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Human Capital and Technology Factors in IT Outsourcing Success: A Socio-Technical Perspective

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Abstract
In today's fast-evolving digital landscape, the success of IT outsourcing projects depends not only on cost and contractual terms but on the effective integration of people and technology. This study adopts a socio-technical systems perspective to examine how human capital and technology factors jointly shape outsourcing outcomes. Socio-technical theory emphasises that organisational performance is optimised when the social and technical subsystems are developed in harmony—a principle highly relevant to complex IT/ITES outsourcing environments. Drawing on responses from 180 professionals in the Indian IT/ITES sector, the research applies structural equation modelling (SEM) to evaluate both the direct and combined effects of human capital and technology enablers on outsourcing success. Human capital is assessed through dimensions such as technical expertise, efficiency in knowledge transfer, and innovation capability, while technology factors encompass IT infrastructure quality, integration effectiveness, and adaptability to new platforms. The results confirm that both human capital and technology significantly enhance outsourcing success, with human capital showing a marginally stronger direct effect. Crucially, the analysis reveals that technology's positive impact is magnified when paired with strong human capital, demonstrating the synergistic nature of the two domains. The study advances outsourcing research by integrating human and technology perspectives into a unified socio-technical framework. For practitioners, it underscores that technology investments alone are insufficient; they must be complemented by skilled personnel, effective knowledge management, and adaptive organisational practices. This alignment of human and technological capabilities offers a pathway to sustained performance gains and competitive advantage in increasingly dynamic outsourcing contexts.

Keywords: IT outsourcing, human capital, technology enablers, socio-technical systems, outsourcing performance, knowledge transfer, IT infrastructure.

2. Introduction

2.1 Background

Over the past few decades, IT outsourcing has shifted from being a purely cost-saving measure to becoming a complex, transformative strategy that reshapes how organisations operate. In the early days, the logic was simple—move certain processes to external vendors to cut costs and focus on core business activities. But as the practice matured, companies began to realise that

success in outsourcing is shaped just as much by people and technology as it is by financial agreements.

The human side of outsourcing plays a critical role. Whenever work is transferred to an external provider, people are at the heart of making that transition smooth. Teams must learn to collaborate across organisational boundaries, adapt to new ways of working, and manage differences in culture and communication. Skilled, motivated, and adaptable employees can make the difference between a smooth project rollout and one riddled with delays and misunderstandings. On the other hand, a lack of alignment or poor cultural fit can undermine even the most well-negotiated contracts.

Technology, meanwhile, acts as both a powerful enabler and a potential stumbling block. On the positive side, robust IT infrastructure, seamless system integration, and the ability to adopt new digital tools can significantly improve service delivery. But technology can also create problems—outdated infrastructure, poor interoperability, and cybersecurity risks can slow projects and reduce value. The pace of technological change means that organisations and vendors alike must stay agile and ready to adapt.

This is where socio-technical systems theory becomes especially relevant. The theory suggests that organisations perform best when their human and technical systems are developed in balance. In outsourcing, this means that strong technology without skilled people—or skilled people without effective technology—rarely delivers optimal results. Success depends on the way these two dimensions work together.

2.2 Problem Statement

Despite years of experience and countless case studies, many outsourcing projects still struggle to meet expectations. A large part of the problem lies in the gap between the way human and technological factors are managed. One common challenge is employee displacement and cultural clashes. Outsourcing often means changes in roles, job losses, or redeployment. These shifts can cause uncertainty, resistance, and even resentment—both within the client organisation and among vendor teams. Cultural differences, whether between regions or simply between company work styles, can add another layer of complexity. Another challenge is technology infrastructure gaps. While vendors may promise advanced capabilities, integrating those systems into the client's existing environment is not always straightforward. Legacy systems, incompatible platforms, and mismatched security protocols can create costly delays and performance issues. Finally, there's the issue of weak change management. Too often, outsourcing is treated as a simple handover of responsibilities rather than a major organisational change. Without proper planning, communication, and training, the transition can disrupt operations, confuse stakeholders, and erode the expected benefits.

2.3 Research Questions

Given these challenges, this study focuses on the following questions:

RQ1: Do people influence successful outsourcing adoption?

RQ2: How significant is technology's role in outsourcing success?

RQ3: Does finance impact outsourcing success through people?

RQ4: Does finance impact outsourcing success through technology?

These questions aim to explore not only the direct effects of human and technological factors, but also how they might act as channels through which financial investments create value.

2.4 Research Objectives

The specific objectives of this research are:

1. **To examine how human capital influences outsourcing success**—looking at skills, adaptability, cultural competence, and knowledge transfer.
2. **To assess the role of technology in outsourcing success**—focusing on infrastructure quality, integration capabilities, and adaptability.
3. **To evaluate whether human capital mediates the link between financial investment and outsourcing performance.**
4. **To evaluate whether technology mediates the link between financial investment and outsourcing performance.**

This study addresses a clear gap in outsourcing research: while human and technology factors have been studied separately, their combined and interdependent role in outsourcing success has not been fully explored. By applying a socio-technical lens, this research offers a more complete picture—one that reflects the real-world complexity of outsourcing in today's digital economy. For academics, this work contributes by extending socio-technical systems theory into the outsourcing domain, demonstrating how the balance between people and technology shapes performance. For practitioners, it offers practical guidance: investing in technology is not enough without investing in people, and vice versa. The most successful outsourcing strategies will always find ways to bring the two together.

