

Assessing Effort-Reward Imbalance as an Explanatory Mechanism in the Association between Work-Family Conflict and Counterproductive Work Behaviors

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ABSTRACT

Background: Workplace deviance among employees is rising. Employers want to know what causes workplace deviance to help reduce counterproductive behaviors. This study examines how work-family conflict, family-work conflict, and workplace deviance relate to one another, and whether effort-reward imbalance mediates these relationships. Reward Imbalance Questionnaire (ERIQ), the Work-Family Conflict and Family-Work Conflict Scale (WFC-FWCS), and the Interpersonal and Organizational Deviance Scale. The study adopted a cross-sectional design. Three hypotheses were tested using mediated hierarchical multiple regression.

Results: Work-family conflict and family-work conflict each significantly predicted workplace deviance. Effort-reward imbalance also significantly predicted workplace deviance. Furthermore, effort-reward imbalance **partially mediated** the relationships between work-family conflict and workplace deviance, and between family-work conflict and workplace deviance (indirect effects: $\beta = .04$, $CI = .02-.06$; and $\beta = .05$, $CI = .03-.07$, respectively).

Conclusions: Effort-reward imbalance partially explains the link between work-family conflict and deviant workplace behaviors. Training initiatives and job flexibility are suggested as likely interventions to reduce workplace deviance. Future studies should explore additional stress models and employ longitudinal approaches.

Keywords: Effort-Reward Imbalance, Work-Family Conflict, Family-Work Conflict, Workplace Deviant Behavior

INTRODUCTION

Work-family conflict occurs when work and family roles interfere with each other. Greenhaus and Beutell (1985) described it as a form of inter-role conflict where pressures from work and family are incompatible. It has two directions: work interfering with family (WFC), and family interfering with work (FWC) (Frone, Yardley, & Markel, 1997). Initially seen as one-dimensional (e.g., Greenhaus, Bedian, & Mossholder, 1987), later studies suggested a two-dimensional view (Gutek, Searle, & Klepa, 1991). Gutek et al. (1991) distinguished WFC (work interfering with family life) and FWC (family interfering with work). The work and family domains have flexible boundaries, whereas family boundaries are generally more permeable (Frone, Russell, & Cooper, 1992).

Greenhaus and Beutell (1985) identified time-based, behavior-based, and strain-based work-family conflict. Strain-based conflict arises when demands from one role hinder performance in another through strain, such as tension or fatigue (Greenhaus & Beutell, 1985; Edwards & Rothbard, 2000). Time-based conflict involves limited resources such as time and energy; examples include long work hours and childcare (Greenhaus & Beutell, 1985; Kinnunen & Mauno, 1998; Hill, 2005). Behavior-based conflict occurs when incompatible behaviors are expected in different roles. These conflicts increase parents' stress, lowering well-being and job satisfaction (Allen et al., 2000).

One consequence of work-family conflict is deviant workplace behavior (DWB). Deviant behaviors are increasingly problematic in many organizations (Mawritz et al., 2012). Such behaviors include bullying, theft, damage to organizational property, or destruction of essential documents (Fagbohunge et al., 2012). Spector et al. (2006) categorized counterproductive work behaviors (CWBs) into five categories: abuse, sabotage, production deviance, theft, and withdrawal behaviors. Some employees use production deviance as a strategy to manage stressors and negative emotional reactions (Krischer et al., 2010). Job insecurity has also been linked to CWB (Bultena, 1998). Hoobler and Hu (2013) found that abused subordinates experienced increased work-to-family conflict.

This study adopts Siegrist's (1996) Effort-Reward Imbalance (ERI) Model, which focuses on psychological processes and emotional reactions associated with work environments. The model asserts that workers expend effort at work and expect rewards as part of a socially organized exchange process. Strain results when an imbalance occurs within effort and reward (e.g., high job stress with low pay or threatened job status). ERI further differentiates between extrinsic efforts (in response to job demands) and intrinsic efforts (due to personal coping patterns, termed over-commitment). Rewards are distributed via three transmitter systems: money (adequate salary), esteem (respect and support), and security/career opportunities (promotion prospects, job security). A lack of reciprocity between costs and benefits may lead to emotional distress and burnout.

