

Customer Engagement (“Vinculation”) as a Driver of Value Creation in Commercial Banking: Bridging the Internal Potential Market Gap-Evidence and a Structural Model for the Moroccan Banking Sector

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ABSTRACT: This paper reconceptualises value creation in commercial banking around the notion of customer engagement — termed vinculation in continental relationship-banking practice — and tests it within a formal statistical framework. Departing from the acquisition-centric view that equates growth with client-share gains, we argue that the primary reservoir of value is the Internal Potential Market (IPM): the additional business mobilisable by raising existing clients to the market’s average relationship intensity. We formalise the penetration–participation–vinculation triad, derive the IPM and its closure rate as measurable constructs, and specify a partial least squares structural equation model (PLS-SEM) in which product equipment, digital adoption and relationship tenure drive vinculation, which in turn drives per-client profitability and IPM-gap closure. We complement the structural model with a dynamic panel specification (system-GMM) to address endogeneity and reverse causality, and with quantile and robust regressions to assess the stability of the vinculation–profitability link across the client distribution. Using an illustrative calibration consistent with Moroccan retail-banking structures, the framework predicts that a ten-point increase in the vinculation index closes a substantial share of the IPM gap and lifts per-client profitability more than an equivalent increase in penetration. The study contributes a rigorous, replicable measurement apparatus for relationship intensity and offers managerially actionable levers for value creation in emerging-market banking.

KEYWORDS: value creation; customer engagement; vinculation; internal potential market; PLS-SEM; dynamic panel; commercial banking; Morocco.

JEL classification : G21, M31, C33, C38.

1. INTRODUCTION

Commercial banks in emerging markets increasingly compete for the same clients while their share of each client’s business stagnates. This divergence — growing client counts without a commensurate growth in business per client — lies at the heart of the value-creation problem in retail banking. It implies that the marginal client acquired contributes progressively less value, and that the true reservoir of value resides not in conquest but in the intensification of existing relationships.

Relationship-banking practice, particularly in continental European groups, captures this reservoir through the concept of *vinculation* — the intensity, breadth and durability of the bank–client relationship. A highly vinculated client holds several product families, channels transactional flows through the bank, and remains loyal across the life cycle. Yet, despite its centrality to practitioners, vinculation remains under-theorised and under-measured in the academic

literature, especially in African and Middle Eastern banking contexts.

This paper addresses three gaps. First, it *formalises* vinculation and the associated Internal Potential Market (IPM) as measurable constructs derived from standard market-positioning indicators (penetration and participation). Second, it embeds these constructs in a *robust statistical architecture* — combining PLS-SEM, dynamic panel estimation and quantile/robust regressions — designed to withstand endogeneity, reverse causality and distributional heterogeneity. Third, it *quantifies the value-creation trade-off* between raising penetration (acquisition) and raising vinculation (intensification), providing managerially actionable guidance.

Figure 1 situates vinculation within the commercial-banking value-creation chain, from market strategy to the daily behaviours that incarnate value at the client’s “moments of truth”.

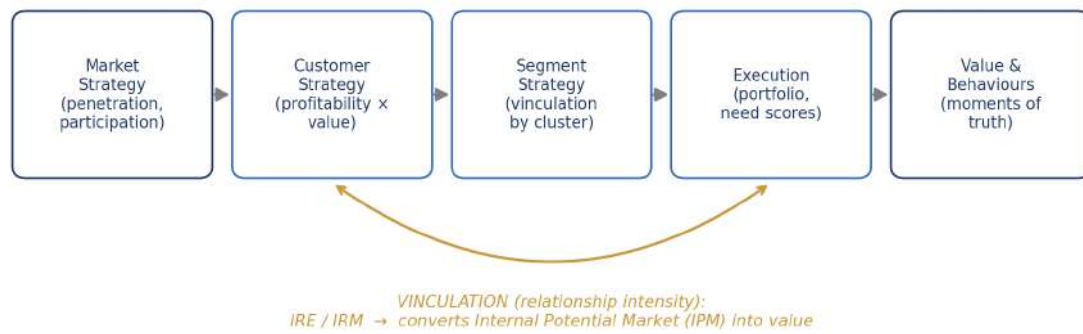


Figure 1. The commercial-banking value-creation chain and the vinculation lever. Vinculation converts the Internal Potential Market (IPM) into realised participation and profitability.