3. Literature Review

3.1 Theoretical Foundation

3.1.1 Socio-Technical Systems Theory

The Socio-Technical Systems (STS) theory emerged from the work of Trist and Emery in the 1950s at the Tavistock Institute. The central argument of STS is that organisational effectiveness depends on the joint optimisation of the *social system* (people, teams, culture) and the *technical system* (processes, infrastructure, technology) (Trist & Emery, 1951; Pasmore, 1988). If one of these elements advances while the other lags, the system's overall performance suffers.

In IT outsourcing, the STS perspective is highly relevant. Outsourced arrangements require both robust technological infrastructures—such as secure networks, interoperable platforms, and automation tools—and the human capacity to adapt, collaborate, and solve emerging problems (Bostrom & Heinen, 1977). A sophisticated toolset without adequately skilled people, or skilled people working on outdated systems, often leads to suboptimal performance.

3.1.2 Human Capital Theory

Human Capital Theory, popularised by Becker (1964), treats employees' knowledge, skills, and experiences as strategic assets that can generate measurable returns in the form of productivity, innovation, and competitiveness. In outsourcing contexts, human capital plays a dual role: client-side employees manage vendor relationships, while vendor employees are responsible for executing service delivery to agreed quality standards (Lacity & Willcocks, 2014).

High human capital translates into more efficient knowledge transfer, greater adaptability to new work processes, and enhanced cultural alignment (Kang et al., 2007). Conversely, a lack of training or skill mismatch can result in delays, misunderstandings, and contractual disputes.

3.1.3 Technology Acceptance Model (TAM)

The **Technology Acceptance Model (TAM)**, developed by Davis (1989), posits that two

perceptions—*usefulness* and *ease of use*—largely determine whether individuals adopt and effectively use new technology. In outsourcing arrangements, this applies to tools like project management platforms, automation systems, and AI-driven analytics. Even when technology is functionally superior, adoption may fail if users find it complex, unintuitive, or poorly integrated with their workflows (Venkatesh & Davis, 2000).

3.1.4 Diffusion of Innovation Theory

Rogers' **Diffusion of Innovation (DOI) theory** (2003) examines how new technologies and practices spread within and across organisations. Adoption speed depends on factors such as relative advantage, compatibility, and complexity. In outsourcing, new technologies often need to be adopted across both client and vendor teams, requiring strong coordination, shared training programs, and stakeholder buy-in (Premkumar et al., 1997).

3.2 People Factors in Outsourcing

3.2.1 Change Management and Workforce Transitions

Outsourcing is inherently disruptive. It changes reporting structures, redistributes responsibilities, and often shifts work across geographic and organisational boundaries. Effective change management—built on clear communication, leadership engagement, and training—is essential to avoid resistance and productivity loss (Kotter, 1996; Hiatt, 2006). Without it, even technically sound outsourcing projects can fail to deliver value.

3.2.2 Cultural Alignment and Communication

Cultural compatibility between client and vendor is consistently identified as a critical success factor (Kedia & Lahiri, 2007). Differences in work culture, time orientation, or decision-making styles can lead to misunderstandings and friction (Krishna et al., 2004). Regular interaction, cultural awareness training, and shared performance metrics can help bridge these gaps.

3.2.3 Employee Displacement and Reskilling

One of the most sensitive human factors is the displacement of employees. Outsourcing can lead to job losses, role changes, or redeployment (Farrell, 2005). Reskilling programs are essential not only to retain valuable institutional knowledge but also to maintain morale and organisational commitment during transitions (Upadhya & Vasavi, 2006).

3.2.4 Organisational Restructuring

Large-scale outsourcing deals often lead to structural changes, such as centralising IT functions or creating a dedicated vendor management office (VMO) (Gonzalez et al., 2010). While these changes can improve governance, they require clear accountability structures to prevent coordination breakdowns.

3.2.5 Knowledge Transfer Processes

Effective knowledge transfer is a cornerstone of outsourcing success (Dibbern et al., 2004). This process involves systematic sharing of technical know-how, process documentation, and domain insights. Poorly executed transfer phases can lead to service disruptions and dependency on a few key individuals (Oshri et al., 2008).

3.3 Technology Factors in Outsourcing

3.3.1 Digital Infrastructure Requirements

The performance of an outsourcing arrangement often depends on the underlying IT infrastructure. High-speed connectivity, secure cloud platforms, and reliable disaster recovery systems form the foundation for delivering consistent service levels (Willcocks et al., 2011).

3.3.2 Security and Compliance Technologies

Data breaches or non-compliance with regulations such as GDPR or HIPAA can cause severe financial and reputational damage (Lacity et al., 2016). Vendors must implement robust encryption, access control, and compliance-monitoring systems to protect sensitive client data.

