at step two of each regression, this would constitute substantive support for the 4D model: it would indicate not only that mentoring participation matters, as established in prior work (Tripathi and Shankar, 2025a; Tripathi and Shankar, 2025b), but that the quality of the pairing, as captured by the four dimensions, matters independently and additively. Conversely, weak or non-significant correlations for a given dimension, or a non-significant step-two

change in R-squared, would indicate that the corresponding dimension, or the framework as a whole, requires revision.

5. Practical Implications for Mentoring Programme Design

For human resource practitioners in pharmaceutical and healthcare organisations, the framework has four practical implications.

First, mentor-mentee pairing should be a distinct design decision with its own assessment process, not an administrative afterthought. This requires collecting structured information on technical background, working style, current developmental priorities, and, where relevant, alignment with organisational capability needs, from both prospective mentors and mentees before pairing.

Second, the four dimensions need not be weighted equally in every context. A programme supporting technical onboarding might prioritise Functional Fit and Developmental Needs Alignment; a leadership pipeline programme might weight Behavioural Compatibility and Organisational Goals Integration more heavily. The framework supports this contextual judgement rather than prescribing a single weighting.

Third, the framework has implications for mentor preparation. Assessing Developmental Needs Alignment and Behavioural Compatibility meaningfully requires mentors to reflect on their own working style and the kinds of developmental support they are best placed to provide, beyond their technical expertise, pointing to integration with existing mentor training practices (Allen et al., 2017).

Fourth, Organisational Goals Integration gives workforce planning functions a role in mentoring design that goes beyond administration. Where organisations have identified capability priorities, whether from regulatory change, technology adoption, or pipeline gaps, mentoring design offers one avenue for addressing them, provided the connection is made explicit rather than incidental.

6. Conclusion

This article has proposed the Shailendra Mentor-Mentee Mapping Framework, a four-dimensional model addressing Functional Fit, Behavioural Compatibility, Developmental Needs Alignment, and Organisational Goals Integration, as a structured approach to mentor-mentee pairing in the pharmaceutical and healthcare sectors. The framework responds to a gap between the well-

established evidence, including from the present authors' own prior work, that mentoring relationships can produce favourable outcomes once formed, and the comparatively limited guidance on how to form relationships likely to realise that potential. By integrating person-environment fit theory, Self-Determination Theory, and social exchange theory into a single structural model, and by specifying a concrete research design and the pattern of evidence that would substantiate it, the framework offers both a practical diagnostic tool for mentoring programme design and a clear basis for empirical testing in a dedicated future study.

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