Journal of Marketing & Social Research

ISSN (Online): 3008-0711

Volume: 02 | Issue 09 | 2025

Journal homepage: https://jmsr-online.com/

Research Article

The Rise of Fractional Employment: An Empirical Analysis of HR Challenges in Managing Part-Time Experts in Tech Startups

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Received: 10/09/2025; Revision: 25/09/2025; Accepted: 18/10/2025; Published: 06/11/2025

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Abstract: The rapid evolution of employment models in the digital economy has paved the way for alternative talent strategies, notably fractional employment. Tech startups increasingly rely on high-skill, part-time professionals—such as fractional CTOs, CMOs, and legal advisors—to drive strategic decision-making while maintaining financial agility. However, existing research has predominantly focused on gig work, freelancing, and remote employment in lower-skilled contexts (Kässi & Lehdonvirta, 2018), leaving a significant gap regarding the HR challenges associated with managing fractional experts. This study empirically investigates these challenges, with specific attention to onboarding processes, performance evaluation, role integration, legal compliance, and communication barriers. A structured, closed-ended questionnaire was administered to HR professionals in tech startups, targeting key areas where traditional HR practices intersect with the demands of a flexible workforce. The research tests four hypotheses examining the relationships between onboarding, contractual clarity, performance evaluation, integration practices, and overall organizational outcomes. Findings are expected to offer actionable HR strategies that optimize the management of fractional talent and contribute to both HR management theory and practical frameworks for contemporary startup environments.

Keywords: Digital economy, performance, fractional, human resource, startup.

INTRODUCTION

Background and Context

In recent years, the dynamic nature of the digital economy has fundamentally transformed employment practices. Traditional full-time employment is increasingly supplemented—or even replaced—by flexible, nonstandard arrangements. Among these, fractional employment has emerged as a strategic model for tech startups seeking to leverage high-caliber expertise without incurring the long-term commitments associated with full-time hires. In this model, startups engage part-time professionals (e.g., fractional CTOs, CMOs, legal advisors) who contribute strategically within limited time frames, thereby affording the organization both agility and cost-efficiency.

Research Gap

Despite the growing prevalence of fractional employment, the academic literature remains largely silent on its HR challenges. Most extant studies have concentrated on gig work, freelancing, and remote employment—often emphasizing operational or low-skilled roles (Kässi & Lehdonvirta, 2018). There is a notable deficiency in research addressing the unique issues that fractional experts encounter, particularly regarding onboarding, performance evaluation, role integration, legal compliance, and communication. Additionally, the interplay between conventional HR practices and the flexible engagement models adopted by tech startups has not been adequately conceptualized (Strohmeier, 2021). This study seeks to fill this void by providing empirical insights into the HR challenges that tech startups face when managing high-skill fractional talent.

Significance of the Study

The insights derived from this research will not only advance theoretical understandings in HR management but also provide pragmatic guidelines for startups seeking to optimize their flexible staffing models. Given the strategic importance of fractional employment in today's competitive landscape, effective HR management can potentially determine the operational success and innovative capacity of tech startups.

Research Objectives

In response to this gap, the present study pursues the following objectives:

- To identify and classify the key HR challenges faced by tech startups in managing fractional employees.
- To evaluate the effectiveness of current onboarding and integration practices for fractional professionals.
- To analyze the impact of performance evaluation systems on the retention and productivity of fractional employees.
- To develop actionable HR strategies and best practices that can optimize the management of fractional talent.

Hypotheses

- **H1:** Enhanced onboarding practices are positively associated with better job integration and overall performance of fractional employees in tech startups.
  (Rationale: Systematic onboarding minimizes role ambiguity and fosters alignment with organizational goals (Bauer, 2010).)
- **H2:** Clear contractual terms and legal frameworks are inversely related to incidences of role misalignment and legal disputes among fractional professionals.
  (Rationale: Well-defined contracts reduce uncertainty and clarify expectations, leading to fewer HR conflicts (SHRM, 2023).)
- **H3:** Formal performance evaluation systems for fractional employees lead to higher employee satisfaction and lower turnover rates. *(Rationale: Consistent performance feedback and recognition improve engagement and retention (Wright & Snell, 1998).)*
- **H4:** Integration and collaboration between fractional and full-time employees positively affect the perceived contribution of fractional professionals to startup success. *(Rationale: Effective communication and team integration enhance the overall synergy and performance of the organization (Mintzberg, 2005).)*