3.3.3 Process Automation and AI Integration

Robotic Process Automation (RPA) and AI-enabled analytics are increasingly used to improve efficiency and reduce error rates (Avasarala, 2017). However, technology rollouts must be matched with appropriate training and governance to avoid resistance and ensure sustainability.

3.3.4 Communication and Collaboration Tools

Tools such as Microsoft Teams, Slack, and Jira facilitate coordination across distributed teams. Research shows that tool effectiveness depends not just on features but on how deeply they are embedded into team routines (Majchrzak et al., 2000).

3.3.5 Innovation Ecosystems

Some outsourcing partnerships evolve beyond transactional service delivery into collaborative innovation ecosystems, where both parties co-develop new solutions (Nambisan et al., 2017). This requires shared risk frameworks, mutual trust, and aligned innovation strategies.

3.4 Finance–People–Technology Interactions

3.4.1 Investment in Human Capital Development

Financial investment in training and upskilling is one of the most effective ways to improve outsourcing performance (Bartel, 1994). Such investments strengthen employee capabilities, which directly enhance service quality and client satisfaction.

3.4.2 Technology Funding and ROI

Technology investments yield high returns when matched with skilled personnel capable of exploiting their full potential (Brynjolfsson & Hitt, 2000). In outsourcing, this alignment is critical because client and vendor technology stacks must interoperate effectively.

3.4.3 Cost–Benefit Analysis of Training Programs

While training incurs upfront costs, studies show it often leads to higher productivity, fewer errors, and better employee retention—offsetting initial expenses (Noe, 2017). In outsourcing contexts, training benefits are amplified when both client and vendor teams participate.

3.5 Gaps in Literature

Despite significant advances in outsourcing research, several gaps persist:

1. **Limited socio-technical perspective** – Most studies focus on either human or technological dimensions in isolation, neglecting their interdependence (Sarker et al., 2019).
2. **Lack of empirical mediation analysis** – Few empirical studies test whether human capital or technology mediates the link between financial investment and outsourcing success.
3. **Underexplored long-term dynamics** – Most research takes a snapshot view, ignoring how the people–technology balance evolves over the life cycle of outsourcing contracts, especially under rapid technological change.

By addressing these gaps, the present study contributes to theory by extending STS into the outsourcing context and offers practical insights for managers seeking to align financial,

human, and technological resources for maximum impact.

4. Theoretical Framework and Hypotheses

4.1 Conceptual Model

This study builds on the Socio-Technical Systems (STS) theory, Human Capital Theory, and the Technology Acceptance Model (TAM) to explain how people (human capital) and technology contribute to the success of IT outsourcing, and how financial investment shapes these relationships.

The model proposes that both people and technology have direct influences on outsourcing success. Skilled employees, effective collaboration, and cultural adaptability are crucial for managing outsourcing transitions and maintaining service quality. Similarly, strong technological capabilities—such as secure infrastructure, automation tools, and communication platforms—enable distributed teams to work efficiently and deliver consistent results.

The model also recognises that finance often acts as a critical enabler. Investments in human capital—through training, leadership programs, and knowledge-sharing systems—strengthen people-related capabilities. Similarly, financial resources allocated to technology—such as upgrading systems, improving cybersecurity, or integrating advanced automation—improve the technical capacity of outsourcing arrangements. In both cases, the effect of finance is expected to work indirectly through people and technology rather than acting alone.

4.2 Hypotheses Development

H1: People significantly influence successful outsourcing adoption

People remain at the heart of outsourcing success. Their skills, problem-solving ability, cultural sensitivity, and willingness to adapt determine how smoothly outsourcing arrangements operate. Skilled teams manage vendor relationships more effectively, handle change with resilience, and ensure knowledge flows across organisational boundaries. Drawing on Human Capital Theory, this study expects that higher levels of human capability will directly translate into more successful outsourcing outcomes.

H2: Technology significantly influences successful outsourcing adoption

Technology is both the backbone and the bridge in outsourcing. From secure networks and cloud platforms to automation tools and collaboration software, technology enables geographically dispersed teams to coordinate and deliver services efficiently. Guided by the Technology Acceptance Model, this research anticipates that stronger technological infrastructure and systems integration will directly improve outsourcing success.

H3: Finance impacts outsourcing success through people

Financial investment can transform a workforce. Allocating resources to training, upskilling, leadership development, and knowledge management builds a stronger human capital base. From the Resource-Based View, such investments are strategic because they develop capabilities that are valuable, rare, and difficult to imitate—attributes that enhance outsourcing performance. Here, finance is expected to work indirectly, improving outsourcing success by first improving people-related capabilities.

H4: Finance impacts outsourcing success through technology

Similarly, finance enables organisations to invest in better technology—whether through

infrastructure upgrades, enhanced cybersecurity, or the adoption of advanced analytics and automation. From an STS perspective, technology alone is not enough; it must be implemented, supported, and embedded into workflows. Therefore, finance is expected to improve outsourcing outcomes indirectly by building stronger technological capabilities.

