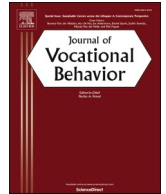




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Taking rivalries home: Workplace rivalry and work-to-family conflict

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ABSTRACT

The purpose of the current study was to examine how workplace rivalry relates to work-family and wellbeing outcomes. Specifically, informed by resource theory, the relationship of workplace rivalry to work-family conflict was analyzed using a three-timepoint survey of 406 participants (165 with rivals); additionally, the role of psychological detachment as a mediator was tested as were the moderating effects of rivalry intensity and relative standing to one's rival (i.e., perceptions of winning or losing). Results support having a rival is related to greater work-to-family conflict and that the relationship is mediated through psychological detachment. Further, the three-way interaction of rivalry status, rivalry intensity, and relative standing to one's rival was significantly related to both work-to-family conflict and psychological detachment. Notably, the interactions indicated those with intense rivalries they perceived they were losing were particularly vulnerable to undesirable outcomes. Results extend workplace rivalry research and inform on the boundary conditions under which rivalry has negative implications for employee and family wellbeing.

1. Introduction

Workplace rivalry has been defined as a relationship in which subjective competitions and social comparisons with a particular person are of psychological importance to the focal actor (Kilduff, 2014). While the construct has only recently received attention within the vocational psychology literature, interpersonal rivalry has long captured public attention. In an exemplar example, the rivalry between political opponents Alexander Hamilton and Aaron Burr over career success occurred in the late 1700s (Chernow, 2016), garnering public interest both then via news reports as well as now in its retelling in the Broadway musical, 'Hamilton.' Despite the longstanding interest in rivalry relationships, research has primarily focused on rivalry as a predictor of work-related outcomes such as performance, motivation, and unethical behavior (Kilduff, 2014; Kilduff & Galinsky, 2016; To et al., 2018). While these studies have provided valuable information, the possibility rivalry relationships pose threats to employee wellbeing merits investigation.

One wellbeing-related variable of theoretical relevance as an outcome of rivalry is work-family conflict (WFC), which has been defined as "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect" (Greenhaus & Beutell, 1985, p. 77). One of the dominant theories of WFC is resource theory (Edwards & Rothbard, 2000), which posits resources are limited and WFC emerges when individuals lack the resources needed to fulfill the needs of both roles. Related to rivalry, this psychologically important work relationship is expected to drain resources as individuals strive to defeat

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rivals, limiting one's ability to meet home demands and, thus, positioning the competitive relationship as relevant to work-to-family conflict (WtFC). With the theoretical links between rivalry and WtFC in mind, we bring together research on workplace rivalry and WFC with attention to the boundary conditions under which such relationships emerge.

Specifically, the primary objective of the current study is to investigate the relationship between rivalry and WtFC. Given its prevalence among working adults, work-family challenges have captured public attention and become a major topic of research within the vocational psychology literature (Allen, 2012; Kossek et al., 2021). While numerous antecedents have been associated with work-family conflict (Allen et al., 2020; French et al., 2018; Michel et al., 2011), factors associated with relationship dynamics have received less attention. Moreover, from a work-family lens, examination of rivalry would begin to reveal the role competition within the workplace plays in the inability to meet work and family demands. This is aligned with the inherent requirement for people to compete with others to succeed at work under theoretical models such as tournament theory (Lazear & Rosen, 1981).

Importantly, however, is that all rivalries are not created equal, setting the stage for perceptions of the interpersonal relationship to moderate the relationship between rivalry status and WFC. Two relevant variations include rivalry intensity and the degree one perceives they are 'winning' the competition. Regarding intensity, more intense rivalries may drain more resources. Individuals likely value intense rivalries more and strive to succeed within them, allowing for stronger relationships to WtFC to emerge. However, the considerations of relative standing to one's rival may be more nuanced with regard to WtFC. Indeed, within the competition literature, findings support those who win experience more pleasant emotions, while those who lose experience more unpleasant emotions (Wilson & Kerr, 1999). Accordingly, meaningful moderating effects based on perceived relative standing to one's rival may be present such that viewing oneself as 'winning' may buffer the relationship from having a rival to negative wellbeing outcomes. Moreover, it is plausible losses are more meaningful when intensity is greater, setting the stage for a three-way interaction of rivalry status, rivalry intensity, and relative standing to one's rival to emerge.

Lastly, we also test psychological detachment as a mediator. Specifically, rivalry's relationship to WtFC may not only occur through the resources rivalry expends, but also through greater allocation of resources to the work domain at the expense of the family domain as one strives to outperform their rival. This is akin to what Edwards and Rothbard (2000) term resource drain, or the transfer of resources from one domain to another. To test this pathway, we position psychological detachment, a measure of allocation of attentional resources to work outside of the work role, as a mediator. Moreover, this allows us to provide an initial test of the degree relationships from rivalry to WtFC are better modeled as direct relationships or via relationships to resources. To examine these relationships, a three-wave survey study was conducted.

Our study makes multiple contributions to the literature. First, we extend existing research on rivalry relationships in several important ways. By conducting a field study of workers across occupations and contexts, we begin to determine the extent rivalry relationships matter beyond the sports competition context and beyond the experimental lab scenarios that have been primarily used in previous research (e.g., Kilduff, 2014; To et al., 2018). Additionally, through the examination of an interaction between rivalry status, rivalry intensity, and relative standing, we expand the framing of rivalry by considering whether rivalry is harmful for wellbeing under certain circumstances or harmful for all who have a rival. More specifically, following resource theory, we propose those who view themselves as 'winning' the rivalry are buffered from the harmful effects of intense rivalries. This information is critical as it allows for fine-tuning of the estimated relationships between rivalry and outcomes and sheds light on the role different aspects of rivalries may play in relationships from rivalry to wellbeing.

Second, through the study of an interpersonal relationship that is defined by competition, we begin to unravel the effects that competition at work has on non-work outcomes. We propose these rivalry competitions leave the workplace and are taken home by employees, harming both personal and family wellbeing as demonstrated by relationships to WtFC and psychological detachment. Through this, evidence of the stressor effects of rivalry may be revealed, complementing past framings of rivalry that position it as a positive motivating force and thus providing a more nuanced perspective of rivalry competition (Kilduff, 2014).

Third, we examine a novel, relationship-based predictor of WtFC, thus contributing to the work-family literature. Research has demonstrated variables pertaining to interpersonal relationships at work relate to WFC, but this research has largely focused on *supportive* relationships. For example, supervisor support and coworker support relate to less WFC (French et al., 2018; Michel et al., 2011) as does having a mentor (de Janasz et al., 2013). While supportive relationships help individuals develop a reservoir of resources that enable effective management of work and family roles, other types of relationships may drain resources, relating to greater WFC. In support of this expectation, several studies have examined the link between abusive supervision and WFC (Carlson et al., 2011; Wu & Cao, 2015). We expand this line of research on resource-expending relationships by investigating workplace rivalry.