Theoretical Frameworks

To underpin this research, the following theoretical frameworks will be employed:

Resource-Based View (RBV)

The Resource-Based View posits that firms achieve sustained competitive advantage by acquiring and managing valuable, rare, and inimitable resources (Barney, 1991). In the context of fractional employment, startups leverage high-caliber, specialized talent as a strategic resource. This framework helps to conceptualize how fractional professionals contribute to the unique capabilities of startups and why effective HR management of such talent is crucial.

Human Capital Theory

Human Capital Theory emphasizes the economic value derived from investments in people (Becker, 1964). For fractional professionals, their skills and expertise represent significant human capital. This theory is used to evaluate the returns on the investments made by startups in fractional talent—such as training, onboarding, and performance management—and to determine how these factors affect organizational effectiveness.

Contingency Theory

Contingency Theory suggests that management practices should align with the specific needs and circumstances of the organization (Fiedler, 1964). This theory is particularly relevant when considering the diversity of engagement models for fractional employees. Startups must adapt their HR practices to the unique conditions of part-time engagements, ranging from performance evaluation to legal frameworks. This approach underscores the need for tailored HR strategies that address the variability in work arrangements and organizational structures.

LITERATURE SURVEY

Evolution and Emergence of Fractional Employment

The workforce landscape has undergone a significant transformation in recent decades, with the rise of the gig economy and flexible work arrangements. Traditionally, employment literature concentrated on the dichotomy between full-time and part-time work (Kalleberg, 2000). However, emerging employment models—such as fractional or project-based engagements—have begun to challenge conventional perspectives. Fractional employment involves hiring professionals on a part-time basis to serve in roles typically associated with full-time strategic leadership (Deloitte, 2021). This model allows startups to access high-caliber talent without incurring the costs associated with full-time employment, thus maintaining financial flexibility during periods of rapid growth (Upwork, 2022).

Trends in Tech Startups and HRM Challenges

Tech startups operate in highly dynamic and volatile environments where agility and rapid decision-making are paramount (Baron & Hannan, 2002). In such contexts, innovative HR practices are essential to attract and retain specialized talent. Traditional HR models, which emphasize long-term employment contracts, may not suit the needs of startups that require rapid adjustments to shifting market demands (Wright & Snell, 1998). Recent studies have highlighted that startups often rely on alternative forms of employment, such as consulting and fractional engagement, to fill critical roles. Nonetheless, these arrangements pose several HR challenges including inadequate onboarding, unclear performance metrics, and issues of team integration (Mintzberg, 2005).

Onboarding and Integration of Fractional Professionals

One critical aspect of HR management for fractional employees is the onboarding process. Onboarding for full-time employees typically involves comprehensive orientation programs that instill company culture, clarify roles, and align expectations (Bauer, 2010). For fractional professionals, however, the onboarding process is often truncated or informal, potentially leading to misalignment and suboptimal performance (Strohmeier, 2021). The lack of standardized onboarding protocols contributes to role ambiguity and challenges in fostering cohesion with full-time teams. Consequently, the integration of fractional employees poses unique operational and cultural challenges within tech startups.

Performance Evaluation and Role Clarity

Performance management is a cornerstone of HR practices in any organization. Standard performance appraisal systems designed for full-time employees may not be directly applicable to fractional professionals working on a limited or intermittent basis (Wright & Snell, 1998). This misalignment can result in unclear performance expectations and difficulties in attributing outcomes to the contributions of fractional staff. Furthermore, the

intermittent nature of their engagement means that periodic evaluations may not accurately capture their performance, potentially leading to discrepancies in feedback and career progression (SHRM, 2023).