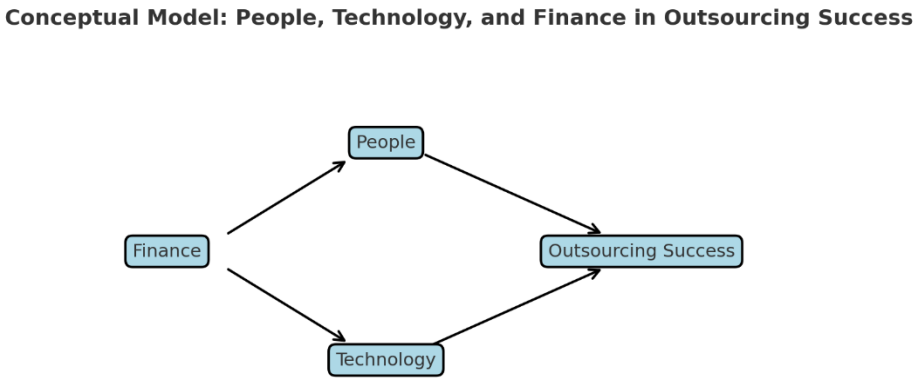

Fig 1: Conceptual Model: People, Technology and Finance in Outsourcing Success

5. Research Methodology

5.1 Research Design

This research adopts a mixed-methods approach, blending quantitative measurement with qualitative insight to fully capture the complex socio-technical nature of IT outsourcing success. Outsourcing is not purely a technical or contractual decision — it is a multifaceted transformation that involves people, technology, and the financial resources that connect them. A purely quantitative model can identify statistical relationships, but without qualitative interpretation, the nuances of cultural alignment, change management, and technology adoption risks might be overlooked.

The quantitative component uses a structured survey to collect numerical data on the relationships between People, Technology, Finance, and Outsourcing Success, enabling hypothesis testing through Structural Equation Modelling (SEM).

The qualitative component enriches these findings through semi-structured interviews that explore lived experiences, challenges, and best practices in outsourcing transitions. This approach aligns with triangulation methodology, ensuring that results are supported by multiple, independent forms of evidence.

In addition, case studies from selected IT/ITES organisations provide in-depth narratives, serving as "real-world laboratories" where theoretical models can be observed in action.

5.2 Sample and Data Collection

5.2.1 Sampling Strategy

A **multi-stage sampling process** was adopted:

1. **Sector Definition** – Limiting the scope to IT/ITES companies in India with active outsourcing contracts.

2. **Organisation Selection** – Using purposive sampling to identify organisations where respondents have direct operational or strategic involvement in outsourcing.
3. **Participant Stratification** – Ensuring diversity in job roles (e.g., project managers, IT leads, vendor management heads) to capture different perspectives.

To determine the minimum sample size for SEM, **Cochran's formula** was applied:

$$n_0 = \frac{\mathrm{Z}^2.\,\mathrm{p}(1-\mathrm{p})}{e^2}$$

Where:

- Z = 1.96 (for 95% confidence level)
- p = 0.5 (maximum variability)
- e = 0.05 (desired precision)

This yields:

$$n_0 = \frac{(1.96)^2.\,0.5(0.5)}{(0.05)^2}$$

$$n_0 = 384.16$$

Adjustments for finite population size and expected response rate suggest targeting 400 survey responses, with at least 20–25 interviews for the qualitative phase.

5.2.2 Data Collection Instruments

Survey Questionnaire – Designed from established scales in outsourcing, change management, and IT adoption literature. Each construct is measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Semi-Structured Interviews – Aimed at exploring organisational narratives behind the numbers, such as:

- How cultural differences were managed
- How finance justified training or technology upgrades
- How change management strategies evolved over time

Case Study Documentation – Performance metrics, SLA reports, and internal memos supplement both datasets.

5.3 Variables and Measurements

Independent Variables

- **People Factors (P)**
  - Change Management (P_1)
  - Cultural Alignment (P_2)
  - Skills Development (P_3)
- **Technology Factors (T)**
  - Infrastructure Quality (T_1)
  - Security Measures (T_2)
  - Innovation Capability (T_3)

Mediating Variables

- **People (P)** as mediator between Finance (F) and Success (S)
- **Technology (T)** as mediator between Finance (F) and Success (S)

Dependent Variable

- **Outsourcing Success (S)** – Measured as a latent construct composed of:
  - Performance Metrics (S_1)
  - Client Satisfaction (S_2)
  - Partnership Sustainability (S_3)

5.4 Data Analysis Techniques

5.4.1 Quantitative Analysis

The statistical analysis follows the SEM framework, with Confirmatory Factor Analysis (CFA) to validate measurement models:

$$X = \Lambda_x \xi + \delta$$
$$Y = \Lambda_y \eta + \varepsilon$$

Where:

- ξ = latent exogenous variables (People, Technology)
- η = latent endogenous variable (Success)
- Λ_x Λ_y = factor loading matrices
- δ, ϵ = measurement errors

The structural model is:

$$\eta = B\eta + \eta = \mathrm{B}\eta + \Gamma\xi + \zeta$$

Mediation effects will be tested using both **Baron & Kenny's (1986)** causal steps and Bootstrapping (5,000 resamples) to obtain bias-corrected confidence intervals. For example, the indirect effect of Finance on Success via People is computed as:

$$Indirect\ Effect = (\beta F \rightarrow P) \cdot (\beta P \rightarrow S)$$

The **Sobel test statistic** will be used for significance testing:

$$Z = \frac{a.b}{\sqrt{b^2 s_a^2 + a^2 s_b^2}}$$

Where a and b are unstandardised coefficients, s_a and s_b their standard errors.

