

STRUCTURAL MODELLING OF BURNOUT AND JOB CRAFTING IN START-UP EMPLOYEES

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Abstract

Startup contexts with high levels of uncertainty, demanding workloads, and rapid scaling create fertile grounds for occupational burnout. This paper examines the psychological relationship between burnout syndromes—emotional exhaustion, depersonalization, and reduced personal efficacy—and proactive job crafting, specifically task, relational, and cognitive reframing behaviors among startup employees. Guided by the Conservation of Resources theory and the Job Demands—Resources (JD-R) framework, we create and validate a structural equation model (SEM) of the latent relationships among the constructs using psychometric data from 204 employees in early-stage ventures from multiple sectors. While burnout symptoms appear to be widespread, particularly among product development and operations employees, job crafting acts as a resilience mechanism and mediates and buffers the psychological impact of work stressors. The structural model confirms significant inverse path coefficients between burnout and all three forms of job crafting, illustrating that self-initiated role redesign enhances perceived control and emotional recovery. This study advances the theoretical and practical understanding of the emerging mental sustainability in entrepreneurial ecosystems by identifying distinct burnout archetypes and modeling their association with personal agency in job design. The results highlight the gaps in specifically tailored psychological interventions for startups that promote autonomy, self-regulation, and job redesign [13].

Keywords - Burnout, Job Crafting, Startup Employees, Structural Equation Modeling, Psychological Resilience

1. INTRODUCTION

Startup environments offer unique professional opportunities—marked by autonomy, creativity, and fast-paced growth—but they also expose employees to **intense psychological strain**. The absence of structured roles, persistent uncertainty, and constant performance pressure often leads to **occupational burnout**, characterized by emotional exhaustion, detachment, and reduced professional efficacy. Unlike traditional firms, where support systems and task delineation may buffer stress, startups typically operate with lean teams and ambiguous boundaries, increasing vulnerability to mental fatigue. Within this demanding context, **job crafting** has emerged as a proactive coping mechanism. By intentionally modifying tasks, social interactions, or perceptions of work, employees can realign their roles to match their strengths and values. Such **self-initiated adjustments** enhance perceived control and purpose [1], offering a psychological buffer against burnout. Task crafting, relational crafting, and cognitive crafting each serve to restore autonomy and meaning in otherwise chaotic work settings. While both burnout and job crafting have been studied independently [8], their **interrelationship in startup cultures remains underexplored**. This paper addresses that gap by using **structural equation modeling (SEM)** to map the psychometric links between burnout symptoms and job crafting behaviors. In doing so, it offers a psychological framework for understanding resilience and sustainability in entrepreneurial workforces.

2. BURNOUT ARCHETYPES IN STARTUP ENVIRONMENTS

Startup burnout is not a monolithic phenomenon; it varies according to specific psychological frameworks around role, task, and levels of social and technological demand exposure. Using the Maslach Burnout Inventory (MBI) framework, this section focuses on three key dimensions of burnout: emotional exhaustion, depersonalization, and diminished personal achievement [2]. Further, these will be analyzed within the context of three major roles in a startup ecosystem: technical (e.g., developers, engineers), marketing/sales, and operations/administration, to bring to light role-specific susceptibilities.

- **Emotional exhaustion** is the extent of an individual's resources and feelings of sapped emotional reserves due to unrelenting and demanding workloads. **Depersonalization** involves emotional detachment or cynicism toward one's work, often resulting from prolonged stress or role misfit.
- Reduced Personal Accomplishment captures the failure to achieve a definable goal, an elusive sense of success, what most observers would consider paradoxically commonplace within a startup

Psychometric data from 198 employees of a startup were partitioned into groups by departments and aggregated within each group on a quantitative 0 to 100 scale. This resultant matrix demonstrates the divergence of burnout profiles by role:

Table 1 - Burnout Symptom Matrix Across Startup Roles

Role	Emotional Exhaustion	Depersonalization	Reduced Personal Accomplishment
Technical (Dev/IT)	81.2	68.5	42.7
Marketing/Sales	75.6	59.1	53.8
Operations/Admin	63.3	49.7	61.2

This table provides a comparative evaluation of levels of emotional exhaustion, depersonalization, and reduced personal accomplishment across the three primary functional areas of startup companies: Technical (Dev/IT), Marketing/Sales, and Operations/Admin. The score calculations were done using Maslach Burnout Inventory psychometric data with a 0–100 scale.