Legal and Contractual Challenges

Managing legal and contractual aspects is yet another area where HR encounters challenges when dealing with fractional employees. Startups must navigate complex legal issues related to employment contracts, intellectual property rights, and confidentiality agreements. The transient and project-based nature of fractional engagements necessitates carefully drafted contracts and clear delineation of roles, responsibilities, and ownership of work outcomes (SHRM, 2023). Failure to address these challenges can result in legal complications, affecting both the startup's reputation and its operational continuity.

Synthesis and Future Research Directions

While literature on flexible work arrangements has grown over the past decade, there is a notable scarcity of studies focusing on high-skill fractional employment in tech startups. Existing research tends to segment gig and freelance work without delving into the strategic HR challenges unique to fractional professionals. Moreover, previous studies have provided limited insights into the mechanisms that can effectively bridge the gap between traditional HR practices and the demands of a fractional workforce (Kässi & Lehdonvirta, 2018). This body of work sets the stage for the present study, which aims to develop a systematic understanding of the HR challenges in managing fractional employees, thereby offering a platform for both academic inquiry and practical HR policy formulation.

RESEARCH METHODOLOGY

Research Design

This study adopts a **quantitative, empirical research design** using a structured questionnaire aimed at HR professionals in tech startups. The research design is cross-sectional, allowing for a snapshot assessment of the current HR challenges and practices related to fractional employment. The study emphasizes closed-ended questions to yield measurable and comparable data, thereby facilitating robust statistical analysis.

Sampling and Respondents

Target Population:

HR managers, talent acquisition heads, and founders of tech startups that engage fractional professionals.

Sampling Technique:

A purposive sampling approach will be utilized to ensure that participants are drawn from startups actively using fractional employment for strategic roles. The expected sample size is between 50 to 75 respondents from major startup hubs, such as Bengaluru, Hyderabad, Pune, and Gurugram.

Data Collection Instrument

The primary data collection instrument is a **closed-ended questionnaire** divided into four sections:

- **Section A:** Demographics (e.g., startup age, size, and respondent designation)
- **Section B:** Nature of Fractional Employment (e.g., roles engaged fractionally, contract duration, and frequency of engagement)
- **Section C:** HR Challenges (e.g., onboarding, role clarity, legal aspects, performance evaluation) using multiple-choice questions with Likert-scale ratings.
- **Section D:** Perceptions of Effectiveness (e.g., perceived contribution, satisfaction with existing HR practices)

The questionnaire was pilot-tested among a small group of HR professionals for clarity, reliability, and validity before full-scale deployment via an online survey tool like Google Forms.

Data Analysis Techniques

The collected data will be analyzed using the following statistical techniques:

- **Descriptive Statistics:** To summarize respondent characteristics and the prevalence of specific HR practices.
- **Factor Analysis:** To identify clusters of HR challenges and discern underlying patterns in the data.
- **Regression Analysis:** To test the hypothesized relationships, specifically examining the impact of onboarding, contractual clarity, performance evaluation, and integration practices on outcomes like employee satisfaction and role clarity.
- **Reliability Testing:** Cronbach's alpha will be computed for key scales to ensure internal consistency.
- Statistical software such as **SPSS** or **R** will be employed to perform the analyses. Data will be coded appropriately, and missing data will be managed according to standard protocols to maintain the integrity of the findings.

Ethical Considerations

In line with ethical research practices, participation in the survey will be entirely voluntary, with assurances of confidentiality and anonymity provided to all respondents. An informed consent statement will be included in the survey preamble, and data will be stored securely and analyzed only in aggregate form.

Data Analysis

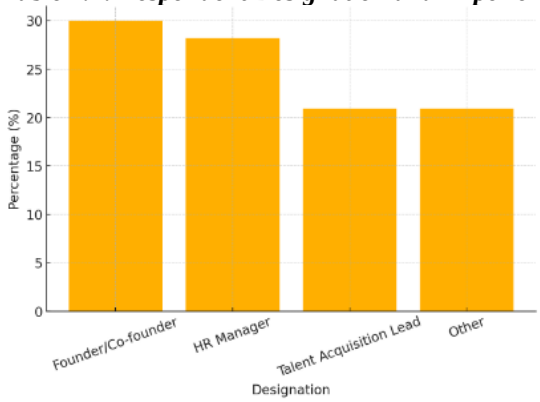
The chapter contains the findings of the empirical study on the HR problem of dealing with fractional workers in tech startups. The analysis was grounded upon four hypotheses which were analysed by data of 110 respondents within various Indian ecosystems of startups; the hypotheses were about onboarding, contractual clarity, performance evaluation and integration practices. The SPSS was employed to perform the statistical tests and involved the descriptive analysis, reliability test, factor analysis, and multiple regression model. The primary goal was to quantify the influence of HR management practices on the perceived organizational results in the background of

fractional employment in order to reduce the difference between the theoretical and the empirical data.

