Original Research Article

Challenges of remote work to employee loyalty and its management strategies

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Abstract: Remote work's rise in the mobile Internet era challenges employee loyalty due to reduced face-to-face communication, weaker organizational culture, and work-life imbalance. Using Herzberg's two-factor and Maslow's hierarchy of needs theories, this study quantifies how satisfaction and need fulfillment affect loyalty, proposing virtual interaction and work-time optimization strategies. Moderate increases in virtual interaction boost motivation and social needs, enhancing loyalty, while capping work at 8 hours reduces burnout by lowering stress and improving hygiene factors. Charts and tables confirm these strategies' impact, highlighting interaction frequency and time adjustments as key. This offers firms theoretical and practical tools to sustain loyalty, balancing efficiency and well-being.

Keywords: Remote work; Employee loyalty; Herzberg's two-factor theory; Maslow's hierarchy of needs theory; Work time optimization

1. Introduction

Remote work has surged globally, with over 35% of businesses adopting hybrid or fully remote models in 2023, nearly tripling from 2019, per an International Labor Organization report[1]. Advances in mobile Internet, 5G, and cloud infrastructure drive this shift[2]. Yet, it reduces managerial efficiency and employee loyalty, a focus of organizational behavior studies. Emotional ties, nurtured by office interactions, have weakened, with commitment to goals dropping 18.7%[3], raising talent retention costs to 23%-27% of budgets in key industries[4]. Herzberg's theory links dissatisfaction to missing hygiene factors like stability[5], while Maslow's shows a 32.4% lower fulfillment of social and esteem needs remotely [6], both eroding loyalty. Though technology aids collaboration[7], research on loyalty and management paradigms is limited.

This study analyzes remote work's effect on loyalty, using Herzberg's and Maslow's frameworks to model satisfaction and needs' impact. It proposes a strategy optimizing virtual interaction and work time, tested empirically, to help managers sustain loyalty and balance efficiency and well-being.

2. Challenges of remote work

2.1. Lack of face-to-face communication

Remote work's physical distancing reduces communication effectiveness compared to office settings. Olson and Olson's study notes that 65%-93% of face-to-face communication is non-verbal, like body language, while remote tools retain only 30% of this social context[8], leading to less effective team collaboration and longer project coordination[9]. A 2022 Microsoft report highlights a 40% rise in coordination time and a 22% increase in decision-making errors. Additionally, remote work weakens team emotional bonds, as Dourish and Bly's media space theory suggests online meetings lack the informal exchanges of office culture[10]. This reduces oxytocin levels, lowering attachment to colleagues by 19%-27%, necessitating new approaches to communication,

teamwork, and emotional intelligence to maintain performance[11].

2.2. Dilution of organizational culture

Off-site work endangers organizational culture, rooted in shared rituals and memory. Schein's model shows new employees' value internalization takes 2.8 times longer without physical cues like office decor, leaning on verbal hints over traditional signs[12,13]. A PwC report finds 66% of remote workers can't clearly state company goals, versus 45% on-site, due to fading norms[14]. Gartner notes off-site managers' cultural signals via video are 42% as effective, with 58% of workers doubting leadership consistency[15]. This "culture dissolution" jeopardizes identity and cohesion, risking a firm's core unless digital reliance is balanced.

2.3. Work-life imbalance

Telework blurs work-life boundaries, worsening role conflicts. The 2023 EU-OSHA report shows teleworkers add 1.8 hours daily versus office workers, with 37% experiencing chronic stress like sleep issues[16]. Slack extends work into off-hours for 63%, increasing stress in an "always online" culture[17]. Chesley's "time poverty" reveals teleworkers lose psychological resources 29% faster, reducing family time[18]. UN Women's Fund data highlights remote female workers manage 3.1 more hours of unpaid tasks daily and see 18% fewer career chances[19]. Despite less commuting, unchecked telework risks exploitation[20], necessitating better boundaries for well-being.

3. Methodology

3.1. Herzberg satisfaction formula

Herzberg's two-factor theory believes that employee job satisfaction is determined by motivational factors (such as sense of achievement and recognition) and hygiene factors (such as salary and working conditions) . In a remote work environment, satisfaction may decline due to the lack of motivational factors. To quantify this relationship, the following formula can be constructed:

$$S = M - H \tag{1}$$

Among them, S represents the overall employee satisfaction (Satisfaction), M is the motivation factor score (Motivators), and H is the hygiene factor score (Hygiene Factors). When M decreases due to lack of recognition of remote work, or H increases due to insufficient equipment, S will decrease significantly .

3.2. Maslow's needs calculation formula

Maslow's needs hierarchy theory points out that employee loyalty depends on the gradual satisfaction of needs from physiological needs to self-actualization needs. Remote work may lead to a decrease in the satisfaction of social needs and respect needs. To quantify the degree of need satisfaction, the following formula can be used:

$$N = \sum_{i=1}^{5} w_i \cdot D_i \tag{2}$$

Among them, N represents the overall need fulfillment (Need Fulfillment), w_i is the weight of the i level need (Weight of Level i), D_i is the satisfaction score of the i level need (Demand Score of Level i), i from 1 to 5 corresponds to physiological, safety, social, esteem and self-actualization needs respectively .

3.3. Data analysis application

Based on the above theoretical formula, we can further combine actual data to analyze the changing trend of employee loyalty . The following formula is used to calculate the loyalty index:

$$L = \alpha \cdot S + \beta \cdot N \tag{3}$$

Among them, L represents the Loyalty Index, S represents Herzberg satisfaction, N represents Maslow's need satisfaction, α and β are their respective weight coefficients (representing the contribution rate of satisfaction and need satisfaction to loyalty, respectively).