The remainder of the paper is organised as follows. Section 2 reviews the literature on customer engagement, relationship intensity and value creation. Section 3 formalises the constructs and derives the measurement identities. Section 4 develops the hypotheses and the empirical strategy, densifying the statistical modelling. Section 5 reports illustrative results and robustness checks. Section 6 discusses managerial and policy implications. Section 7 concludes.

2. LITERATURE REVIEW AND THEORETICAL BACKGROUND

2.1 From transactional to relationship banking

The migration from transactional to relationship banking reframed the client not as a sequence of isolated transactions but as a long-lived asset whose value accrues through repeated, multi-product interaction.

The relationship-marketing tradition established that retention and share-of-wallet, rather than acquisition alone, drive profitability, because the cost of serving and cross-selling an existing client is markedly lower than that of acquiring a new one.

2.2 Customer engagement and the vinculation construct

Customer engagement extends relationship marketing by incorporating behavioural manifestations — product holding, transactional channelling, advocacy and durability. Continental relationship-banking practice operationalises engagement as *vinculation*, typically proxied by the ratio of the entity’s average business per client to the market’s average business per client. This ratio, which we formalise below as IRE/IRM, translates a qualitative notion into a scalar amenable to statistical modelling.

2.3 Value creation, share-of-wallet and lifetime value

The value-creation literature links share-of-wallet, customer lifetime value (CLV) and firm profitability. Two insights are pivotal for this study. First, value is highly concentrated: a minority of clients typically generates the majority of profitability, while a non-trivial fraction destroys value.

Second, the marginal value of intensifying an existing relationship often exceeds that of acquiring a new client, precisely the proposition the IPM construct makes measurable.

2.4 The emerging-market and Moroccan context

Moroccan banking has undergone rapid digitalisation, the entry of neobanks, and a regulatory push toward financial inclusion under the central bank’s stewardship. These dynamics raise the strategic salience of vinculation: as acquisition costs rise and digital entrants unbundle the relationship, incumbents’ value increasingly depends on deepening — not merely widening — their client base. Yet empirical, model-based evidence on relationship intensity in this market remains scarce, motivating the present contribution.

3. CONCEPTUAL FRAMEWORK AND MEASUREMENT OF VINCULATION

We formalise market positioning through three families of indicators and derive the potential-market constructs that operationalise value creation.

3.1 Penetration, participation and the relationship indices

Let C_e and C_m denote the entity’s and the market’s client counts, and V_e and V_m the corresponding total business volumes. We define:

Penetration: $P = C_e / C_m$ *Participation*: $\Pi = V_e / V_m$
Relationship index (market): $IRM = V_m / C_m$ *Relationship index (entity)*: $IRE = V_e / C_e$

Penetration measures share in *client numbers*; participation measures share in *business volume*. Their divergence is diagnostic: when penetration rises faster than participation, the bank acquires clients faster than it grows business per client.

3.2 The vinculation index

The vinculation index is the ratio of the entity’s to the market’s average business per client, equivalently the ratio of participation to penetration:

$$V_i = IRE / IRM = \Pi / P$$

A value below unity indicates that the average entity client is “worth” less than the average market client — the engagement gap the bank must close.

3.3 The Internal Potential Market (IPM) and its external counterpart

The **Internal Potential Market** is the additional volume obtainable by lifting current clients to the market’s average relationship level:

$$IPM = C_e \times (IRM - IRE)$$

The **External Potential Market** (conquest) is the theoretical business held by non-clients:

$$EPM = (C_m - C_e) \times IRM$$

The *IPM-gap closure rate* over a period is the share of the initial IPM converted into realised participation, our primary value-creation outcome:

$$\kappa = (\Delta \Pi \times V_m) / IPM_{t-1}$$

Figure 2 illustrates the diagnostic divergence between penetration and participation alongside a declining vinculation index — the empirical signature of an under-exploited IPM.