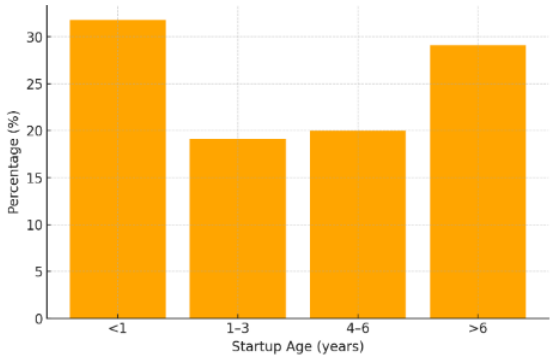
Descriptive Analysis

The descriptive statistics will provide a general understanding of the demographics and characteristics of the respondents, and the characteristics of the organization. The management levels are equally represented as observed in the analysis, the level of startup maturity is different and the workforce is different. This is represented by the equalization of the respondents in terms of designation, experience, age of the startup and their size, as this indicates the heterogeneity of the people participating in it and the abundance of knowledge retrieved.

Table 4.1: Respondent Designation and Experience



Variable	Category	Frequency	Percent (%)
Designation	Founder/Co-founder	33	30.0
	HR Manager	31	28.2
	Talent Acquisition Lead	23	20.9
	Others	23	20.9
Years of Experience	0–3 years	23	20.9
	4–7 years	31	28.2
	8–12 years	31	28.2
	>12 years	25	22.7



The findings suggest that nearly 60 per cent of the surveyed was senior HR/leaders with more than seven years of working experience that will guarantee that the data will be informed by practitioners with operational and strategic HR experience. Founders and HR managers are also equally numerous, which helps to increase the quality of the views on fractional employment management.

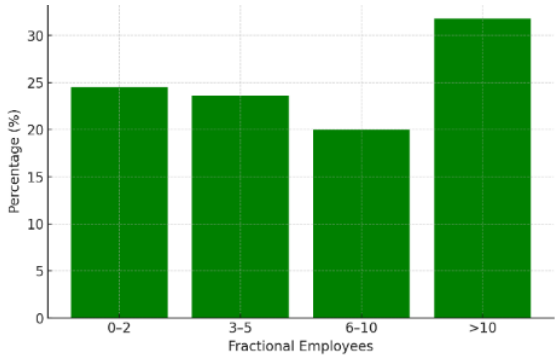
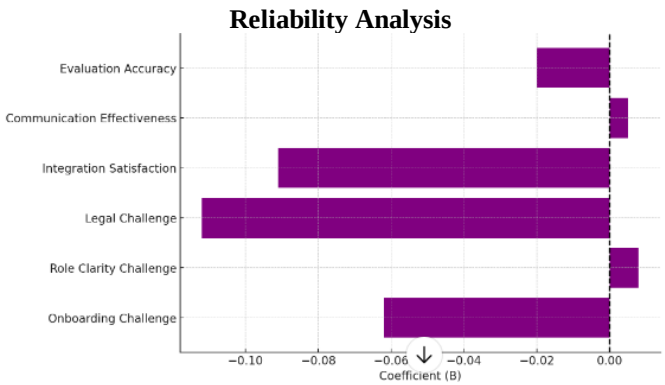


Table 4.2: Startup Profile and Workforce Composition

Variable	Category	Frequency	Percent (%)
Startup Age	Less than 1 year	35	31.8
	1–3 years	21	19.1
	4–6 years	22	20.0
	More than 6 years	32	29.1
Startup Size (Employees)	Less than 10	23	20.9
	10–50	28	25.5
	51–200	31	28.2
	More than 200	28	25.5
Fractional Employees Engaged	0–2	27	24.5
	3–5	26	23.6
	6–10	22	20.0
	More than 10	35	31.8