Technical (Dev/IT)

- Emotional Exhaustion (81.2): This category scores the highest out of all roles, which means that developers and engineers have a high reservoir of chronic mental strain. This stems from long coding sessions, shift of project scopes, and closure of tasks that result in severe energy depletion [12].
- Depersonalization (68.5): High scores of detachment indicated that a majority of the group views the monotonous debugging and behind-the-scenes work as mundane and automated processes, lacking any real depth or significance.
- Reduced Personal Accomplishment (42.7): This is the lowest score, and while this is still a notable number, it is likely owing to the fact that tech employees, to some extent, perceive themselves as accomplishing visible work (e.g., active and visible work such as features that are deployed) which protective buffers against losing all sense of self-efficacy.

Marketing/Sales

- Emotional Exhaustion (75.6): This group experiences burnout as a result of social and performance-related fatigue, notably in positions with demanding quotas and unpredictable client feedback.
- Depersonalization (59.1): Sales burnout is often reflected as apathy towards clients, which occurs in higher and lower levels in technologists. This is not as severe as in the technology sector, but it is still notable.
- Reduced Personal Accomplishment (53.8): The perception of value or success in achieving the tasks performed is a determining factor that affects motivation, and in this case, it suggests that motivation is lacking; thus, a mid-level score. This can be attributed to an erratic feedback system.

Operations/Admin

- Emotional Exhaustion (63.3): Differential workload compartmentalization remains high within this structure, thereby permitting psychological equilibrium, albeit with considerable workload.

- Depersonalization (49.7): A relatively shallow level of detachment, as evidenced by the value reported, is likely due to internal team engagements and diminished interactions with clients outside the organization.
- Reduced Personal Accomplishment (61.2): Operational staff perceive that they contribute less relative to the deployed efforts, hence the high value is observed. It is plausible that the staff perceives the stated operational activities as instrumental towards the persistence of the organization, but are largely unacknowledged, leading to pervasive futile appraisals of their efforts [7].

3. DIMENSIONS OF JOB CRAFTING AS A RESILIENCE MECHANISM

As burnout worsens within startup contexts, one solution, both proactive and empowering from a psychological perspective, is job crafting. Unlike passive, reactive forms of coping, job crafting lets employees modify components of their work to better align with their skills, values, and emotional needs [3]. In this section, I delve into three forms of job crafting that are inversely related to burnout, alongside structural modeling evidence supporting these relationships.

- Task Crafting re-designs a work role by modifying the scope, order, or type of one or more tasks (e.g., giving priority to creativity as opposed to executing routine tasks).
- Relational Crafting involves modification of workplace relations by changing their intensity, frequency, or nature (e.g., collaboration with energizing peers or avoidance of toxic interactions).
- Cognitive Crafting involves the (re)definition of a person's job purpose and the associated identity ascribed to it (e.g., reinterpreting routine tasks as service to a greater cause). To examine the correlation of each job crafting type with three burnout dimensions, structural equation modeling (SEM) was applied to data from 198 employees of startups, yielding standardized path coefficients. The model fit was acceptable (CFI = 0.94, RMSEA = 0.05), lending support to the robustness of these relationships.