Statement of Problem

Policymakers in Nigeria often show insensitivity to the effects of fiscal policies on workers. Our culture frowns upon many survival practices, yet an individual's salary may not sustain his/her family for two weeks. Work-related stress remains constant while income remains inadequate, driving employees to reframe their value systems and take recourse measures that favor them. Research on work stress and work-family conflict in Nigeria is limited, particularly regarding effort-reward imbalance. The extent to which Nigerian workers experience WFC and FWC in relation to workplace deviance is undetermined. Previous studies have not sufficiently considered ERI's mediating role in the African context, especially in Nigeria. This study intends to fill that gap.

Research Questions

1. Will effort-reward imbalance significantly predict workplace deviance?
2. Will work-family conflict significantly predict workplace deviance?
3. Will family-work conflict significantly predict workplace deviance?
4. Will effort-reward imbalance significantly mediate the relationship between work-family conflict/family-work conflict and workplace deviance?

Purpose of the Study

The purpose of this study is to investigate the mediating role of effort-reward imbalance in the relationship between work-family conflict, family-work conflict, and workplace deviance among married employees in Nigeria.

Empirical Review

Work-Family Conflict, Family-Work Conflict, and Workplace Deviance

Although many men and women adhere to egalitarian values, societal norms frequently dictate that men invest more in the work domain and women in the family domain (Van der Lippe, 1994; Treas & Drobic, 2010; Hagqvist, 2016). Sullivan and Lewis (2001) argued that women who work from home can better fulfill domestic tasks, but this comes at the expense of greater work-family conflict (Hilbrecht et al., 2008).

Lui, Chang, Shi, Zhou, and Shao (2015) examined afternoon emotional exhaustion as a link between morning work-family conflict and aggression in work and family domains. Multilevel modeling showed that family-to-work conflict was positively related to afternoon emotional exhaustion, resulting in displaced aggression towards

supervisors and coworkers in the afternoon, and towards family members in the evening. Perceived managerial family support reduced the impact of family-to-work conflict on afternoon emotional exhaustion.

Sarwar, Irshad, Sarwar, and Pasha (2010) investigated the relationship between social undermining in families and nurses' deviant workplace behaviors, finding that negative emotions mediated this relationship, while neuroticism moderated the link between family undermining and negative emotions.

Selvarajan, Singh, Cloringer, and Misra (2019) found that work-family conflict was directly related to counterproductive work behaviors and indirectly related through negative affect, with regulatory prevention focus moderating the relationship.

Shu-chen (2016) studied multi-foci workplace aggression and employees' work-family conflict, finding that problem-focused coping moderated the relationship between supervisor/coworker aggression and negative affect, and that workplace aggression spilled over into the family domain.

Marcado and Dilchert (2017) found that family interference with work was associated with higher counterproductive behaviors and lower organizational citizenship behaviors.

Chang, Zhou, Wang, and Heredero (2017) found that perceived work-family balance practices reduced work-family conflict, while challenge and hindrance stresses were positively related to work-family conflict and moderated the relationship.

Effort-Reward Imbalance and Workplace Deviance

Ume (2017) reported that work-family conflict had a significant positive effect on both burnout and workplace deviant behaviors among bank employees. Malisetty and Kumari (2016) found that organizational justice dimensions were associated with stress and work-family conflict, with work-family conflict partially mediating the relationship. Wu and Cao (2015) found that emotional exhaustion mediated the relationship between hostile supervision and work-family conflict.

Saka, Lawal, and Odunjo-Saka (2018) found that locus of control and effort-reward imbalance predicted unethical work behavior among Nigerian Federal Road Safety Corps members. Baka (2019) argued that CWB is a behavioral response to job stress, moderated by personality traits and job control.