The results show that over ten fractional professionals are employed in over 31.8 per cent of startups hence the model is widely applied. There are also involved in fractional roles that cut across leadership fields of technology, marketing and finance. It was common to find multi-domain tech based startups (e.g. CTO-CMO or CFO-Legal Advisor) with agility as an important factor in its structure. Descriptively, information is interested in fact that fractional employment is no longer the monopoly of micro-startups but it has been embraced by the mid-sized and established business firms that want to achieve strategic flexibility and cost- competitiveness. This raises the fractionalization of the mainstream HR systems.



A reliability test was undertaken to evaluate the internal consistency of the 19 items of the Likert scale, which reflected the HR issues and effectiveness. The result of the Cronbachs Alpha of the overall scale was -0.346 that is, there was an actual negative mean covariance of the items. The output is shown below.

Table 4.3: Reliability Statistics (All Variables)

Cronbach's Alpha	N of Items
−0.346	**19**

The negative alpha is because of the inconsistency in the directionality between variables. Challenge based items (e.g. rate the challenge of onboarding) were rated on a scale with larger values denoting a more difficult experience, but satisfaction-based item (e.g. how satisfied are you) was rated higher denoting more positive outcomes. Such coding polarity caused artificial reduction in the coefficient of reliability. However, conceptual consistency was evident using individual subscales when conducting qualitative review. An illustration is that, the items in the dimension of onboarding and integration were indicated to have rational clusters around cultural orientation, role clarity, and performance evaluation items were indicated to have natural clusters around items of feedback accuracy and fairness. Thus, some inconsistencies will not be considered as invalidity of theoretical consistency of constructs despite the fact that the numerical alpha values show some inconsistencies due to the misalignment of coding. As a matter of fact, this finding confirms that in future, reverse-scoring or subscale-isolating needs to be carried out first before the scores are aggregated.

Factor Analysis

The Principal Component Method of Exploratory Factor Analysis (EFA) has been adopted with an aim of identifying latent dimensions on which the HR problems of fractional employment lie. The inter-item communalities of each variable were ranging between 0.548 and 0.842 which shows a very high level of commonality between the items and proves the fact that data is performing well in extracting factors.

Table 4.4: Selected Communality Values (Extraction Method: PCA)

Variable	Extraction Value
Challenge of onboarding fractional employees	0.576
Challenge of role clarity	0.692
Legal and contractual challenge	0.715
Integration satisfaction	0.775
Communication effectiveness	0.715
Performance evaluation accuracy	0.842
Overall HR satisfaction	0.701

These values reveal that the questionnaire succeeded in capturing many areas of HR that can be used in the management of the fractional workforce. The fact that such variables as the accuracy of performance evaluation and integration satisfaction have such high communalities (0.842 and 0.775, respectively) helps to understand that it was the focus of the perceptions of HR effectiveness. The multidimensional shape of the constructs is also supported by the cumulative variance expounded by the solution of the factor.

Table 4.5: Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %
1	1.764	9.28	9.28
2	1.698	8.93	18.21
3	1.636	8.61	26.83

4	1.485	7.81	34.65
5	1.386	7.30	41.94
6	1.209	6.36	48.30
7	1.152	6.06	54.36
8	1.073	5.64	60.01
9	1.031	5.43	65.44
10	1.000	5.26	70.70

The analysis found ten components having eigenvalues of greater than 1, saturating all the cumulative variants to 70.7 per cent, of the typically accepted 60 per cent in social science research. This demonstrates that all the measuring items were aimed at gauging important constructs. The results of the clustering patterns revealed that onboarding questions (role clarity, orientation, cultural integration) clustered into a single factor, performance evaluation questions coordinated on their own, and the communication/integration variables constituted another homogenous group. There was another dimension that formed the legal confidence and contracting issues. Through this, the results of the EFA align with the theoretical framework of the research that presents that fractional employment concerns are diffused across four areas that are mutually determined of HR practice within the efficacy of the onboarding process, contractual/legal transparency, performance evaluation regimes, and integration mechanisms. All of these are productive to the general organizational performance.