1.1. Workplace rivalry status as a predictor of work-to-family conflict

Workplace rivalry has been defined as an interpersonal relationship in which subjective competitions and social comparisons with a particular person are of psychological importance to the focal actor (Kilduff, 2014). Notably, workplace rivalry is statistically distinct from competition with a non-rival competitor (Kilduff, 2014) and forms of interpersonal conflict, such as incivility (Yip et al., 2018), positioning the construct as distinct as well as novel given its recent emergence in the organizational psychology literature (Kilduff et al., 2010). Additionally, research supports that rivalry is positively related to job performance (Kilduff, 2014), unethical behavior (Kilduff & Galinsky, 2016), and risk taking (To et al., 2018), providing rationale for further study of the construct due to implications for individual behavior. One such area that is worthy of study is the degree rivalry poses threats to employee wellbeing. In support, competition has been linked to wellbeing (Fernandez-Fernandez et al., 2015; Wilson & Kerr, 1999), and, thus, competitive rivalry relationships may similarly relate to wellbeing.

One variable that has previously been unstudied but is theoretically relevant to the study of rivalry in relation to wellbeing is WFC.

Research has shown WFC is related to a variety of outcomes including work, marital, and life satisfaction, which has helped to fuel increased interest in the topic over the past 30 years (Allen et al., 2020; French & Johnson, 2015). Additionally, WFC is directional (Mesmer-Magnus & Viswesvaran, 2005). Specifically, when work demands impede one from fulfilling family demands it is termed work-to-family conflict (WtFC), while the converse has been termed family-to-work conflict (FtWC). We focus on WtFC as workplace rivalry emanates from work and work demands have been shown to be a better predictor of WtFC than FtWC (Michel et al., 2011).

Based on resource theory, we propose rivalry may contribute to the experience of WtFC. Resource theory states resources, such as time or energy, used in one role, such as work, become unavailable for use in other roles, such as family, and that lack of resources prevents one from fulfilling their role obligations (Edwards & Rothbard, 2000). Given work demands have been described as physical, emotional, social, or organizational aspects that require sustained effort (ten Brummelhuis & Bakker, 2012), competition can be framed as a work demand, and, thus, posited as a predictor of WFC. Specifically, this competitive relationship may relate to WtFC as individuals expend resources engaging in, and trying to win within, the psychologically important and competitive rivalry relationships. For instance, individuals may exhaust emotional and cognitive energy thinking about the rivalry and their standing within it, leaving insufficient energy to meet family demands. Broadly, having a rival is expected to relate to greater WtFC as this relationship consumes available resources, leaving lesser resources available to meet family demands. In support of the expectation competitive rivalry relationships drain resources and relate to WtFC, findings from the competition literature demonstrate those in a competition group exerted greater physical effort and longer sustained effort than did those in a non-competition control group (DiMenichi & Tricomi, 2015). Moreover, given this specific theoretical link between rivalry and resources as well as the vast literature linking resources to WtFC (e.g., Michel et al., 2011), this positions WtFC as an ideal variable through which to provide initial testing of the harms of rivalry in relation to wellbeing.

Hypothesis 1. Rivalry status is positively related to WtFC, such that those with a rival report greater WtFC.

1.2. Rivalry characteristics as moderators of the rivalry status and WtFC relationship

While we predict rivalry relates to WtFC, not all rivalries are equivalent. Indeed, past research shows rivalries differ in intensity (Tyler & Cobbs, 2017) and intensity predicts outcomes (Kilduff et al., 2010), making it important to not only investigate the presence of a rival, but properties of the rivalry relationship, such as intensity. Within rivalry relationships, having a more, relative to less, intense rivalry is thought to expend additional resources given the greater psychological importance of intense relationships denote greater feelings of competition. This reasoning is consistent with other workplace relationships such as mentoring in which it is not just having a mentor that matters with regard to outcomes, but characteristics of the mentorship (Allen et al., 2004). In line with resource theory, we expect rivalry intensity moderates the relationship of rivalry status and WtFC as more intense rivalries expend more resources, lessening one's ability to meet demands; specifically, we expect the relationship is stronger when rivalry intensity is higher than when rivalry intensity is lower.

Hypothesis 2. The positive relationship between rivalry status and WtFC is moderated by rivalry intensity, such that the relationship is stronger when rivalry intensity is higher than when rivalry intensity is lower.

Another way in which rivalry relationships vary is the extent individuals feel they are winning or losing the rivalry; we refer to this as relative standing. Specifically, relative standing is the degree one views themselves as better or worse off than their rival, which can be thought of as winning or losing. Based on past findings from the competition literature that demonstrate perceived losing is related to diminished psychological wellbeing, lesser relative standing is expected to expend one's emotional and psychological resources with relevance for WtFC under resource theory. Specifically, research shows those who lose a competition report greater anger, humiliation, and shame than do those who win (Wilson & Kerr, 1999), while those who win a competition report greater self-confidence and lower anxiety compared to those who lose (Fernandez-Fernandez et al., 2015). Given one's ability to meet both work and family demands is dependent on adequate resources, we expect the relationship between rivalry status and WtFC is moderated by relative standing to one's rival; specifically, we expect the relationship is stronger when relative standing is lower than when relative standing is higher.

Hypothesis 3. The positive relationship between rivalry status and WtFC is moderated by relative standing to one's rival, such that the relationship is stronger when relative standing is lower than when relative standing is higher.

While more intense relationships and one's relative standing within a rivalry relationship are both expected to relate to WtFC, the two rivalry features may also interact with one another. Specifically, in a vacuum, intensity is thought to relate to greater WtFC, as individuals expend more resources to engage with higher intensity rivalries, lessening the resources available to fulfill family needs. However, this relationship assumes that there are no circumstances under which higher intensity may relate to resource gains in addition to the drains, potentially offsetting (or buffering) the harmful relationship between rivalry and wellbeing.

From a theoretical perspective, one boundary condition that may be relevant is relative standing to one's rival. More specifically, we hypothesized intensity would relate to WtFC based on greater resource expenditure as individuals aim to beat their opponent. However, for those who are winning (i.e., having a greater relative standing), the incentive to expend additional resources would be lessened as they have already obtained the desired status. In contrast, when individuals are losing intense rivalries the desire to improve one's standing may yield greater resource expenditure, relating to lesser resources to meet family demands such that WtFC is higher. Accordingly, a three-way moderation is proposed.

Hypothesis 4. The positive relationship between rivalry status and WtFC is moderated by rivalry intensity and relative standing, such that the moderating effect of rivalry intensity is strengthened when relative standing is lower and weaker when relative standing

is higher.

1.3. Psychological detachment as a mediator of rivalry and work-family conflict

While we expect rivalry to directly relate to WtFC, mediators may also be present. One such mediator may be psychological detachment, which has been defined as mentally disengaging from work, such that one leaves their thoughts and feelings about work at work rather than continuing to experience them at home (Sonnentag & Fritz, 2007); importantly, cognitive and emotional energy have been positioned as resources (Edwards & Rothbard, 2000). Given psychological detachment refers to the degree one thinks and ruminates about work while at home, this can be viewed as reflective of an allocation of a cognitive and/or emotional resource to the work role at the expense of the home role. Importantly, the inherent transfer of home attentional resources to work that is reflected by psychological detachment aligns with Edwards and Rothbard's operationalization of resource drains, which they also posit as a mechanism through which WFC emerges (2000); in this instance, the drain comes at the expense of the home domain, facilitating WtFC. In line with this, research indicates psychological detachment negatively relates to WtFC (Dettmers, 2017).