Yang et al. (2018) found that high job stress and effort-reward imbalance were associated with insomnia, and work-family conflict was also associated with insomnia. Dettmers and Biemett (2018) found that perceived illegitimacy of extended availability was positively associated with strain.

Medisaukaite and Kamau (2019) found that occupational distress and job factors increased doctors' odds of substance use, sleep problems, and ill-health symptoms. Siegrist and Li (2016) supported the usefulness of combining extrinsic and intrinsic components in work stress models. Nigatu and Wang (2018) found independent relationships between high effort-reward imbalance, high work-to-family conflict, and major depression.

Silva and Ranasingh (2017) found that job stress strongly influenced deviant workplace behavior, with work overload and role conflict as significant dimensions. Raza, Hussain, Azeem, Ansari, and Aziz (2017) found significant relationships between workload, work stress, role conflict, and workplace deviant behavior, with role conflict as the primary factor.

Hypotheses

1. Effort-reward imbalance will significantly predict workplace deviance.
2. Work-family conflict will significantly predict workplace deviance.
3. Family-work conflict will significantly predict workplace deviance.
4. Effort-reward imbalance will significantly mediate the relationship between work-family conflict, family-work conflict, and workplace deviance.

METHOD

Participants

One hundred and seventy-one (171) employees participated in the study. Participants were drawn from Imo State, Nigeria. Of the total sample, 65 (38.0%) were men and 106 (62.0%) were women. Their ages ranged from 25 to 60 years, with a mean age of 25.76 years ($SD = 6.31$). (Note: Please verify the mean age; 25.76 seems low for a range extending to 60.) The majority of participants were married ($n = 142$, 83.0%), while 29 (17.0%) were single. Educational qualifications: First School Leaving Certificate, $n = 7$ (4.1%); Senior School Certificate, $n = 8$ (4.7%); First Degree, $n = 146$ (85.4%); Postgraduate degree, $n = 10$ (5.8%). Full-time staff numbered 72 (42.1%), while part-time staff numbered 99 (57.9%).

Instruments

Interpersonal and Organizational Deviance Scale (Bennett & Robinson, 2000). This 19-item scale measures behaviors that violate important organizational norms. It consists of two subscales: interpersonal deviance and organizational deviance. Responses are on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The original study authors reported Cronbach's α of .81 for organizational deviance and .78 for interpersonal deviance. A pilot study with 50 civil servants in Abia State yielded $\alpha = .90$ for organizational deviance and .82 for interpersonal deviance.

Effort-Reward Imbalance Questionnaire (Siegrist, Li, & Montano, 2019). This 16-item inventory assesses perceptions of occupational stress across three subscales: effort, reward, and over-commitment. Siegrist et al. (2009) reported Cronbach's α of .74 for effort, .79 for reward, and .79 for over-commitment.

Work-Family Conflict and Family-Work Conflict Scale (Netemeyer, Boles, & McMurrian, 1996). This 10-item inventory measures both directions of conflict. Responses are on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The first authors reported $\alpha = .82$ for WFC and $\alpha = .90$ for FWC. A pilot study with 50 civil servants in Abia State yielded $\alpha = .86$ for WFC and $\alpha = .83$ for FWC.

Procedure

In January 2021, an invitation email was sent to the Imo State Civil Service Commission seeking permission to conduct the study. Approval was granted. A purposive sampling technique was employed. The email included a survey link and assured participants of confidentiality.

The survey remained open for three months, and data were collected online via Google Forms. A total of 250 participants were anticipated; 171 complete and usable responses were obtained (68.4% response rate).

Design and Statistics

A cross-sectional design was used. Data were analyzed using SPSS version 20. Descriptive statistics, correlations, hierarchical multiple regression, and PROCESS macro (Hayes) for mediation were employed. Workplace deviance was the dependent variable.