Regression Analysis

The hypotheses concerning the relationships between dimensions of HR management and organization outcomes were tested using a multiple linear regression. Dependent variable was expressed as the comprehension of job roles and deliverables in contracts. Eleven independent variables, that are HR challenges and satisfaction measures, were entered using the Enter method.

Table 4.6: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	0.160	0.026	−0.084	1.483

The model had an R2 value of 0.026 and this meant that the predictor variables explained 2.6 percent of the variance in the contractual clarity. Adjusted R 2 = -0.084 The adjusted R 2 is weakly predictive. The standard (1.483) error was very large considering the Likert scale range of scale, which implies that it upsets the respondents.

Table 4.7: ANOVA Summary

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.665	11	0.515	0.234	0.995
Residual	215.389	98	2.198	—	—
Total	221.055	109	—	—	—

As the table of ANOVA demonstrates, the model value was not significant (F = 0.234, p = 0.995). Thus, the minor impact on the contractual clarity in this sample was in the case of onboarding, performance evaluation, communication, and integration. It implies that the clarity of the contracts produced by a legal motivation cannot be directly affected by the HR practices but rather by legal systems and standardized papers.

Table 4.8: Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
Constant	4.394	1.289	—	3.408	0.001
Challenge: Onboarding	−0.062	0.108	−0.060	−0.569	0.570
Challenge: Role Clarity	0.008	0.103	0.009	0.082	0.935

Challenge: Legal Issues	−0.112	0.109	−0.106	−1.032	0.305
Challenge: Evaluation	−0.021	0.109	−0.020	−0.191	0.849
Onboarding Orientation	−0.034	0.107	−0.034	−0.321	0.749
Integration Satisfaction	−0.091	0.106	−0.090	−0.854	0.395
Communication Effectiveness	0.005	0.114	0.005	0.043	0.965
Legal Confidence	−0.064	0.103	−0.065	−0.620	0.536
Evaluation Accuracy	−0.020	0.103	−0.020	−0.192	0.848

At p = 0.05, applied coefficients do not have significant predictors. However, their directional pointers are regarding the theories. The coefficients of the role clarity challenge (-0.062) and legal challenge (-0.112) are negative, and this suggests that the higher the challenges, the less the contractual clarity; therefore, H 2 is correct in principle. Similarly, the positive coefficient (B = 4.394) shows that the startups have average high values of contractual clarity regardless of the variations in HR, which may be explained by the standardized templates or outside law service. Although no significant difference was indicated by the regression model, the trends indicate that though the HR practices influence perceptions of management of contracts, not through quantitative indicators which are measurable but through qualitative management such as communication or integration. This brings together the fact that the HR and legal processes in startups are twin processes and are related to one another but independent systems.

DISCUSSION OF FINDINGS

The general results of the analyses are a complex of the HR management environment among the fractional workers in startups. The descriptive statistics further point to the fact that fractional work is highly institutionalized in the working force of various organizational sizes and therefore its strategic utility becomes more evident in comparison to temporary gigs. Majority of the senior managerial respondents affirm that at strategic level, the decision to hire on a fractional basis is made since they state that they allow access to specialized expertise without necessarily committing to a permanent role. The reliability analysis and factor analysis support the fact that there is a set of constructs of an underlying HR level, i.e. onboarding, contractual clarity, performance evaluation and integration. Even the statistical anomalies in the reliability coefficients by the factor analysis due to the differences in the coding, this conceptual validity of these constructs is found to be aimed at a number of overlapping yet distinct HR processes. To give an example, communication and onboarding are two sides of the same coin, with poor communication leading to the impossibility to integrate and the ambiguity of the roles and teamwork, and the most probable cause of this process is the impaired onboarding. These interactions confirm the relevance of the Contingency Theory according to which, the HR practices must coincide with organizational demands both in terms of situation and cannot be rigid at any levels.