Accordingly, based on past research and theory, we position psychological detachment as indicative of a resource drain at the expense of the home domain and, thus, as a mediator of the relationship between rivalry and WtFC. Specifically, lack of psychological detachment has been posited as a result of workplace stressors, with evidence supporting variables such as social conflict and emotional demands are related to an inability to detach (Wendsche & Lohmann-Haislah, 2017). Notably, in this study, workplace rivalry is framed as a stress-inducing competitive demand, and, thus, a relationship between rivalry and its hypothesized moderators to psychological detachment is expected as individuals with rivals have difficulty detaching from work given the psychological importance of this relationship. Through examination of detachment as a mediator, we also begin to reveal the degree that rivalry itself predicts WtFC, or whether the relationship is better modeled via an indirect relationship to resource allocation in line with resource theory; this positions psychological detachment as an ideal mediator through which we can test the relevance of resource theory in explaining relationships between rivalry and WtFC. In line with this, several hypotheses are proposed.

First, we expect having a rival will relate to lesser psychological detachment.

Second, we expect rivalry intensity and relative standing moderate the relationship between rivalry status and psychological detachment in three ways. One, the relationship will be strengthened when intensity is greater; this is expected as more intense rivalries are by nature more psychologically important than less intense rivalries and will drain more resources from the home domain than less intense rivalries. Two, relative standing strengthens this relationship as individuals who are losing, compared to those who are winning, may spend more time thinking about work and ways to improve at work in order to improve their odds of victory. Three, a three-way interaction will emerge such that the harmful effects of having a rivalry that is intense may be buffered when one perceives themselves as winning the rivalry. Specifically, in line with the competition literature (ex. Fernandez-Fernandez et al., 2015), we expect perceived winning within an intense rivalry will be a positive experience that provides resources, mitigating the moderating effect of rivalry intensity.

Third, a conditional mediated path from rivalry status to WtFC via psychological detachment is hypothesized given the hypothesized conditional relationship between rivalry status and psychological detachment based on rivalry intensity and relative standing as well as the supported relationship between detachment and WtFC (Dettmers, 2017).

Hypothesis 5. Rivalry status is positively related to psychological detachment, such that those with a rival report lesser psychological detachment.

Hypothesis 6. Rivalry intensity and relative standing to one's rival moderate the relationship between rivalry status and psychological detachment such that:

- 6a. The relationship is stronger when rivalry intensity is higher.
- 6b. The relationship is stronger when relative standing is lower.
- 6c. The moderating effect rivalry intensity on rivalry status is stronger when relative standing is lower.

Hypothesis 7. Rivalry intensity and relative standing to one's rival moderate the indirect relationship between rivalry status and

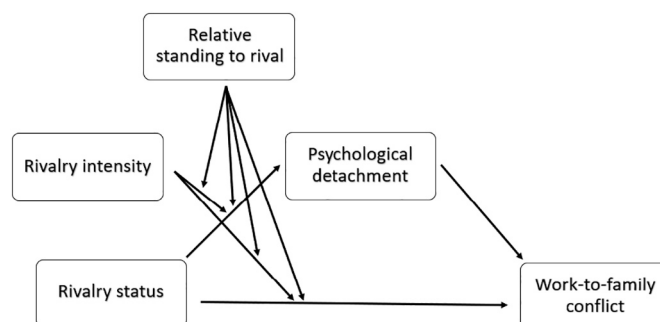


Fig. 1. Visualization of the theoretical mediation model.

WtFC via psychological detachment through moderating the relationship between rivalry status and psychology detachment; the relationship will be such that the moderating effect of rivalry intensity is strengthened when relative standing is lower and weaker when relative standing is higher.

A visualization of the hypothesized relationships can be found in Fig. 1.

2. Method

2.1. Participants

Participants were working adults (>20 h a week for pay) recruited through multiple avenues. First, individuals were contacted through professional science, technology, engineering, and mathematics (STEM) organizations. To supplement and broaden this sample, alumni from a Southeastern university in the United States and government employees were also invited to participate. Across the full sample of those with and without rivals, mean age was 35.53 ($SD = 11.65$), median salary was in the \$60,000–\$69,999 range, median education level was a Masters' degree, and the average participant worked 39.08 ($SD = 11.11$) hours per week. Related to race, participants could select multiple response options: 80 % identified as White, 5 % identified as Black, 6 % identified as Latino, 11 % identified as Asian, and 2 % identified as other. Related to gender, 280 identified as woman, 126 identified as men, 2 identified as gender variant or nonconforming, and 2 did not self-identify. Related to family demographics, 46 % were married, 15 % lived with a non-married partner, and 39 % were single. Additionally, 22 % had at least one child living at home. Among those without a child, 52 % either lived with a partner or were married. Participant demographic information grouped by rivalry status is shown in Table 1.

Participants responded to three online surveys with 2 weeks separating each survey. This methodology was not intended to allow for causal examination, but for the purpose of temporal separation to help rule out spurious relationships due to common method variance artifacts, such as mood effects, that bias statistical estimates (Podsakoff et al., 2003). At Time 1, participants responded to items about rivalry status, rivalry intensity, and relative standing to one's rival. At Time 2 they reported on psychological detachment and at Time 3 they reported on WtFC.

At each timepoint, participants were removed for meeting exclusion criteria. Specifically, participants were removed for failing attention checks (ex. "Answer strongly agree to this question"), answering in <2 s per question, providing inconsistent information (ex. answering "yes" to the question "Do you work 20 hours per week for pay?" and reporting a number <20 h per week for how many hours they worked per week for pay), and for being an outlier in a longstring analysis. For the longstring analysis, the longest length of consecutive answers and the average length of consecutive answers were analyzed in 'R' (R Core Team, 2019) using the 'careless

Table 1

Demographic information for the rival and no rival groups.

	N	Mean	SD	Median	Min	Max	Skew	Kurtosis
<i>No rival group</i>	244	0.00	0.00	0.00	0	0	NA	NA
Age	243	35.71	11.84	32.00	20	72	1.01	0.20
Gender	244	0.33	0.54	0.00	0	3	1.65	3.55
Salary	242	7.92	5.41	7.00	1	21	0.97	0.09
Work hours	244	38.84	11.22	40.00	20	90	0.28	1.74
Education	244	5.10	0.89	5.00	2	6	-0.99	1.17
Race: White	244	0.79	0.41	1.00	0	1	-1.39	-0.06
Race: Black	244	0.05	0.22	0.00	0	1	4.14	15.23
Race: Latino	244	0.05	0.23	0.00	0	1	3.95	13.69
Race: Asian	244	0.12	0.33	0.00	0	1	2.28	3.22
Race: Other	244	0.02	0.16	0.00	0	1	6.10	35.38
Relationship status	244	2.03	0.92	2.00	1	3	-0.06	-1.83
# of children at home	244	0.39	0.80	0.00	0	4	2.10	3.79
<i>Rival group</i>	166	1.00	0.00	1.00	1	1	NA	NA
Age	166	35.28	11.40	31.50	19	72	1.12	0.58
Gender	166	0.33	0.47	0.00	0	1	0.71	-1.50
Salary	165	8.84	5.46	8.00	1	21	0.67	-0.41
Work Hours	166	39.44	10.98	40.00	20	80	-0.13	0.48
Education	166	5.16	0.88	5.00	2	6	-0.75	0.16
Race: White	166	0.83	0.38	1.00	0	1	-1.75	1.08
Race: Black	166	0.05	0.23	0.00	0	1	3.90	13.30
Race: Latino	166	0.08	0.27	0.00	0	1	3.11	7.72
Race: Asian	166	0.08	0.28	0.00	0	1	2.96	6.83
Race: Other	166	0.01	0.11	0.00	0	1	8.86	77.04
Relationship status	166	2.13	0.91	2.00	1	3	-0.25	-1.77
# of children at home	166	0.34	0.80	0.00	0	4	2.46	5.35