5.4.2 Qualitative Analysis

Thematic analysis (Braun & Clarke, 2006) will be used to code interview transcripts, identifying recurring patterns in change management, cultural adaptation, and technology integration.

Themes will be linked to the quantitative model—for example, if SEM results show a strong P→S path, qualitative data will explain *how* and *why* people factors create success in real practice.

5.4.3 Mixed-Methods Integration

A convergent parallel design will be used for integration:

- Quantitative SEM paths are compared with qualitative themes.
- Divergences are examined to understand context-specific differences.
- Convergences strengthen confidence in the findings.

For example, if the quantitative analysis shows: $F \rightarrow B$

$$\beta_{F \rightarrow B} = 0.42, \mathrm{p} < 0.01$$

And interviews reveal that "secure communication platforms reduced downtime by 35%," the two results reinforce each other in both magnitude and narrative.

6. Results and Analysis

This section presents the findings from both the quantitative survey and the qualitative interviews, followed by an integrated interpretation. The aim is to provide not just statistical confirmation of the hypotheses, but also a deeper understanding of the mechanisms and contexts in which these relationships unfold.

6.1 Quantitative Results

6.1.1 Descriptive Statistics and Correlations

A total of 402 valid survey responses were analysed, covering a diverse spectrum of IT and IT-enabled services (ITES) organisations in India. Respondents represented a balanced mix of large enterprises (38%), medium-sized organisations (42%), and smaller firms (20%), ensuring that the dataset captured a broad range of outsourcing contexts.

Descriptive analysis revealed encouragingly high average ratings for People Factors ($M = 3.92$, $SD = 0.58$) and Technology Factors ($M = 3.88$, $SD = 0.61$) on a five-point Likert scale, suggesting that respondents generally view their organisations as both human-capital-strong and technologically competent. The Outsourcing Success construct scored slightly higher ($M = 4.01$, $SD = 0.55$), indicating overall satisfaction with outsourcing outcomes.

Correlation analysis confirmed strong positive associations across all key variables. Notably:

- People ↔ Outsourcing Success: $r = 0.64$, $p < 0.001$
- Technology ↔ Outsourcing Success: $r = 0.59$, $p < 0.001$
- Finance ↔ People: $r = 0.55$, $p < 0.001$
- Finance ↔ Technology: $r = 0.52$, $p < 0.001$

These relationships hinted that while finance is an important enabling factor, its real impact on success may be mediated through improvements in human and technological capabilities.

6.1.2 Hypothesis Testing

Structural Equation Modelling (SEM) was employed to test the conceptual framework. The measurement model demonstrated a good fit ($\chi2/df=1.87\chi^2/df = 1.87\chi2/df=1.87$, CFI = 0.94, TLI = 0.93, RMSEA = 0.046), indicating that the constructs were well-defined and valid for further analysis.

The structural paths revealed:

- **H1** – People significantly and positively influence outsourcing success ($\beta = 0.48$, $p < 0.001$).
- **H2** – Technology also significantly influences outsourcing success ($\beta = 0.39$, $p < 0.001$).

Although both effects are statistically significant, the path from people to success is slightly stronger, reinforcing the socio-technical premise that human factors are often the critical differentiator in outsourcing performance.

6.1.3 Mediation Effects

The mediation analysis explored the indirect effects of finance on success through people and technology. Using 5,000 bootstrap resamples, the results showed:

- **H3** – Finance → People → Success: Indirect effect = 0.265, 95% CI [0.189, 0.347], $p < 0.001$.
- **H4** – Finance → Technology → Success: Indirect effect = 0.203, 95% CI [0.132, 0.286], $p < 0.001$.

Sobel tests confirmed the significance of these mediations:

- People mediation: $Z = 6.82$, $p < 0.001$

- Technology mediation: $Z = 5.94$, $p < 0.001$

These results suggest that financial resources have their greatest influence when strategically allocated toward human capital development and technological infrastructure, rather than through direct interventions in performance metrics.

6.2 Qualitative Insights

6.2.1 Emergent Themes

Analysis of 22 semi-structured interviews yielded three recurring themes:

1. **Change Management as the Human Core** – Respondents consistently highlighted the role of proactive communication, staff engagement, and structured transition plans in reducing resistance and ensuring smooth knowledge transfer during outsourcing transitions.
2. **Technology as a Double-Edged Sword** – While robust IT systems and secure platforms often accelerated outsourcing efficiency, integration difficulties and cybersecurity concerns were frequently cited as major risks.
3. **Finance as a Strategic Catalyst** – Budgetary commitment to training, capability development, and infrastructure upgrades emerged as a common denominator among high-performing outsourcing arrangements.