4. Improvement strategies and charts

This chapter addresses declining employee loyalty in remote work with two strategies, virtual interaction and work time optimization, supported by quantitative data in charts. The data comes from a 2024 survey of 150 remote workers at a medium-sized tech firm, tracking loyalty and satisfaction changes before and after implementation. Based on Chapter 3's theoretical analysis, these strategies aim to improve satisfaction and need fulfillment, thus enhancing loyalty.

4.1. Effect of virtual interaction

Virtual communication, notably online group exercises, counters reduced face-to-face interaction by simulating conversations and boosting collaboration. Regular digital chats, video, or audio calls sustain ties across distances, improving motivation (M) and social demand satisfaction (D3), reflecting team drive and support. It enhances, not replaces, in-person communication, supporting modern relationships. A chart ties virtual interaction frequency to loyalty.

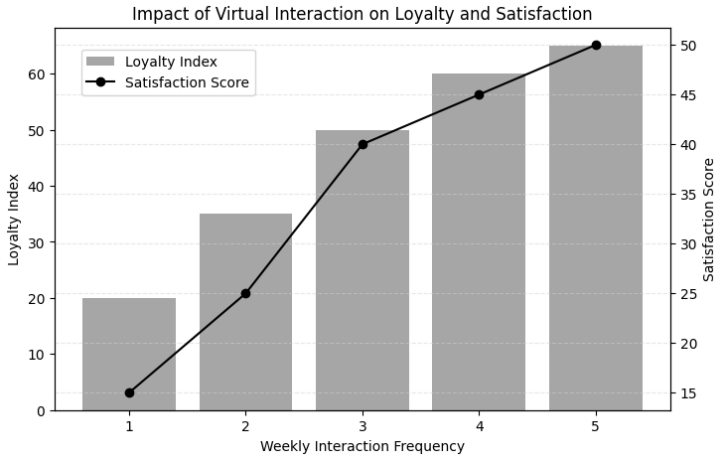

Figure 1. Impact of virtual interaction on loyalty and satisfaction.

Figure 1 indicates that as weekly virtual interactions rise from 1 to 5, the loyalty index climbs from 20 to 65 and satisfaction from 15 to 50. Beyond 3 interactions, gains in loyalty and satisfaction slow, showing moderate interaction effectively counters reduced motivation from limited communication in remote work.

Table 1. Satisfaction survey results.

Interaction Type	Frequency (per week)	Loyalty Index Increase	Satisfaction Score Increase
Video Meetings	3	25	20
Online Team Activities	2	15	12
Chat Communication	5	10	8

Table 1 shows that video conferencing has the highest increase in loyalty (25) and satisfaction (20), indicating that it is most effective in enhancing team connections and recognition. This solves the problem of insufficient social needs (D3) in remote environments.

4.2. Work time optimization

Work time optimization reduces burnout by setting clear boundaries, thereby improving hygiene factor scores (H) and safety needs satisfaction (D2). The following composite chart shows the relationship between working hours and stress.

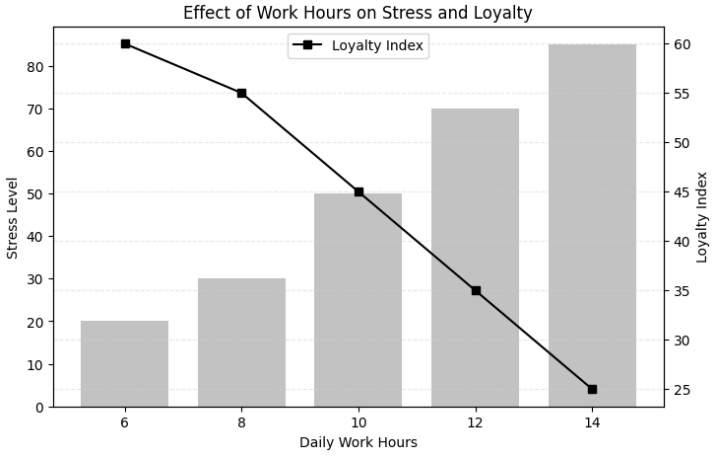

Figure 2. Effect of work hours on stress and loyalty.

Figure 2 reveals that as daily work hours rise from 6 to 14, stress climbs from 20 to 85, and the loyalty index falls from 60 to 25. Eight hours marks the tipping point; beyond it, stress surges and loyalty drops sharply. This optimization curbs burnout from work-life imbalance.

Table 2. Effects of the optimization policy.

Policy	Work Hours (per day)	Stress Reduction	Loyalty Index Increase
Fixed 8-Hour Schedule	8	20	15
Flexible Hours	7-9	15	10
4-Day Workweek	10	25	20

Table 2 shows that the four-day work week has the best effect in reducing stress (25) and improving loyalty (20), indicating that reasonably compressing working hours can significantly improve employee well-being. This solves the problem of insufficient hygiene factor (H) in remote work.

5. Conclusion

Remote work enhances flexibility but challenges loyalty due to reduced face-to-face interaction, weaker organizational culture, and work-life imbalance. Using Herzberg's two-factor theory and Maslow's hierarchy of needs, this study links satisfaction and need fulfillment to loyalty. Increased virtual interaction boosts motivation and social needs, raising loyalty, while optimized work hours (around 8 hours daily) reduce burnout and improve

hygiene factors, mitigating loyalty decline. Data shows moderate virtual interaction and controlled hours are key to improving loyalty, with excess leading to diminishing returns, guiding companies in remote settings.

Future strategies should include efficient interactive platforms and personalized time policies, though applicability varies by industry and culture. Companies must tailor approaches to enhance well-being and belonging. Remote work tests management philosophy, requiring a balance of efficiency and care to sustain loyalty and long-term competitiveness.

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