Notes: Gender was coded with woman as 0, men as 1, gender variant/nonconforming as 2, and did not self-identify as 3. Salary was coded in \$10,000 increments beginning with "Under \$9999" coded as 1 and ending with "Over \$200,000" coded as 21. Education was coded with "High School graduate" as 1, "Some college" as 2, "Two-year degree" as 3, "Four-year degree" as 4, "Masters' degree" as 5, and "Doctorate degree" as 6. Each Racial group was coded 0 for not identifying as a member of this group and 1 for identifying as a member of this group. Relationship status was coded with "Single" = 1, "Living with Partner" = 2, and "Married" = 3.

package' (Yentes & Wilhelm, 2018). These techniques were in line with recommendations from Huang et al. (2015) to identify insufficient effort responding. At Time 1, 1146 participants completed the survey; of these, 29 were removed for failing attention checks and 33 for providing inconsistent information, leaving 1084 eligible. Of these 1084, 990 participants (402 with rivals) consented to be contacted for the next two waves. At Time 2, 570 eligible participants completed the survey; of these, 2 were removed for failing attention checks and 2 were removed due to the longstring analysis, leaving a sample of 566 (238 with rivals). At Time 3, 415 eligible participants completed the survey; of these, 5 were removed due to the longstring analysis, leaving a final sample of 410 (166 with rivals) participants who met eligibility criteria at all three waves.

2.2. Measures

All constructs were assessed on a five-point strongly disagree to strongly agree scale unless otherwise noted.

Rivalry status was measured by providing the definition of rivalry ("A relationship in which subjective competitions and/or social comparisons with a particular person are more important to you than those with other people") and then asking participants to report the number of current workplace rivalries they had based on this definition. Rivalry status was dummy-scored such that those without rivals = 0 and those with at least one rival = 1; 40 % reported having at least one rival. In line with rivalry conceived as a longstanding competitive relationship of psychological importance (Kilduff, 2014), our participants reporting a median rivalry duration of 18 months, over 90 % of those with rivals reported the rivalry relationship was ongoing for at least 3 months, and over 60 % reported that it was ongoing for at least 1 year.

Rivalry intensity was measured using an eleven-point one-item measure adapted from Kilduff (2014). Participants indicated the intensity of the rivalry with their most intense rival with options that ranged from "Mild rival" (scored as 1) to "Fierce rival" (scored as 11).

Relative standing to rival was measured with five-items ($\alpha = 0.86$) based on the 'rank' factor reported by Allan and Gilbert (1995) in their social comparison scale. Responses were based on an eleven-point scale wherein participants ranked themselves relative to their most important rival. Comparisons were made on points of interest such as less successful (scored 1) to more successful (scored 11).

Psychological detachment was measured using the four-item ($\alpha = 0.86$; e.g., "During after-work hours, I forget about work") measure developed by Sonnentag and Fritz (2007).

Work-to-family conflict was measured using the five-item ($\alpha = 0.93$; e.g., "The demands of my work interfere with my home and family life") measure from Netemeyer et al. (1996).

Control variables were trait affect, trait competitiveness, number of children living at home, romantic relationship status, salary, education, age, and race. Notably, variables were chosen in line with recommendations from Spector and Brannick (2011), who advise only selecting variables that are theoretically related to both the predictor and outcome variables.

Affect was included to support that rivalry and relative standing within the rivalry, rather than individual differences in affect drove statistical relationships. Notably, affect has been related to both relative standing comparisons (Buunk et al., 2001) and to WFC (Allen et al., 2012). Moreover, given the wide range of antecedents of WtFC (Michel et al., 2011), negative affect is a control variable of particular practical importance as these antecedents are often operationalized as one's perception or appraisal of the stressor rather than its objective presence (Duong et al., 2015). Reports of positive and negative affect were collected using the International Positive and Negative Affect Schedule Short Form (I-PANAS-SF, Thompson, 2007). Five items for positive affect ($\alpha = 0.69$) and five-items for negative affect were included. Reliability analysis revealed that one item displayed low cross and factor loadings, and, thus, this item was removed, leaving a four-item scale ($\alpha = 0.72$). Items were measured on a five-point Likert scale that ranged from "Never" to "Always" and a sample item is "Thinking about yourself and how you normally feel, to what extent do you generally feel: Inspired."

Competitiveness was included to provide support that rivalry status and intensity, rather than a consistent tendency to compete drove statistical relationships. Moreover, relationships have been supported between competition and workaholism (Keller et al., 2016), which has implications for non-work resources, and, in turn, WtFC. Trait competitiveness was measured using five items from Helmreich and Spence (1978) (e.g., "It annoys me when other people perform better than I do") based on a five-point scale that ranged from "Strongly disagree" to "Strongly agree." Reliability analysis revealed that one item displayed low cross-loadings and a lower factor loading, and, thus, this item was removed, leaving a four-item scale ($\alpha = 0.81$).

Given the expected variation in WtFC based on family status (Allen & Finkelstein, 2014), both number of children living at home (scored as a raw count) and romantic relationship (scored such that 1 = single, 2 = living with partner, 3 = married) status were controlled for. Moreover, these statuses may be related to rivalry as more family responsibility is thought to relate to greater resource demands, which may reduce one's ability to engage in a rivalry and/or to exert the resources needed to achieve a higher relative standing.

Income (scored in \$10,000 increments that ranged from under \$9999 to over \$200,000) and education (scored by highest degree achieved) were controlled given rivalry may be more common at higher-paying jobs where greater career growth opportunities are present or jobs with an additional barrier to entry (i.e., education requirements) that may fuel competition. Relatedly, WtFC may differ based on education requirements, while psychological detachment varies based on the degree that one's work is flexible in terms of location (Mellner et al., 2016), which is related to education (Dey et al., 2020). Past research indicates salary relates to work-family management (McKee, 2019), and, thus, it was included as a control for WtFC; however, it was not included as a control for psychological detachment given a lack of theoretical rationale for a relationship between these variables. Lastly, age and race were included as expectations of competition at work and family demands may vary based on these characteristics.