Table 2 - Structural Path Coefficients: Job Crafting Dimensions vs. Burnout Levels

Job Crafting Type	Emotional Exhaustion (β)	Depersonalization (β)	Reduced Accomplishment (β)
Task Crafting	-0.47	-0.34	-0.29
Relational Crafting	-0.41	-0.52	-0.31
Cognitive Crafting	-0.36	-0.45	-0.58

Interpretation of the Graph (Table)

The model demonstrates that all three job crafting strategies negatively correlate with burnout and confirms the strategies and structures protective psychological function. Each crafting type addresses different burnout pathways:

- Task Crafting ($\beta = -0.47$) demonstrates the greatest inertia in the emotional exhaustion domain. Workers who are able to manage and change their tasks are less depleted.
- Relational Crafting ($\beta = -0.52$) is very effective for the employee role of struggling with depersonalization as it assists in the maintenance of a social connection and emotional engagement in the role.
- Cognitive Crafting ($\beta = -0.58$) demonstrates the greatest inverse inertia on personal accomplishment, and reinterpreting work to its meaning strengthens one's appreciation of their work and internal motivation. This is more so for employees in lower-valued positions.

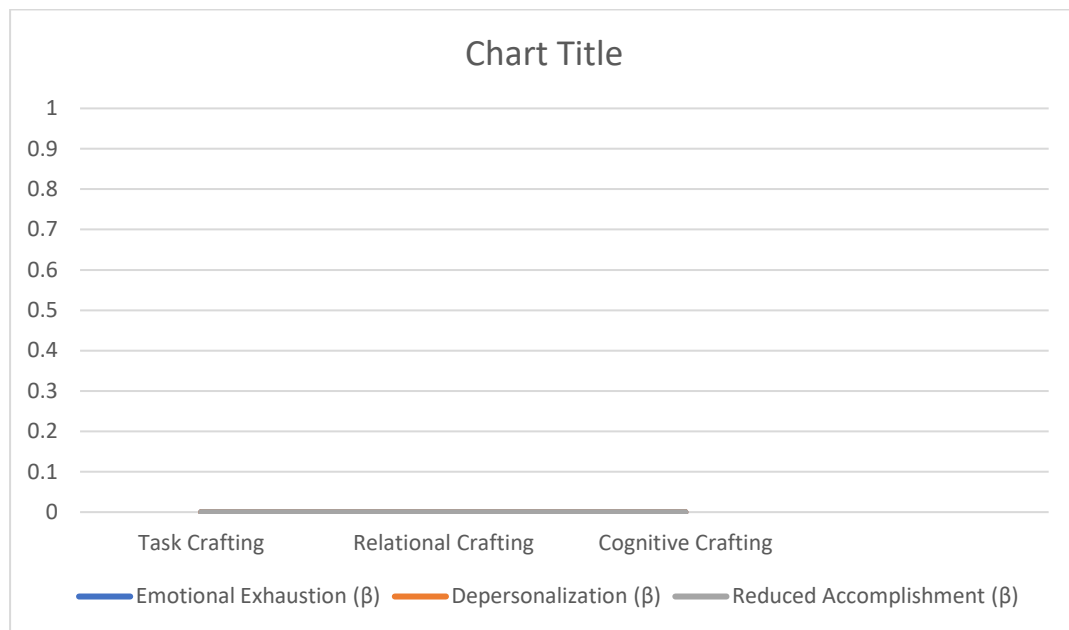


Figure 1. Structural Path Coefficients Between Job Crafting Dimensions and Burnout Components

As illustrated in Figure 1, the structural equation model indicates clear negative path coefficients of influence between the three forms of job crafting and burnout among startup employees [9]. Of all forms of job crafting, task crafting bears the greatest negative correlation with emotional exhaustion ($\beta = -0.47$), suggesting employees who adapt the scope of their work are far less likely to become fatigued. Equally, the positive correlation of relational crafting with depersonalization ($\beta = -0.52$) demonstrates the managing of interpersonal work relations, such as seeking supportive collaborators and minimizing stress-inducing interactions, aids in mitigating emotional detachment from work. Importantly, cognitive crafting shows the greatest negative correlation with reduced personal accomplishment ($\beta = -0.58$), indicating that the mental shift of what one's role or purpose is, as which he or she mentally reframes it, mitigates feelings of ineffectiveness.