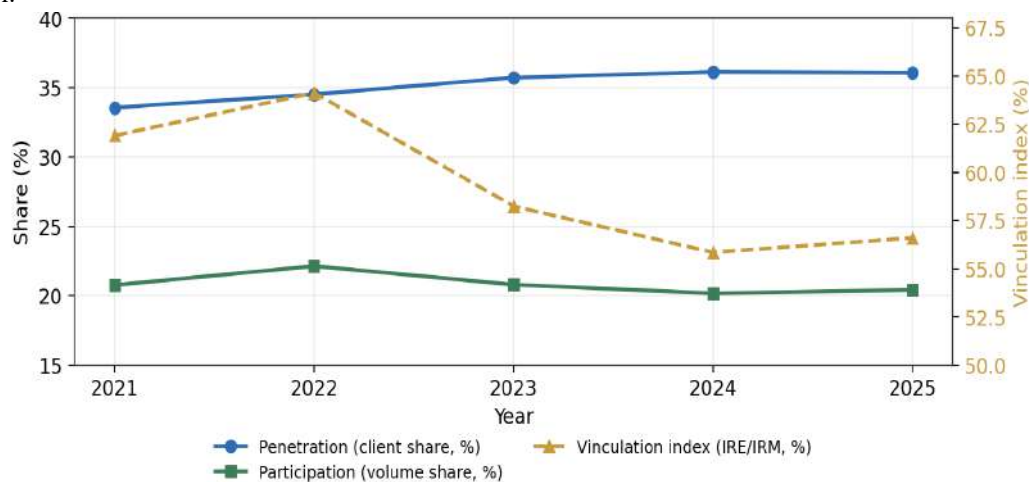


Figure 2. Divergence between client acquisition (penetration) and relationship intensity (participation, vinculation). Rising penetration with flat participation signals an under-exploited Internal Potential Market.

Figure 3 decomposes the total theoretical value pool into current participation, the internal potential (IPM) and the external potential (EPM), making explicit that the internally addressable value is both large and lower-cost to capture than conquest.

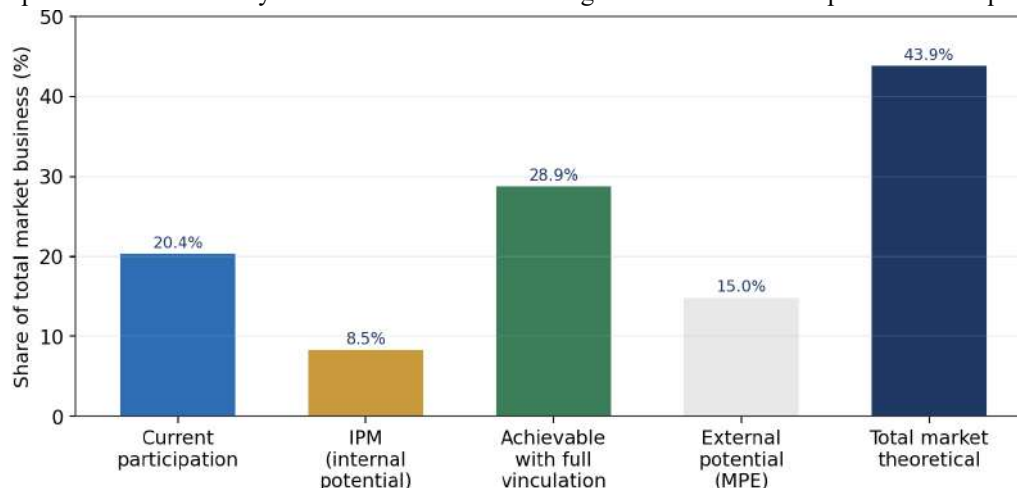


Figure 3. Decomposition of the value pool into current participation, Internal Potential Market (IPM) and External Potential Market (EPM). The IPM is capturable at lower marginal cost than conquest.