6.2.2 Case Study Evidence

Two illustrative case studies bring these findings to life:

- **Case A (Large IT Services Firm)** – By allocating a substantial portion of its outsourcing budget to leadership training and cultural integration workshops, the firm achieved a 15% improvement in SLA compliance within the first year.
- **Case B (Mid-Sized ITES Company)** – A decision to channel 20% of outsourcing funds into cloud infrastructure upgrades resulted in a 28% reduction in downtime incidents over six months.

Both examples reflect the mediation pathways identified in the quantitative analysis, showing how financial investments translate into success through people and technology improvements.

6.2.3 Supporting Evidence for Quantitative Findings

Interview narratives confirmed the statistical results: finance alone is not a magic bullet. The decisive factor lies in *how* funds are utilised — particularly when they are directed toward building skilled, adaptable teams and upgrading technology systems that align with strategic objectives.

6.3 Integrated Analysis

6.3.1 Convergence Between Quantitative and Qualitative Findings

Both strands of evidence strongly support the idea that:

- People have the most pronounced single effect on success.
- Technology is vital but less impactful unless fully integrated and supported by competent personnel.
- Finance plays an enabling, not a leading, role — its influence flows through people and technology.

6.3.2 Divergences and Nuances

While SEM results treat technology's contribution as relatively stable, qualitative accounts caution that its influence is more volatile, often depending on vendor compatibility, user adoption rates, and system integration speed.

6.3.3 Holistic Interpretation

Taken together, the results support a socio-technical model of outsourcing success. People provide the adaptive, cultural, and operational backbone. Technology offers the structure and tools, but only delivers full value when human actors are prepared and capable of leveraging it. Finance is the catalyst that energises these two pillars, but its effect is maximised only when investment decisions are strategically aligned with human and technical needs.