Control variables (gender, age, marital status, job status, employment type, and education) were entered in Step 1, followed by work-family conflict (Step 2), family-work conflict (Step 3), over-commitment (Step 4), and effort-reward imbalance (Step 5).

RESULTS

Table 1: Descriptive Statistics and Correlations among Study Variables ($N = 171$)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
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1. Gender	-	-	-									
2. Age	25.76	6.31	-.19**	-								
3. Marital status	-	-	.13	-.46**	-							
4. Job status	-	-	.10	-.44**	.27**	-						
5. Employment type	-	-	-.17*	.43**	-.21**	-.37**	-					
6. Education	-	-	.06	-.03	-.00	.07	-.06	-				
7. Work-family conflict	14.86	4.64	.14*	.10	-.03	-.19*	.10	-.05	-			
8. Family-work conflict	16.00	4.32	.01	.17*	-.10	-.27**	.14	-.10	.73**	-		
9. Effort-reward imbalance	27.85	4.75	.05	.21**	-.03	-.14	.25**	-.13	.48**	.55**	-	
10. Workplace deviance	69.81	14.40	.02	.29**	-.20**	-.22**	-.22**	-.10	.30**	.39**	.50**	-

*Note: N = 171. *p < .05 (2-tailed), *p < .01 (2-tailed). Gender: 0 = male, 1 = female; Marital status: 1 = single, 2 = married, 3 = divorced/separated; Job status: 1 = senior, 2 = junior; Employment type: 1 = full-time, 2 = part-time; Education: 1 = FLSC, 2 = WASSCE, 3 = First Degree, 4 = Postgraduate.

Age, marital status, job status, employment type, WFC, FWC, and ERI were significantly correlated with workplace deviance (p < .01). Gender and education were not significantly correlated with workplace deviance.

Table 2: Hierarchical Multiple Regression of Predictors of Workplace Deviance (N = 171)

Variables	Step 1 β	Step 2 β	Step 3 β	Step 4 β	Step 5 β
Gender	.11	.09	.08	.07	.05
Age	.25	.22	.20	.19	.14
Marital status	-.15	-.13	-.11	-.10	-.08
Job status	.00	.02	.03	.04	.02
Employment type	.06	.05	.04	.03	.01
Education qualification	-.11	-.09	-.09	-.08	-.07
Work-family conflict (WFC)		.36	.21	.18	.13
Family-work conflict (FWC)			.26*	.20	.14
Over-commitment				.21	.11
Effort-reward imbalance (ERI)					.37
R²	.16	.28	.31	.33	.40
ΔR^2	.11	.12**	.03*	.02	.07**
F	3.68**	6.64**	6.61**	6.43**	7.82**

*Note: *p < .05, *p < .01. All β are standardised coefficients from the step at which they were entered.

- Step 2: WFC significantly predicted workplace deviance ($\beta = .36, p < .01$).
- Step 3: FWC significantly predicted workplace deviance ($\beta = .26, p < .05$).
- Step 5: ERI significantly predicted workplace deviance ($\beta = .37, p < .01$), accounting for unique variance ($\Delta R^2 = .07$).

Table 3: Mediation Analysis Results (PROCESS Macro)

Path / Effect	β (SE)	t	p	95% CI (LLCI, ULCI)
WFC → Workplace Deviance (Total effect)	.88 (.22)	4.02	<.01	-
WFC → Workplace Deviance (Direct effect, with ERI)	.22 (.22)	1.00	>.31	-.21, .67
WFC → ERI → Workplace Deviance (Indirect effect)	.65	-	-	.38, .97
Partially standardized indirect effect	.04	-	-	.02, .06
FWC → Workplace Deviance (Total effect)	1.24 (.23)	5.32	<.01	-
FWC → Workplace Deviance (Direct effect, with ERI)	.43 (.25)	1.69	<.05	-.07, .93
FWC → ERI → Workplace Deviance (Indirect effect)	.80	-	-	.51, 1.13
Partially standardized indirect effect	.05	-	-	.03, .07

Note: CI = Confidence Interval; LLCI = Lower Level CI; ULCI = Upper Level CI. An indirect effect is significant if the CI does not cross zero.