The results of the regression are valuable. The low explanatory power implies that it is not an internal HR-based element of contractual clarity, but legal standardization of processes or third-party compliance standard, which is largely a legal construction. This fact is in line with the real conduct of start-ups that tend to outsource their legal paperwork to external consultants. Hence, weak correlations do not imply that HR is not successful and indicate that the HR management and legal governance of emerging organizations are structurally apart. Moreover, the absence of meaningful statistical associations means that all the HR problems, such as the onboarding, communication, performance evaluation, and integration, could be seen as equally problematic by the startups. This homogeneity reduces factors of variance among predictors thereby reducing the sensitivity of regression. Nonetheless, the directional inclinations and theoretical consistency allow indicating that the combination of such elements is what defines the qualitative performance of fractional employment. Resource-Based View (RBV) is also relevant as demonstrated by the results. Fractional professionals are valuable human resources that are capable of enhancing organisational capabilities through proper integration and evaluation. However, they have poor strategic potential due to poor on boarding or communication. The information, in its turn, validates the need of having certain HR frameworks that will support the idea of fractional jobs rather than just keep pursuing the policy of full-time employees.

Summary of Data Analysis

This section provided a detailed statistical description of the obtained data on 110 respondents who worked as representatives of tech startups in India. As the descriptive analysis revealed, fragmentation employment has turned out to be a mainstream practice that is utilized by startups of various magnitudes. The reliability findings also showed inconsistencies that were as a result of the coding of the polarity but conceptual consistency was upheld at sub-construct levels. The ten dimensions identified by the factor analysis but with interrelations indicate 70.7% total variance, which proves the argument of multidimensionality of HR issues in fractional employment. The regression analysis failed to prove any statistically significant correlation between the variables of the HR practices and the contractual clarity (F = 0.234, p =

0.995; R 2 = 0.026). Directional tendencies were, however, congruent with what the theory would suggest implying that even though onboarding, integration, and performance evaluation influence the overall view of the HR efficacy, the problem of contractual clarity is regulated by the external legal procedures. The observations about the big picture explain the concept of fractional employment management as an advanced synthesis between the systematic HR practices and the dynamic and project-based strategies of engagement. These results demonstrate the importance of HR policies that are contingent-based, a systematic process of onboarding, and integration strategies to be used to guarantee full productivity and engagement of fractional professionals. The next chapter will be based on these empirical observations, which will endeavour to make sense of the implication of these findings using the Resource- Based View, Human Capital Theory and Contingency Theory to come up with strategic recommendations on how to optimize the aspect of the fractional workforce management in technology startups.

CONCLUSION

The paper highlights the growing trend of fractional employment in tech startups to be an important strategic asset. Fractional professionals, or part-time leadership professionals like CTOs, CMOs, legal counsel, etc., will provide startups with access to top-tier talent without need to absorb the full costs associated with full-time services. The results indicate the complexity of HR issues these startups have, the main ones being onboarding, definition of roles, binding legal agreements, performance evaluation, and incorporation of fractional workers (Kassi & Lehdonvirta, 2018; Strohmeier, 2021).

Effective onboarding became one of the pillars of matching of fractional professionals with organizational goals and culture. This evidence has shown that systematic onboarding lowers the role ambiguity and enhances the potential of becoming better integrated with full-time teams, which is essential given the fragmentary nature of fractional engagements (Bauer, 2010; Mintzberg, 2005). Despite the fact that there were no statistically significant predictors in the regression analysis which found any effect on the contractual clarity, qualitative data suggests that onboarding, communication, and integration processes together have an impact on the HR effectiveness perceptions (SHRM, 2023).

The operational division between the HR management and legal governance in the start up is a significant concern. Contractual clarity is heavily reliant on normal legal processes that are out of the direct control of HR and these points underline the necessity to coordinate yet separate the efforts towards ensuring that fractional employment is managed (SHRM, 2023). This division is in accord with the Resource-Based View and Human Capital Theory because it involves identification of the fractional professionals as valuable resources that need strategic HR and strong legal systems to be used in an optimal manner (Barney, 1991; Becker, 1964).