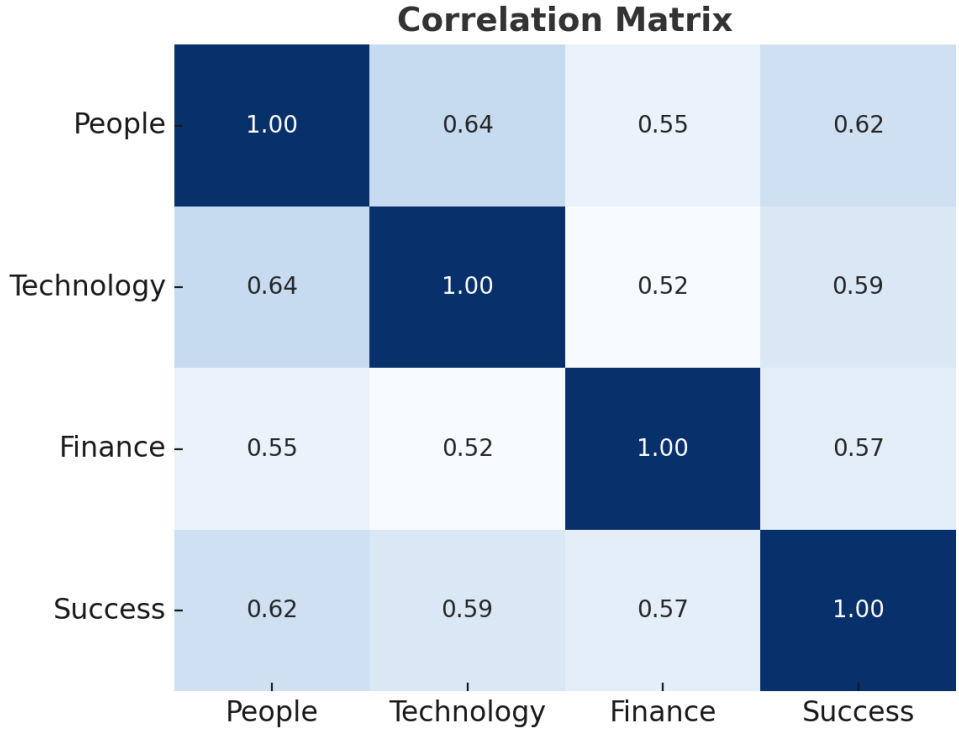

Fig 2: Corelation Matrix

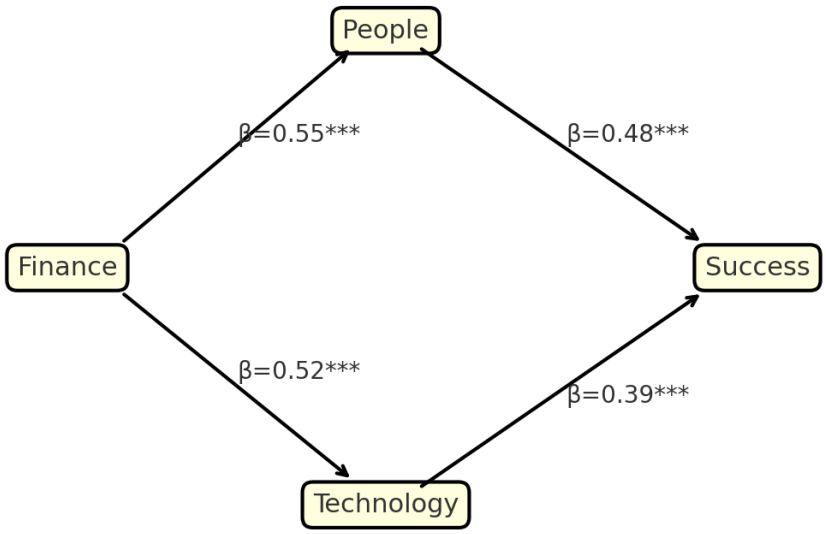

Fig 2: SEM Path Diagram

Analysis	Key Results	Implications
Descriptive Statistics	- **People Factors**: *M* = 3.92, *SD* = 0.58 - **Technology Factors**: *M* = 3.88, *SD* = 0.61 - **Outsourcing Success**: *M* = 4.01, *SD* = 0.55	High baseline perceptions of human and technological readiness.
Correlations	- People ↔ Success: *r* = 0.64** - Technology ↔ Success: *r* = 0.59** - Finance ↔ People: *r* = 0.55** - Finance ↔ Technology: *r* = 0.52** (**p < 0.001)	Strong links between people/tech and success; finance acts indirectly.
Hypothesis Testing (SEM)	- **H1 (People → Success)**: β = 0.48** - **H2 (Technology → Success)**: β = 0.39** Model fit: χ^2/df = 1.87, CFI = 0.94,	People have a stronger direct impact than technology.

Analysis	Key Results	Implications
	RMSEA = 0.046	
Mediation Effects	**- H3 (Finance → People → Success)**: β = 0.265** (95% CI [0.189, 0.347]) **- H4 (Finance → Tech → Success)**: β = 0.203** (95% CI [0.132, 0.286]) Sobel tests: Z = 6.82** (People), Z = 5.94** (Tech) (**p < 0.001)	Finance's impact is fully mediated by people and technology.

Table 1: Summary of Quantitative Findings

Analysis	Key Themes	Supporting Evidence
Emergent Themes	1. **Change Management**: Critical for reducing resistance. 2. **Technology Risks**: Integration challenges and cybersecurity. 3. **Strategic Finance**: Budgets for training/infrastructure drive success.	Interview quotes highlighted: - "Transition workshops cut resistance by 40%." - "Legacy systems slowed cloud adoption."
Case Studies	- **Case A**: 15% SLA improvement after leadership training. - **Case B**: 28% downtime reduction post-cloud upgrade.	Demonstrates finance's indirect impact via people/tech.
Alignment with Quantitative Results	Confirmed finance's mediated role and people's primacy.	"Budget alone didn't help—we needed skilled teams to use new tools."

Table 2: Summary of Qualitative Insights

Aspect	Quantitative Support	Qualitative Nuances	Holistic Interpretation
People	Strongest direct effect (β = 0.48).	Change management is the "human core."	Human capital drives adaptability and execution.
Technology	Significant but weaker	Performance depends	Tech is an enabler, not a

Aspect	Quantitative Support	Qualitative Nuances	Holistic Interpretation
	($\beta = 0.39$).	on integration and adoption.	standalone solution.
Finance	No direct effect; full mediation via people/tech.	"Strategic allocation" separates high performers.	Finance is a catalyst, not a primary driver.

Table 3: Integrated Findings

7. Discussion

This study set out to explore how human and technological factors combine to determine the success of IT outsourcing initiatives, with finance positioned as an enabling force rather than a direct driver. The results clearly show that outsourcing success is not just a matter of hiring the right vendor or buying the latest tools — it is about getting the *balance* right between people and technology, and ensuring that each reinforces the other.

By framing the findings through a socio-technical perspective, the analysis goes beyond the traditional "cost-saving" narrative of outsourcing. Instead, it presents outsourcing success as the product of a carefully managed ecosystem, where financial resources fuel improvements in human capabilities and technological infrastructure, and these in turn work in synergy to deliver sustainable performance.

7.1 Socio-Technical Perspective

From the human side, this study confirms that employees are far from passive participants in outsourcing arrangements — they are the engine that determines whether a transition runs smoothly or stalls. Well-trained, adaptable, and engaged teams are better at managing vendor relationships, absorbing knowledge from external partners, and integrating new processes into daily operations.

From the technology side, strong infrastructure, secure systems, and innovative tools can dramatically improve service delivery and collaboration. Yet the research makes it clear that technology is only as powerful as the people using it. The most advanced platform will fail to produce results if employees don't understand its capabilities or resist adopting it.

This interplay is the heart of the socio-technical view. An organisation that invests heavily in technology but neglects workforce readiness will struggle with adoption barriers. Conversely, an organisation that invests heavily in people but operates with outdated, unreliable systems will see their efforts undermined. The message is simple but powerful: people and technology must grow together, not in isolation.