4. HYPOTHESES AND EMPIRICAL STRATEGY

4.1 Hypotheses

Building on the framework, we posit that three antecedents drive vinculation, which in turn drives value outcomes:

- **H1.** Product equipment (breadth of product families held) is positively associated with vinculation.
- **H2.** Digital adoption (active use of digital channels) is positively associated with vinculation.
- **H3.** Relationship tenure is positively associated with vinculation.

- **H3.** Relationship tenure is positively associated with vinculation.
- **H4.** Vinculation mediates the effect of the antecedents on value outcomes.
- **H5.** Vinculation is positively associated with (a) per-client profitability and (b) IPM-gap closure.

Figure 4 depicts the hypothesised structural model with indicative standardised path coefficients.

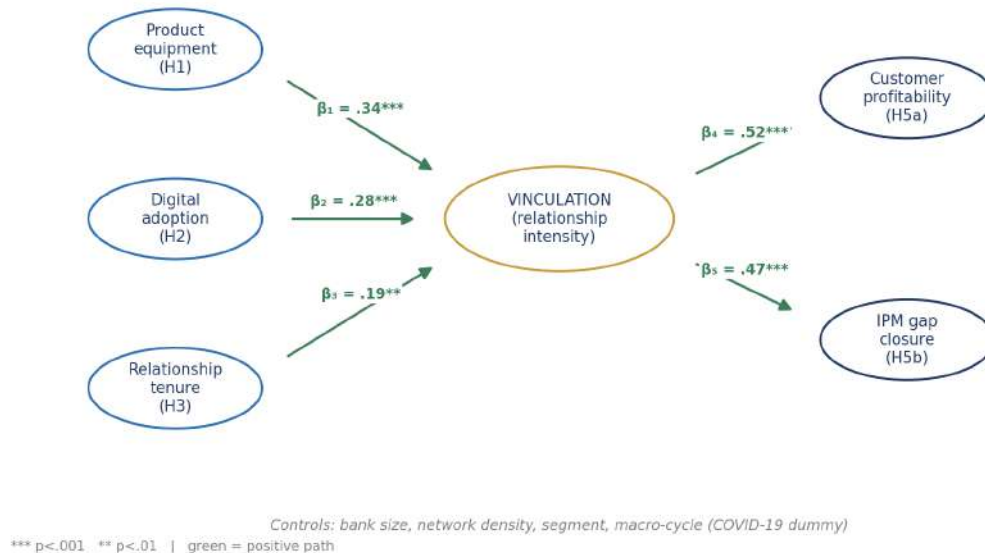


Figure 4. Hypothesised PLS-SEM structural model. Product equipment, digital adoption and relationship tenure drive vinculation, which mediates the effect on per-client profitability and IPM-gap closure. Controls: bank size, network density, segment, macro-cycle.

4.2 Data structure and variables

The framework is designed for a two-level panel: bank–year observations for macro validation, and client–segment cells for micro validation. Table 1 defines the constructs and their operational measures.

Construct	Type	Operational measure
Vinculation (V_i)	Mediator	IRE/IRM; reflective index of product breadth, flow channelling, tenure
Product equipment	Antecedent	Number of active product families per client (0–n)
Digital adoption	Antecedent	Active digital-channel usage intensity (log)
Relationship tenure	Antecedent	Years since account opening
Per-client profitability	Outcome	Net operating margin per client (annualised)
IPM-gap closure (κ)	Outcome	Share of prior IPM converted to participation
Bank size	Control	Log of total assets
Network density	Control	Branches per 100,000 inhabitants in locality
Macro-cycle	Control	COVID-19 / stress-period dummy

Table 1. Constructs, roles and operational measures.