The results in Table 3 indicate that WFC significantly predicted workplace deviance ($\beta = .88, p < .01$). The direct effect of WFC became non-significant when ERI was added, while the indirect effect (WFC → ERI → deviance) was significant ($\beta = .04, CI = .02-.06$), indicating **partial mediation**. Similarly, FWC significantly predicted workplace deviance ($\beta = 1.24, p < .001$), and the indirect effect through ERI was significant ($\beta = .05, CI = .03-.07$). Thus, Hypothesis 4 is supported.

DISCUSSION

This study examined the relationships between work-family conflict, family-work conflict, and workplace deviance, and the mediating role of effort-reward imbalance. All hypotheses were supported.

Hypothesis 1 (ERI predicts workplace deviance) was supported. Employees who perceived an imbalance between effort and reward engaged in more deviant behaviors. This is consistent with Adeoti et al. (2017) and Saka et al. (2018), who found similar associations.

Hypotheses 2a and 2b (WFC and FWC predict workplace deviance) were supported. The results are consistent with Ume (2017), Chen et al. (2020), and Zahoor et al. (2019). Under stress, individuals may show interpersonal or corporate deviance, especially when experiencing organizational politics (Bashir et al., 2019) or workplace bullying (Yen-Chen et al., 2016).

Hypothesis 3 (ERI mediates the relationships) was supported. The significant indirect effects indicate that work-family conflict and family-work conflict lead to deviant behaviors, partly by heightening perceptions of effort-reward imbalance. Employees who experience high inter-role conflict may feel they are exerting extra effort without commensurate rewards, which can trigger deviance. This finding is consistent with Shaioob and Burach (2019), Kong, Ho, and Sargam (2020), and De Clercq et al. (2019).

Conceptual Implications

This study improves the literature by applying Siegrist's (1996) Effort-Reward Imbalance theory to explain how work-family conflict affects deviant behavior. While previous studies have used Conservation of Resources (COR) theory, role conflict theory, or spillover models, this study shows that ERI provides a complementary explanatory mechanism. The findings broaden understanding of the indirect channels linking WFC and FWC to DWB.

Managerial Implications

Organizations may reduce workplace deviance by:

1. **Addressing effort-reward imbalance:** Ensure salaries are competitive, provide regular, respectful feedback, and create clear promotion pathways.
2. **Reducing work-family conflict:** Implement flexible work schedules, telecommuting options, and employee assistance programs (EAPs) that offer dependent care resources.
3. **Training initiatives:** Train managers to recognize signs of work-family conflict and respond supportively, reducing the strain that leads to deviance.

Limitations and Future Directions

This study has several limitations. First, the cross-sectional design prevents causal inference. Subsequent research should employ longitudinal or experience sampling methods. Second, the sample was limited to employees in Imo State, which may limit generalisability to other regions or sectors. Third, the mean age (25.76) appears inconsistent with the 25–60-year range; this should be verified. Fourth, self-report data may be subject to common method bias; future studies should incorporate supervisor ratings or objective measures of deviance. Finally, future studies should investigate multiple stress models and examine workplace deviance sub-scales separately (e.g., interpersonal vs. organizational deviance), rather than total deviance.

CONCLUSION

This study investigated the mediating role of effort-reward imbalance in the relationships between work-family conflict, family-work conflict, and workplace deviance among 171 employees in Imo State, Nigeria. The evidence confirms that WFC, FWC, and ERI each significantly predict workplace deviance. Importantly, ERI partially mediates both relationships, indicating that perceived imbalance within effort and reward is a key mechanism through which inter-role conflict translates into deviant behavior. Organizations should implement interventions such as fair reward systems, flexible work arrangements, and training programs to reduce these effects. Future research should explore additional stress models and conduct long-term studies to demonstrate causality.

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