Table 2

Means, standard deviations, and intercorrelations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Rivalry status	–																	
2. Rivalry intensity	NA	–																
3. Relative standing	NA	0.08	(0.86)															
4. Psychological detachment (T2)	–0.21**	–0.32**	–0.01	(0.86)														
5. Work-to-family conflict (T3)	0.14**	0.22**	–0.10	–0.39**	(0.93)													
6. Negative affect	0.11*	0.03	–0.22**	–0.20**	0.21**	(0.69)												
7. Positive affect	0.09	0.08	0.32**	–0.03	–0.11*	–0.27**	(0.72)											
8. Trait competitiveness	0.19**	0.05	0.00	–0.03	0.07	0.02	0.20**	(0.81)										
9. Income	0.08	0.08	0.12	–0.10*	–0.05	–0.16**	0.11*	0.01	–									
10. Education	0.03	0.00	0.05	–0.13*	0.08	–0.11*	0.01	–0.07	0.59**	–								
11. Age	–0.02	0.18*	0.21**	0.05	–0.11*	–0.24**	0.21**	–0.07	0.55**	0.33**	–							
12. Ethnicity: White	0.06	0.14	–0.05	–0.08	0.05	–0.08	0.02	–0.08	0.17**	0.18**	0.20**	–						
13. Ethnicity: Black	0.01	–0.04	–0.14	0.16**	–0.13**	0.00	0.00	0.08	–0.05	–0.11*	–0.06	–0.42**	–					
14. Ethnicity: Asian	–0.06	–0.02	0.08	–0.07	–0.02	0.06	–0.05	0.02	–0.13**	–0.06	–0.15**	–0.57**	–0.08	–				
15. Ethnicity: Latino	0.05	–0.12	0.05	0.06	0.06	0.01	0.07	0.11*	–0.14**	–0.20**	–0.15**	–0.35**	–0.02	–0.09	–			
16. Ethnicity: Other	–0.04	0.07	0.11	–0.05	0.07	0.06	–0.08	0.00	–0.07	–0.04	–0.01	–0.20**	–0.03	–0.05	–0.04	–		
17. Relationship status (T2)	0.05	–0.04	0.15*	–0.02	0.01	–0.20**	0.11*	–0.07	0.41**	0.33**	0.37**	0.20**	–0.08	–0.12*	–0.13*	–0.07	–	
18. # of children at home (T2)	–0.03	–0.18*	0.12	0.12*	–0.03	–0.20**	0.10*	0.04	0.21**	0.15**	0.28**	0.09	–0.07	–0.07	0.00	–0.02	0.37**	–
Mean	0.40	5.26	6.64	2.88	2.68	2.50	3.80	3.26	8.29	5.13	35.53	0.80	0.05	0.11	0.06	0.02	2.07	0.37
SD	0.49	2.59	1.91	1.07	1.17	0.61	0.51	0.96	5.44	0.89	11.65	0.40	0.22	0.31	0.24	0.14	0.92	0.80

Notes: * $p < .05$. ** $p < .01$. T1 denotes a variable collected at Time 1. T2 denotes a variable collected at Time 2. T3 denotes a variable collected at Time 3. Rivalry Status was coded such that not having a rival was coded as 0 and having a rival was coded as 1. Ethnicity was coded such that not identifying as an ethnicity was coded as 0 and identifying as an ethnicity was coded as 1. Relationship status was coded such that single was coded 1, living with a non-married partner was 2, and married was 3. Sample size was 410 for all variables except for Age, Income, Rivalry Intensity and Relative Standing, which had an N of 409, 407, 166, and 165, respectively.

3. Results

Data, syntax, and annotated output are publicly available (Regina & Allen, 2022).

3.1. Descriptive statistics

Prior to hypothesis testing, descriptive statistics related to demographics and the variables of interest were analyzed using the 'psych' package (Revelle, 2019) in R (R Core Team, 2019). With regard to demographics, the rival and no rival groups did not differ significantly based on results of analyses of variance tests ($p > .05$). Additionally, results revealed that the non-binary variables of interest were normally distributed with skewness and kurtosis scores that ranged from approximately -1 to $+1$.

3.2. Hypothesis testing

A correlation table of the variables of interest is shown in Table 2. While the bivariate correlations provided initial support for several hypotheses, structural equation modeling was used to formally test the hypothesized relationships. Structural equation modeling was used as this allowed for the testing of direct, mediated, and moderated relationships in larger coherent models that also included all control variables. To best examine hypotheses related to mediation, bootstrap analyses were conducted using 1000 bootstraps. All analyses were conducted in 'R' using the package 'lavaan' (Rosseel, 2012). Only those who provided responses to all model variables were included in analyses, leaving a final sample of 406 participants (165 with rivals).

The model was crafted such that control variables, rivalry status, rivalry intensity, and relative standing to rival were input as predictors of psychological detachment. Moreover, controls, rivalry status, rivalry intensity, and relative standing to rival, and psychological detachment were input as predictors of WtFC. Importantly, moderation effects between rivalry status, rivalry intensity, and relative standing to one's rival to both psychological detachment and WtFC were proposed within our model and also estimated. However, given the nature of the relationship between rivalry status and the two rivalry aspects (intensity and relative standing) such that those without rivals did not respond to these items, several data transformations were required to allow for the testing of moderated relationships.

First, given rivalry intensity and relative standing to rival were continuous measures, each of these variables were centered around the respective means. Second, since those without rivals would not report a rivalry intensity or a relative standing to their rival, these values were then set to the mean (previously transformed to equal 0) for those without rivals; through this, any effects of rivalry intensity and relative standing were fixed to 0 for the group without rivals in line with the zero property of multiplication, which states anything multiplied by 0 will equal 0. Third, given the conceptualization of rivalry status such that a score of 0 reflects having 0 current rivalry relationships and a score of 1 reflects the presence of a rivalry relationship, we must further consider the implications of the zero property of multiplication within an interaction framework. Within a three-way interaction framework, not only are all three variables multiplied together to create the three-way interaction term, but all combinations of two-way interactions among the three variables are also created by multiplying the respective variables together. When accounting for the 0 and 1 coding for rivalry status and the imputation of the 0 scores for rivalry intensity and relative standing for the no-rival group, this positions each two-way interaction as replicating data from another variable. In example, multiplying rivalry status by rivalry intensity yields scores that exactly replicate the standalone rivalry intensity values. We see similar redundancies between the relative standing values and the rivalry status and relative standing interaction as well as the values for the three-way interaction and the two-way interaction of relative standing and rivalry intensity. Accordingly, this prevents model convergence via the creation of a covariance matrix that is not positive definite due to the identical values that are, thus, perfectly correlated.

In line with this, the two-way and three-way interaction terms were input into the model as predictors while the rivalry intensity

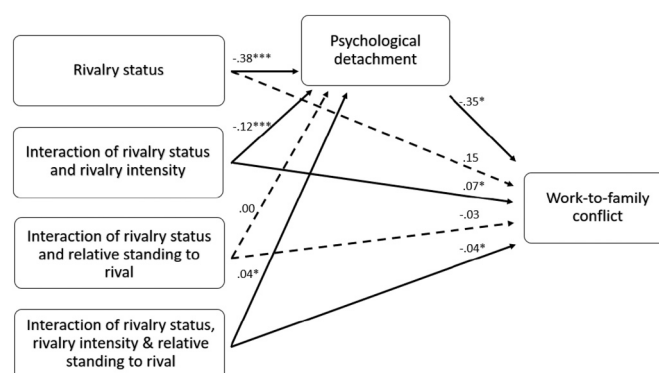


Fig. 2. Results of mediation model using structural equation modeling.

Notes. Unstandardized regression weights are reported. Rivalry status was dummy coded such that not having a rival was coded as 0 and having a rival was coded as 1. $N = 406$. Dashed lines denote a relationship with a p value $> .05$. * $p < .05$. ** $p < .01$. *** $p < .001$.

and relative standing variables were omitted. Notably, as rivalry intensity and relative standing to one's rival are only recorded within a sub-group (those with rivals), the positioning of these variables as having direct effects absent rivalry status is unnecessary because its effect is always conditional on whether the individual has a rival. Given this inherent conditional relationship, we note that, while the full sample consists of 406 participants, the estimates of the relationships of these interaction effects are better conceptualized as being consistent with the sample of 165 individuals with a rival. This unique case is present as the interaction effect will always equal 0 in line with the zero property of multiplication for the no rival group (rivalry status coded 0), while the interaction effect for the rivalry group (rivalry status coded 1) will always equal the estimate. Accordingly, we can interpret two-way interactions without plotting them as they are inherently reflective of the rival group (rivalry status coded 1), while the estimated interaction effects for the no rival group are inherently equal to 0.