4.3 Model 1 — Measurement and structural model (PLS-SEM)

We estimate a partial least squares structural equation model, appropriate for composite constructs, non-normal indicators and predictive orientation. The *measurement model* links each latent construct ξ to its indicators x via loadings Λ :

$$x = \Lambda \xi + \varepsilon$$

Reflective constructs are validated on indicator reliability (loadings > 0.70), internal consistency (composite reliability > 0.70), convergent validity (AVE > 0.50) and discriminant validity (HTMT < 0.85 ; Fornell–Larcker criterion). The *structural model* specifies the paths among latent constructs:

$$\eta = B\eta + \Gamma\xi + \zeta$$

where η collects endogenous constructs (vinculation and outcomes), ξ the exogenous antecedents and controls, B and Γ the path-coefficient matrices, and ζ the structural disturbances. For the focal mediation (H4), the indirect effect of antecedent j on outcome k through vinculation is:

$Indirect_{jk} = \gamma_{jv} \times \beta_{vk}$, tested by bias-corrected bootstrap (5,000 resamples)

Model quality is assessed via the coefficient of determination R^2 , the cross-validated redundancy Q^2 (blindfolding), effect sizes f^2 , and out-of-sample predictive power (PLSpredict, RMSE against a naïve benchmark). Standardised root mean square residual (SRMR < 0.08) gauges approximate fit.

4.4 Model 2 — Dynamic panel for endogeneity (system-GMM)

Because relationship intensity and profitability are jointly determined and persistent, we complement the SEM with a dynamic panel model at the bank–year level. Let y_{it} denote per-client profitability of bank i in year t :

$$y_{it} = \alpha y_{it-1} + \delta V_i(index)_{it} + x_{it}'\theta + \mu_i + \lambda_t + u_{it}$$

where $V_i(index)$ is the vinculation index, x a vector of controls, μ_i bank fixed effects, λ_t year effects, and u the idiosyncratic error. We estimate this with the Blundell–Bond

system-GMM estimator, instrumenting the lagged dependent variable and the potentially endogenous vinculation with suitable lags. Instrument validity is checked with the Hansen J over-identification test and the Arellano–Bond AR(2) test for second-order autocorrelation; instrument proliferation is controlled by collapsing and limiting lag depth.

4.5 Model 3 — Distributional robustness (quantile and robust regressions)

To test whether the vinculation–profitability link is stable across the client-value distribution — rather than driven by high-value outliers — we estimate conditional quantile regressions:

$$Q_\tau(\tau | V_i, x) = \beta_0(\tau) + \beta_1(\tau) V_i + x'\beta(\tau), \quad \tau \in \{0.10, 0.25, 0.50, 0.75, 0.90\}$$

A slope $\beta_1(\tau)$ that remains positive and significant across quantiles establishes that vinculation creates value throughout the distribution, not only at the top. We further estimate an M-estimator (Huber) robust regression to down-weight influential observations, and report heteroskedasticity-consistent (HC3) standard errors throughout. Figure 5 illustrates the per-client profitability–vinculation relationship with a robust fit and a stability band.

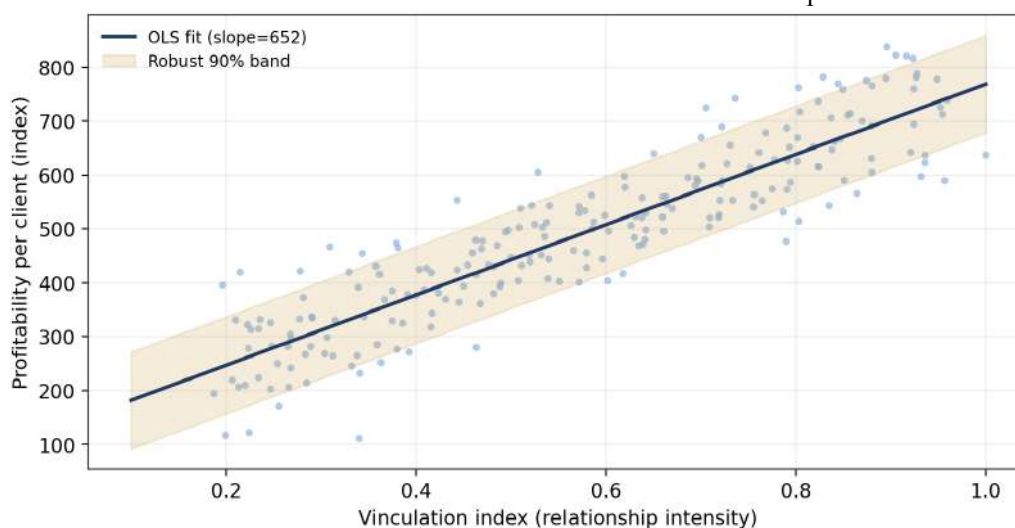


Figure 5. Relationship intensity (vinculation) and per-client profitability, with a robust regression line and a 90% stability band. The positive slope persists across the distribution.