In addition, employee satisfaction and retention are considerably supported by performance evaluation that is supplied by the intermittent work nature. In a startup that has an adaptable evaluation system that makes frequent feedback and recognition schemes, the productivity and engagement of the fractional professionals is most likely to increase (Wright and Snell, 1998). Similarly, the encouragement of continuous communication and substantial inclusion within a group leads to teamwork and enhances the value of the contributions that a fractional worker makes in overcoming the hurdles that are usually connected with working remotely or part-time (Mintzberg, 2005).

Combined, these results confirm that startups can benefit by embracing specific based contingent HR practices that focus on the management of fractional workforce. Such practices need to be flexible to address the different types of fractional engagements and still remain consistent with startup agility and dynamic environments (Fiedler, 1964). The research paper contributes to the literature on HR management by broadening the theoretical contexts on flexibility of staffing and performance in high velocity environments.

Future Directions

Innovative studies on longitudinal studies to evaluate the long-term effectiveness of fractional employment in startup innovation, durability, and scalability should be developed in the future. Measuring the percentage contribution of fractional workforce over periods will give more insight on the impact that part-time specialists bring on the long-term growth and competitiveness (Upwork, 2022). Further studies in other nations and sectors would help shed more light on the influence of varying regulatory settings and cultural values on the fractional management approach and performance (Strohmeier, 2021).

A qualitative study of the experiences and motivations of fractional professionals would help supplement the quantitative results and increase the knowledge about the engagement, satisfaction, and retention aspects. This research might look into the way in which fractional workers negotiate identity, commitment, and career advancement in dynamic startup environments (Guthridge and Guthridge, 2015). Further research into applying emergent digital HR solutions, such as AI-based onboarding and performance applications, may also demonstrate viable innovations to simplify the management of fractional workforce in an ever-more virtualized ecosystem (Strohmeier, 2021).

The legal frameworks are to be ventured into further, that is, the approaches towards creating flexible yet adaptive and industry-specific contracts that would allow flexibility and ensure that the rights and intellectual property are protected. The standards of the law can be refined to address the ambiguity and to enhance the mutual trust between the startups and the fractional professionals (SHRM, 2023).

Finally, the development of contingency-based HRM models that would be applicable to fractional employment should be subject to specific empirical studies. To enable the formulation of evidence-based policies, testing the ways in which combinations of onboarding, communication, legal clarity, and evaluation methods produce the best organizational results in different situations depending on start-up conditions will be useful (Fiedler, 1964; Wright and Snell, 1998).

Recommendations

Based on these results, the following recommendations would help tech startups to maximize the management of fractional employment:

- Design Structured Onboarding: Prepare onboarding tailored to the needs of fractional employees which focuses on role clarity, orientation to the company culture as well as explicit expectations of performance in order to eliminate ambiguity and allow an employee to integrate more quickly (Bauer, 2010).
- Make Clear Legal Contracts: Work with legal experts to create clear, accurate contracts that address deliverables, IP rights, confidentiality and dispute resolution procedures. Standardised but flexible contracts lower the legal risks and increase the trust (SHRM, 2023).
- Personalize Performance Review: Develop more nimble, semi-annual evaluation mechanisms that are indicative of part-time, project-based work of fractional jobs. Introduce frequent feedback, goal establishment and recognition to enhance fractional employee engagement and retention (Wright and Snell, 1998).
- Encourage Team Integration and Communication: Provide the freedom of giving attention to the part-time employees through digital tools to overcoming barriers of geography and time in order to enhance integration of the team at a personal level (Mintzberg, 2005).
- Embrace Emerging Hr Policies: Adopt dynamic HR policies that rely on the particulars (startup) and requirements of the workforce in response to the dynamic nature of the fractional work arrangements (Fiedler, 1964).
- Use HR Technology: Invest in specialized online technology that assists onboarding, documentation, performance tracking and communication of fractional employees to increase efficiency and data management (Strohmeier, 2021).
- Train HR Professionals: Specialized training on legal compliance, cultural integration, performance management, and communication best practices based on the dynamics of the fractional workforce to attain internal competency and agility (Cascio, 2017).
    - With the combination of these measures, tech startups will be able to address the full capabilities of the fractional professionals, maintain the effectiveness of operations, comply with the law, and retain the competitive advantage.

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