Prior to hypothesis testing, model fit was examined. Specifically, observed CFI was 0.99 and SRMR was 0.004, providing evidence of model fit (Hu & Bentler, 1999). Further evidence of acceptable fit was provided by the chi-square difference test, which was not significant [$\Delta\chi^2 = 3.02 (1), p = .08$]. Following examination of model fit, individual paths were examined. A visualization of the full model with results can be found in Fig. 2.

Hypothesis 1 stated rivalry status is positively related to WtFC, such that those with a rival report greater WtFC. While correlational results supported a relationship between rival status and WtFC ($r = 0.14, p = .01$), results from the structural equation model did not provide support for a direct relationship between rivalry status and WtFC ($B = 0.15, p = .19$) after accounting for the effects of the control variables and psychological detachment. Accordingly, **Hypothesis 1** was not supported.

Hypotheses 2 through 4 pertained to moderated direct relationships from rivalry status to WtFC. To test each of these hypotheses, the path from the respective interaction term to WtFC was examined. **Hypothesis 2** stated the relationship between rivalry status and WtFC is moderated by rivalry intensity, such that the relationship is stronger when rivalry intensity is higher. Results indicated the relationship of rivalry status and WtFC was more positive when rivalry intensity was higher ($B = 0.07, p = .02$), providing support for **Hypothesis 2**. Similarly, **Hypothesis 3** stated the positive relationship between rivalry status and WtFC is moderated by relative standing to one's rival, such that the relationship is stronger when relative standing is lower than when relative standing is higher. Results did not indicate relative standing significantly moderated the relationship of rivalry status and WtFC ($B = -0.03, p = .45$), and, thus, **Hypothesis 3** was not supported.

Hypothesis 4 stated the positive relationship between rivalry status and WtFC is moderated by rivalry intensity and relative standing, such that the moderating effect of rivalry intensity is strengthened when relative standing is lower and weaker when relative standing is higher. Results supported a three-way interaction ($B = -0.04, p = .01$). We graphed the interaction using the 'ggplot2' package within 'R' (see Fig. 3). To improve interpretability, estimated scores based on rivalry status at the transformed mean values (0) for rivalry intensity and relative standing were plotted as this operates as an estimate of the scores on WtFC for each rivalry group after controlling for rivalry intensity and relative standing to rival. We also conducted a simple slopes test using the simple_slopes function in the 'R' package 'reg-helper' (Hughes, 2021). The relationship between rivalry intensity and WtFC was more positive when relative standing was low ($B = 0.12, p = .003$) and was not significant when relative standing was high ($B = 0.02, p = .67$). This pattern provided support for **Hypothesis 4**.

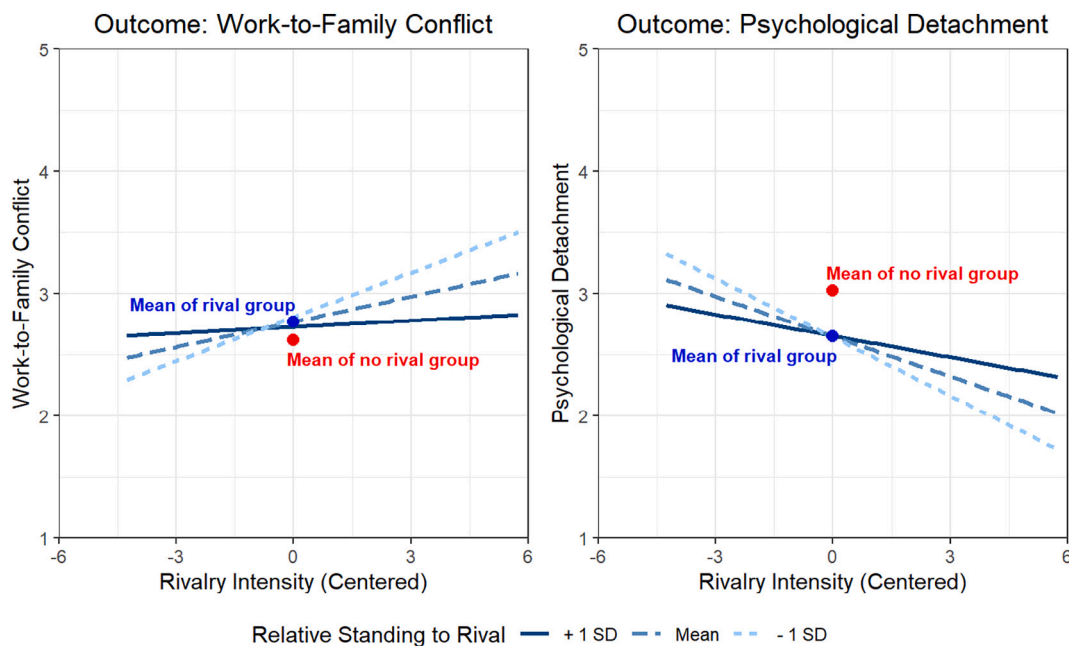


Fig. 3. Direct relationships from rivalry status to work-to-family conflict and psychological detachment as moderated by rivalry intensity and relative standing to one's rival.

Hypothesis 5 stated rivalry status is negatively related to psychological detachment, such that those with a rival report lesser psychological detachment. Results supported a direct relationship between rivalry status and psychological detachment ($B = -0.38, p < .001$). More specifically, those with rivals reported lesser detachment, providing support for **Hypothesis 5**.

Hypothesis 6 pertained to the moderating effects of rivalry intensity and relative standing to one's rival on the relationship of rivalry status and psychological detachment.

Hypothesis 6a stated the relationship of rivalry status and psychological detachment is stronger when rivalry intensity is greater compared to when it is lower. To test this, the path from the interaction term of rivalry status and rivalry intensity to psychological detachment was examined. Results indicated the relationship of rivalry status and psychological detachment was more negative when rivalry intensity was higher ($B = -0.12, p < .001$), providing support for **Hypothesis 6a**.

Hypothesis 6b stated the relationship of rivalry status and psychological detachment is stronger when relative standing is lower compared to when it is greater. To test this, the path from the interaction term of rivalry status and relative standing to psychological detachment was examined. Results did not indicate a significant moderating effect of relative standing to one's rival on the relationship between rivalry status and psychological detachment ($B = 0.00, p = .99$), providing no support for **Hypothesis 6b**.

Hypothesis 6c stated the moderating effect of rivalry intensity on the relationship of rivalry status and psychological detachment is stronger when relative standing to one's rival is lower than when it is greater. To test this, the path from the three-way interaction to psychological detachment was examined. Results supported a significant interaction ($B = 0.04, p = .01$). The relationship was graphed using the 'ggplot2' package within 'R' (see Fig. 3). To improve interpretability, estimated scores based on rivalry status at the transformed mean values (0) for rivalry intensity and relative standing were plotted as this operates as an estimate of the scores on psychological detachment for each rivalry group after controlling for rivalry intensity and relative standing to rival. A simple slopes test was also conducted using the simple_slopes function contained in the 'R' package 'reghelper' (Hughes, 2021). Results indicated that the relationship between rivalry intensity and psychological detachment was more negative when relative standing was low ($B = -0.16, p < .001$) and not significant when relative standing was high ($B = -0.06, p = .11$). This pattern provides support for **Hypothesis 6c**.