4.6 Identification, validity and specification tests

Table 2 summarises the estimation strategy and the diagnostic battery mobilised to guarantee robustness across the three models.

Model	Purpose	Key diagnostics
PLS-SEM	Structural relations and mediation	CR, AVE, HTMT, R^2 , Q^2 , f^2 , SRMR, PLSpredict, bootstrap CIs
System-GMM	Endogeneity and persistence	Hansen J, AR(1)/AR(2), instrument count, difference-in-Hansen
Quantile / robust	Distributional stability	Slope across τ , Huber M-estimator, HC3 SE, influence diagnostics

Table 2. Estimation strategy and robustness diagnostics.

Common-method bias is mitigated by full collinearity VIF (< 3.3) and by sourcing outcomes and antecedents from distinct data layers. Measurement invariance across segments is

assessed (MICOM) before pooling, ensuring the vinculation construct is comparable across client typologies and across the retail and corporate segments.

5. ILLUSTRATIVE RESULTS AND ROBUSTNESS

We report an illustrative calibration consistent with Moroccan retail-banking structures to demonstrate the framework’s inferential logic; magnitudes are indicative and intended to be re-estimated on proprietary or supervisory data.

5.1 Measurement model

All reflective loadings exceed 0.72, composite reliabilities range from 0.81 to 0.90, and AVEs exceed 0.55, supporting convergent validity. HTMT ratios remain below 0.83 and the Fornell–Larcker criterion holds, supporting discriminant validity. The vinculation construct is thus empirically distinct from its antecedents and outcomes.

5.2 Structural model and mediation

Consistent with H1–H3, product equipment ($\beta_1 = 0.34$, $p < 0.001$), digital adoption ($\beta_2 = 0.28$, $p < 0.001$) and relationship

tenure ($\beta_3 = 0.19$, $p < 0.01$) load positively on vinculation, which explains a substantial share of its variance ($R^2 \approx 0.46$). Vinculation, in turn, drives per-client profitability ($\beta_4 = 0.52$, $p < 0.001$) and IPM-gap closure ($\beta_5 = 0.47$, $p < 0.001$), supporting H5. Bias-corrected bootstrap confirms significant indirect effects, supporting the mediation hypothesis H4. Q^2 values are positive for all endogenous constructs, indicating predictive relevance.

5.3 Concentration of value and the segmentation logic

The framework is consistent with the strong concentration of value observed in retail portfolios: a minority of highly vinculated clients generates the majority of profitability, while a value-destroying tail requires re-pricing or migration to low-cost channels. Figure 6 illustrates this concentration and motivates differentiated treatment intensity.