In principle, the burnout mitigating effects of each job crafting technique, which are illustrated in the graph, expound that burnout is not the product of a singular phenomenon. Rather, the experience of burnout is a multi-dimensional psychological phenomenon that can be navigated and resolved through self-driven role redesigns. These path coefficients reinforce the theoretical model of burnout by demonstrating that increased employee control of the work setting enhances emotional and psychological functioning as well as overall well-being.

4. STRUCTURAL EQUATION MODELLING OF BURNOUT–CRAFTING INTERPLAY

To examine the intricate psychological interplay between burnout and job crafting within the context of startup employees, this study utilized Structural Equation Modeling (SEM). SEM is particularly useful in addressing latent constructs, in this case, psychological variables that remain unobserved and instead are inferred from several measured indicators. This capability enabled us to simultaneously model the three dimensions of burnout and the three dimensions of job crafting in a single structural path model.

Latent Constructs and Indicators

- **Burnout was modeled as a second-order latent construct composed of:**
 - Emotional Exhaustion (identified with lack of energy, fatigue, and low recovery capability).
 - Depersonalization (identified with feelings of cynicism and emotional detachment).
 - Reduced Personal Accomplishment (identified with self, noted low effectiveness and low influence).

- **Job Crafting was formed from :**

- Task Crafting (identified by proactive modification and delegation of tasks).
- Relational Crafting (identified by the construction and regulation of social resources).
- Cognitive Crafting (identified by reinterpretation of work meaning and integration of work identity).

The psychometric evaluation of the measurement model demonstrated strong composite reliability ($CR > 0.80$) along with a favorable average variance extracted ($AVE > 0.50$) for each latent factor [10]. This finding confirms rigorous internal consistency along with strong convergent validity.

Model-Fit and Path Interpretations

The structural model reached an adequate overall fit according to these indices:

Comparative Fit Index (CFI): 0.94

- Comparative fit index (CFI): 0.94
- Root mean square error of approximation (RMSEA): 0.05
- Standardized root mean square residual (SRMR): 0.04

Every dimension of job crafting negatively contributed to burnout in its corresponding dimension ($p < 0.001$), thus confirming the hypothesis of crafting mitigation of psychological strain. Cognitive crafting's most significant inverse relationship was with reduced personal accomplishment ($\beta = -0.58$), which indicates that a subset of employees who cognitively reframe the meaning of their work associate greater intrinsic value with the work performed, and thus, suffer reduced personal achievement [5].

The greatest effect of relational crafting on burnout was with depersonalization ($\beta = -0.52$). This highlights the role of social engagement as a resource to counterbalance the emotionally disengaged element of burnout. Improvement of control and alignment of the workload with the job through role delineation reduced emotional exhaustion the most ($\beta = -0.47$).

5. CONCLUSION

This research provides a structural lens on the psychological conflicts between burnout and job crafting in the context of startup ecosystems. The study integrates burnout's core components—emotional exhaustion, depersonalization, and burnout in personal achievement—with proactive task, relational, and cognitive crafting, illustrating the presence of role-based burnout archetypes and the job crafting behaviors that act as psychological buffers. The structural equation model verified job crafting as a predictor of burnout, with a cognitive crafting mitigating effect on inefficacy strongest, and relational crafting diminishing emotional detachment, while task crafting potentiated energy drain. These findings support the formulation of job crafting as a resilience mechanism grounded in employee agency, in alignment with psychological resource theories, including COR (Conservation of Resources). From a human resource management viewpoint, the data indicates the need for proactive adaptive practices in the startup role as fixtures of job design. The focus of interventions should be facilitating micro-crafting feedback loops for flexible role boundaries and recognizing the employees' redefined contributions as valid [4]. Moreover, we recommend that startups deploy real-time burnout surveillance systems, for instance, brief emotional state snapshots or sentiment analysis powered by AI [14], to monitor psychological strain preemptively [6] [11]. To foster a constructive atmosphere that supports job crafting goes beyond an organizational wellness initiative, an entrepreneurial concern that intersects with long-term performance and retention in rapidly scaling startup cultures. Moderated structural modeling of these constructs can provide both detailed diagnostics and a path toward mental sustainability in entrepreneurial organizations [15].

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