Hypothesis 7 proposed a conditional indirect effect of the relationship of rivalry status to WtFC via psychological detachment; specifically, rivalry intensity and relative standing were to moderate the relationships from rivalry status to both WtFC and psychological detachment. To test a mediated pathway, the paths from rivalry status to psychological detachment and from psychological detachment to WtFC were examined. Results supported a significant relationship between rivalry status and psychological detachment ($B = -0.38, p < .001$) as well as a significant relationship from psychological detachment to WtFC ($B = -0.35, p < .001$). This pattern of results provided rationale to proceed with Preacher and Hayes (2004) mediation testing, which indicated rivalry status was indeed indirectly related to WtFC via psychological detachment ($B = 0.13, 95\% \text{ CI } [0.06, 0.22]$). Additionally, rivalry intensity and relative standing moderated the relationships from rivalry status to WtFC and psychological detachment as previously reported. This provided rationale to consider how the indirect relationship varied across different levels of rivalry intensity and/or relative standing. To estimate these relationships, the direct, indirect, and total effect (direct and indirect) effects of rivalry status on WtFC were estimated at the mean and ± 1 SD values for rivalry intensity and relative standing to one's rival (Table 3). The most positive total effect estimate for the relationship of rivalry status and WtFC was recorded among those engaging in an intense rivalry in which one perceived themselves as having a lesser relative standing compared to one's rival (total effect = 0.92, 95% CI [0.55, 1.27]), providing support for **Hypothesis 7**. Overall, the full model accounted for 24 % of the variance in WtFC and 20 % of the variance in psychological detachment.

As a robustness check, both models were analyzed without controls. Results were largely unchanged related to interpretation of statistical significance with two exceptions: the interaction of rivalry status, relative standing, and rivalry intensity became a non-significant predictor of psychological detachment ($B = 0.03, p = .05$) and rivalry intensity became a non-significant predictor of WtFC ($B = 0.06, p = .07$).

Table 3

Conditional direct, indirect, and total effects of rivalry status on WtFC as moderated by rivalry intensity and relative standing to one's rival.

		Relative standing to one's rival			
			-1 SD	Mean	+1 SD
Conditional direct effects	Rivalry intensity	-1 SD	-0.19 [-0.53, 0.16]	-0.04 [-0.30, 0.23]	0.11 [-0.24, 0.51]
		Mean	0.21 [-0.06, 0.47]	0.15 [-0.07, 0.37]	0.09 [-0.18, 0.38]
		+1 SD	0.61 [0.25, 0.94]	0.34 [0.04, 0.62]	0.06 [-0.30, 0.43]
Conditional indirect effects via psychological detachment	Rivalry intensity	-1 SD	-0.05 [-0.16, 0.06]	0.03 [-0.06, 0.12]	0.10 [-0.02, 0.23]
		Mean	0.13 [0.04, 0.24]	0.13 [0.06, 0.22]	0.13 [0.04, 0.23]
		+1 SD	0.31 [0.18, 0.49]	0.24 [0.14, 0.37]	0.16 [0.05, 0.30]
Conditional total effects	Rivalry intensity	-1 SD	-0.24 [-0.59, 0.12]	-0.01 [-0.27, 0.27]	0.21 [-0.15, 0.62]
		Mean	0.33 [0.06, 0.60]	0.28 [0.05, 0.51]	0.22 [-0.06, 0.52]
		+1 SD	0.92 [0.55, 1.27]	0.57 [0.29, 0.86]	0.23 [-0.14, 0.63]

Notes: Values contained within brackets denote the 95 % confidence interval of the estimate. In line with the multiplicative rule of 0, the total effect for no rival group (coded 0) was equal to 0.00. SD for relative standing to one's rival = 1.91. SD for rivalry intensity = 2.59.

4. Discussion

Informed by resource theory, we examined relationships between rivalry and work-to-family conflict. Results indicate individuals do, in fact, ‘take rivalries home,’ providing evidence workplace competitions can harm work-family outcomes. Specifically, rivalry status was related to WtFC and to psychological detachment with relationships moderated by rivalry intensity and one’s relative standing within the rivalry. This suggests rivalry hinders individuals from leaving work at work, limiting one’s ability to manage work and family, and that rivalry is more harmful under some circumstances than others. Overall, findings support rivalry as a stressor and expand the scope of outcomes previously associated with rivalries. Moreover, we use a more heterogeneous field sample than previous research that has focused on sports-related rivalries (Kilduff, 2014; Kilduff & Galinsky, 2016; To et al., 2018), finding a substantial percentage (40 %) of workers report having a workplace rival.

A key objective of the study was to examine whether having a competition with a rival relates to WFC. Importantly, a significant correlation between rivalry status and WtFC was observed. However, this relationship became non-significant after modeling the control variables and the hypothesized mediating effect. Additionally, the indirect relationship between rivalry status and WtFC was supported through psychological detachment as a mediator, providing evidence the relationship between rivalry status and WtFC was present but best explained via a shared relationship to psychological detachment. Conceptually, this mediated relationship provides evidence the relationship between having a rival and WtFC may be better explained through indirect pathways via variables such as psychological detachment that reflect resource allocation rather than via direct relationships, which is relevant for future theorizing of relationships from rivalry to wellbeing. Moreover, these mediation results have implications for the recovery of employees. Namely, when one has a rival, they struggle to detach, denoting this work relationship drains one’s non-work cognitive and emotional resources, inhibiting the ability to meet family demands. Broadly, this adds to the limited body of research that has examined how negative interpersonal work relationships can be transferred to the non-work domain (e.g., Carlson et al., 2011) by providing increased information on ‘how’ these variables are related and, in doing so, advances the rivalry and work-family literatures. Similarly, this expands the competition literature. Notably, research on competition has typically focused on work-domain outcomes (Kale et al., 2009), while ignoring the crucial role that workplace competitions may play for career development, health, and domain conflicts among employees.

We also tested several aspects of the rivalry and how they moderate the relationships between rivalry status and outcomes. We found rivalry status was more positively related to WtFC and more negatively related to psychological detachment when rivalries were more intense; in contrast, results did not indicate relative standing was a standalone moderator of such relationships. This demonstrates all rivalry competitions are not equal and aspects of the rivalry are potentially important considerations in future research. For intensity, it appears rivalry relationships that are more intense allow for stronger relationships between having a rival and outcomes. However, related to wellbeing, one aspect that may be less relevant as a standalone consideration is whether one views oneself as winning the rivalry as this did not moderate relationships from rivalry status to outcomes in and of itself, denoting rivalry is a harmful stressor regardless of whether one perceives themselves as losing or as winning. While this finding runs counter to our hypotheses, this may occur as individuals who are winning or losing have differing responses based on individual differences. In one example, an individual could react to perceived losing by engaging additional resources to better compete to the detriment of their family, while another may accept this loss and instead opt to devote resources to their family domain to experience success that improves their self-efficacy. To better understand the nature of this relationship, greater consideration of the relevant individual differences that act as boundary conditions of the relationship from relative standing to outcomes may be worthwhile.

However, while relative standing was not a significant moderator of the relationship between rivalry status and outcomes within a two-way interaction, it was a significant predictor within a three-way interaction that also inputted rivalry intensity. Specifically, those engaged in rivalries that were intense and that they perceived themselves as losing, had a more positive relationship to WtFC and a more negative relationship to psychological detachment. Additionally, the largest total effect of rivalry status on WtFC was reported among those with intense rivalries wherein they perceived themselves as having a lesser relative standing. In contrast, the relationship between intensity and outcomes was not significant when one perceived themselves as winning the relationship, denoting that winning an intense rivalry buffers the negative effects of intense rivalries. These findings highlight the importance of considering the features of rivalry relationships and how they interact with one another. Moreover, while not a significant standalone predictor, this positions relative standing as a potentially meaningfully boundary condition that enables relationships from rivalry intensity to outcomes to emerge.