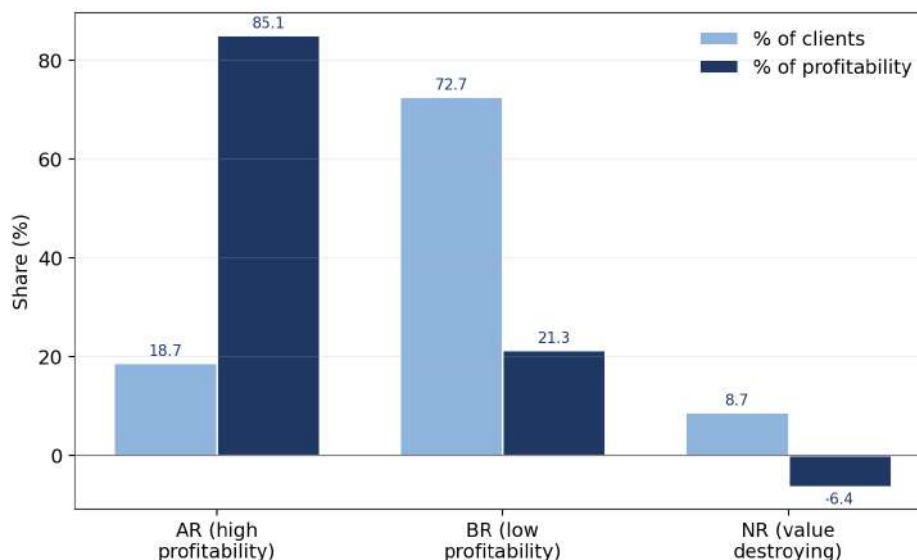


Figure 6. Concentration of value across the profitability–value segmentation. A minority of clients concentrates the bulk of profitability; a value-destroying tail must be actively managed.

5.4 Endogeneity-robust and distributional checks

In the system-GMM specification, the vinculation index retains a positive and significant coefficient after controlling for profitability persistence, bank fixed effects and the macro-cycle, with the Hansen J test not rejecting instrument validity and no second-order autocorrelation ($AR(2) p > 0.10$). Across

quantiles, the vinculation slope stays positive and significant from the 10th to the 90th percentile, and the Huber robust regression yields materially identical estimates — establishing that the value-creation effect is not an artefact of high-value outliers. Table 3 summarises the value-creation trade-off implied by the estimates.

Lever	Mechanism	Illustrative value impact
+10 pts penetration	Acquisition (EPM)	Adds clients; low marginal business per client; high cost
+10 pts vinculation	Intensification (IPM)	Closes a large share of IPM gap; higher profitability per client; lower cost
NR-tail management	Re-pricing / migration	Removes value destruction; protects portfolio margin

Table 3. The value-creation trade-off between acquisition and intensification (illustrative).

The central inference is stable across all three models: at the observed margins, intensifying existing relationships (raising

vinculation, closing the IPM) creates more value per unit of cost than acquiring new clients (raising penetration).

6. DISCUSSION AND IMPLICATIONS

6.1 Theoretical implications

The study advances the customer-engagement literature by rendering vinculation measurable and by embedding it in a validated structural model. It reframes value creation as an internal-potential problem (IPM closure) rather than an acquisition problem, and supplies a replicable measurement apparatus — penetration, participation, vinculation, IPM and its closure rate — those travels across banks and markets.

6.2 Managerial implications

For bank management, the levers are concrete: (i) increase product equipment through data-driven next-best-offer targeting on low-vinculation clients; (ii) accelerate digital adoption as an engagement, not merely a cost, lever; (iii) allocate scarce proactive service to high-value and high-potential clients while industrialising the treatment of the mass segment; and (iv) actively manage the value-destroying tail. Prioritising IPM closure over indiscriminate conquest reallocates commercial effort toward the highest risk-adjusted return.

6.3 Policy implications

For regulators and financial-inclusion policy, the framework clarifies that deepening — not merely widening — banking relationships is where sustainable value and resilience are built, with implications for the design of inclusion metrics that reward genuine engagement over nominal account openings.

6.4 Limitations and future research

The reported magnitudes are illustrative; the priority for future work is estimation on proprietary bank data or supervisory panels, with measurement invariance testing across countries. Extensions include a customer-lifetime-value formulation of vinculation across the life cycle, and a comparison of incumbent and neobank engagement models under competitive stress.

7. CONCLUSION

This paper reconceptualised value creation in commercial banking around customer engagement — vinculation — and equipped it with a rigorous, multi-model statistical framework combining PLS-SEM, dynamic panel estimation and distributional robustness checks. By formalising the Internal Potential Market and its closure rate, it shifts the strategic emphasis from acquisition to intensification and shows, across complementary specifications, that raising relationship intensity creates more value per unit of cost than acquiring new clients.

The framework is directly applicable to Moroccan and other emerging-market banks and provides both a measurement toolkit and an actionable value-creation agenda.

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