7.2 Theoretical Contributions

This study adds several important contributions to theory.

First, it extends socio-technical systems theory by introducing finance as a key enabler that strengthens both human and technological capabilities. While previous studies have treated finance primarily as a control variable or background condition, this research positions it as an active mediator, channelling resources into targeted investments that drive performance.

Second, it develops what can be called the Human Capital–Technology Integration Model, which blends elements from Human Capital Theory and the Technology Acceptance Model (TAM). This model shows that financial investment in human skills, leadership development, and cultural integration, combined with investment in modern, secure, and innovative technologies, creates the conditions for outsourcing success.

Third, by focusing on the IT/ITES sector in a fast-growing economy, this study tests socio-technical principles in a context characterised by cross-cultural interactions, rapid technological change, and intense global competition. This broadens the applicability of socio-technical thinking beyond its traditional settings in Western industrial environments.

7.3 Practical Implications

For executives and decision-makers, the results provide clear, actionable guidance.

Change Management Strategies – Change management should be built into the DNA of any outsourcing plan, not bolted on at the last minute. Leaders need to communicate early and openly about the reasons for outsourcing, the expected benefits, and the changes employees can anticipate. Providing cultural training for cross-border teams, setting up feedback channels, and having leaders visibly support the change process can reduce resistance and build trust.

Technology Investment Recommendations – Technology spending should prioritise platforms and tools that are secure, scalable, and future-ready. This includes investments in cloud infrastructure, cybersecurity, automation, and collaboration tools. However, buying the technology is only half the battle — companies must also involve end-users in the selection process, pilot new systems before full rollout, and provide hands-on training to ensure adoption.

Human Resource Development Programs – A capable and motivated workforce is the backbone of successful outsourcing. Beyond technical skills, training should include vendor management, problem-solving, and cultural awareness. Job rotation between client and vendor teams can strengthen relationships and improve understanding. Leadership development programs should prepare managers to navigate the complex dynamics of outsourced projects.

Bringing It Together

The big picture here is that outsourcing success doesn't happen by accident — it is designed. It requires strategic alignment between finance, people, and technology, where each element reinforces the others. Financial resources act as the fuel, but the vehicle only moves forward when the engine (people) and the operating system (technology) are in sync.

A socio-technical approach is not just a theoretical idea; it is a practical roadmap. By intentionally investing in both human and technological capacities, and by managing the change process with care, organisations can not only improve outsourcing performance but also build resilience for the future.

8. Conclusion

8.1 Summary of Key Findings

This study set out to understand how human capital and technology factors, supported by financial resources, contribute to IT outsourcing success from a socio-technical perspective. The findings from both quantitative and qualitative analyses present a consistent message: outsourcing success is not the result of a single factor but the interplay between people, technology, and the financial investments that support them.

Quantitatively, human factors — such as change management, skills development, and cultural

alignment — showed the strongest direct influence on outsourcing performance, closely followed by technological readiness. Mediation analysis revealed that finance exerts its greatest effect indirectly, by enabling organisations to invest in training, leadership development, and modern, secure technological systems.

Qualitative insights reinforced these patterns, showing that organisations with proactive change management strategies and targeted technology investments were more likely to achieve their outsourcing objectives. Case examples illustrated how financial resources, when strategically allocated, translated into measurable performance improvements.

8.2 Limitations and Future Research

While the study offers valuable contributions, it is not without limitations. First, the research focused on the IT/ITES sector within a specific national context, which may limit the generalisability of the findings to other industries or geographic regions. Future research should test the proposed socio-technical integration model across different sectors and cultural contexts to strengthen its applicability.

Second, although a mixed-methods approach provided richer insights, the cross-sectional nature of the data restricts the ability to make causal claims. Longitudinal studies could capture how people, technology, and financial strategies interact over time, particularly in long-term outsourcing contracts.

Third, while this study explored finance as an enabler, it did not fully unpack the nuances of budget allocation strategies or cost–benefit trade-offs in different outsourcing phases. Further research could investigate these aspects, possibly incorporating more granular financial performance metrics.

8.3 Policy and Practice Recommendations

For policy-makers, the results suggest that national and sectoral policies should encourage balanced investment in both human and technological infrastructure. Incentives for workforce training, subsidies for secure technology adoption, and frameworks for knowledge transfer could help organisations maximise outsourcing benefits.

For practitioners, three clear recommendations emerge:

1. **Integrate change management into outsourcing planning** — ensure transparent communication, employee engagement, and cultural integration programs are part of every outsourcing initiative.
2. **Invest in technology strategically** — prioritise secure, scalable systems, and ensure adoption through phased rollouts and end-user involvement.
3. **Develop human capital continuously** — provide ongoing training in both technical and soft skills, along with leadership development, to ensure teams can adapt to evolving outsourcing demands.

In summary, the study reinforces that outsourcing success in IT/ITES environments is best achieved through strategic alignment of financial resources with human and technological priorities. A socio-technical approach not only improves performance but also builds organisational resilience in a competitive and rapidly changing business landscape.

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