4.1. Implications for theory and practice

We extend understanding of how workplace relationships relate to psychological and work-family outcomes. More specifically, we advance workplace rivalry research, which has previously tended to focus on the motivating aspects of rivalries, by demonstrating that it can function as a workplace stressor. Based on resource theory, we find that workplace rivalry is a novel competition-driven antecedent of both WtFC and psychological detachment. Accordingly, rivalry relationships should be considered in addition to helpful relationships in future models that seek to explain how work relates to WtFC. One example of how this can be integrated is within resource theory (Michel et al., 2011) as results support that some relationships can drain resources rather than be a resource with implications for domain conflict. Moreover, while research has identified numerous antecedents of WtFC, the role of competition has largely been overlooked. These results suggest workplace competition may prevent individuals from fulfilling family roles via the resources they expend. Given that competitions are posited as being critical within the formation of the modern workplace (Lazear & Rosen, 1981), further theoretical development of the role that competitions, and rivalry specifically, play in relation to resources, the

work-family interface, and individual work and non-work outcomes is merited.

Moreover, through the meaningful interaction effects that were detected between rivalry status, rivalry intensity, and relative standing, we contribute to the theoretical development of rivalry relationships. The three-way interaction effects demonstrated relative standing plays a critical role when individuals are engaged in intense rivalry relationships as those who perceived themselves as losing experienced more harmful outcomes than those who were winning when intensity was high but not when intensity was low. Future research should consider accounting for rivalry intensity when relative standing is a variable of interest. Without consideration of the two aspects in tandem in the prediction of rivalry outcomes, significant and meaningful relationships between rivalry status and outcomes may go undetected, hindering our understanding of the full range of effects of workplace competition. Additionally, moderation results provide evidence rivalries may not be universally helpful or harmful. Indeed, rivalry status was not a significant direct predictor of WtFC across all with a rival, but the relationship was positive under certain considerations of rivalry intensity and relative standing. Accordingly, results support having a rival is not universally harmful or helpful in relation to wellbeing, but harmful or helpful based on various aspects of the rivalry.

We also further the understanding of the processes through which competitive workplace rivalry relates to outcomes. We positioned psychological detachment as a mediator of the relationship of rivalry status, and rivalry aspects, to work-family conflict and our findings indicate that involvement in a rivalry relationship may impede detachment from work with implications for employee recovery and psychological wellbeing (Sonnentag & Fritz, 2007). While past research has supported that rivalry is related to positive outcomes such as motivation (Kilduff, 2014), through lack of recovery it may also be related to negative performance outcomes, such as counter-productive work behaviors or incivility.

Additionally, individual careers, as described by tournament theory (Lazear & Rosen, 1981), unfold as a series of tournaments in which employees compete with one another. Our study reveals such competitions, when taking the form of a workplace rivalry, relate to lack of detachment from work and greater WtFC. Given the undesirable outcomes associated with lack of recovery and with WtFC (Allen et al., 2020), a practical consideration of the current findings is the extent that rivalry relationships are fostered within organizations. More specifically, individuals should be wary of viewing others as rivals and within competitive environments seek social support, or other buffering resources, to help them cope with related stressors.

Lastly, results linking workplace rivalry to work-family conflict provide an analysis of the degree competition within the workplace prevents one from meeting family demands. While competition is theoretically required for employees who wish to succeed per tournament theory (Lazear & Rosen, 1981), positioning competition as an innate force in the workplace, the relationship between WFC and competition has been largely ignored. This study not only adds to the literature on competition and the work-family interface but expands it by considering how factors of competition may be important considerations if we are to best predict work-family outcomes. Specifically, results related to WtFC imply the mere presence of competition does not inhibit one's family performance, but that competition can be harmful under certain circumstances, such as when the competition is intense.

4.2. Study limitations

Regarding limitations, perhaps the largest is that we did not employ causal methods, limiting our ability to firmly infer the order of variables in the proposed mediation model. While the order was selected based on theory, it is possible psychological detachment and WtFC, precede, rather than follow, experiences of rivalry. Moreover, while a multiple timepoint procedure was used, the requirements to test causality are not met, preventing causal claims, and better positioning this study as an initial test of a potential causal chain worthy of future study. To address this, future research should consider examining this hypothesized mediation framework using methods that better lend to analysis of causality, such as within-person longitudinal designs (Zyphur et al., 2020). Second, our sample is largely white, which makes generalizability to other demographic groups uncertain. Further, the sample primarily consists of individuals who work in STEM fields. Notably, STEM environments are traditionally competitive (Baldwin, 2009), making them ideal for examining workplace rivalry, but potentially limiting generalizability to other jobs, such as those with lesser education requirements.

Third, while we included relevant controls in line with recommendations by Spector and Brannick (2011), we could not conceivably control for all variables related to WtFC and detachment. With this in mind, it is plausible estimated relationships may be lessened if other control variables were included. To address this, future research could intend to replicate these findings using genetic confounds (i.e., twin studies) in order to better control for the wide range of dispositional differences (Allen et al., 2022). Moreover, greater consideration to the role family and/or job demands play as boundary conditions could be illuminating as it is plausible relationships may only emerge for those with greater overall demands. Fourth, our sample includes those without children living at home and those without a partner. While this population is typically included within vocational psychology research, they are often omitted from research on the work-family interface. Rationale for this is because it is thought that partners and dependents increase demands and thus the likelihood of WFC. Accordingly, our results may not generalize to other samples more commonly used in WtFC studies.

4.3. Future research directions

We connect the well-established work-family literature with the newly emerging literature on workplace rivalries. In doing so, we provide further evidence as to how workplace relationships and competition can spillover to work and non-work outcomes. Our findings suggest that additional research investigating links between rivalry relationships and non-work outcomes known to be associated with work-related stressors such as sleep quantity and quality, cigarette smoking, alcohol consumption, and life satisfaction also appears merited (e.g., French et al., 2019; Liu et al., 2009; Nauman et al., 2019). Further, since WtFC not only effects the employee, but also family members (Carlson et al., 2018; Ohu et al., 2018), these findings suggest that the harmful effects of rivalry

may not be limited to only the members of the rivalry but also to those around them. Accordingly, future research should consider further examination of rivalry in relation to others in workers' social networks.

Additionally, one of the chief findings of this study is the meaningful interaction between rivalry status, relative standing, and rivalry intensity. This provides support that future interventions related to rivalry may primarily be necessary for those with intense rivalries they are losing rather than all who have a rival. Further, while we examined two aspects of rivalries (intensity and relative standing), other aspects may also warrant attention. Some examples include the degree that one enjoys having a rival, whether one likes their rival, whether one has had rivalries previously, and whether one views the rivalry as mutual. Through consideration of these variables in one model, greater predictive validity may be achieved, providing value to researchers who seek to maximize our understanding of rivalry and its impact on the workplace.

Lastly, support was provided that the relationship between rivalry and WtFC was explained by a resource draining pathway. Building on this, future research may consider what other resource-reflecting mediators are at play for the relationship between rivalry and WtFC. One such variable may be negative affect or emotions as individuals deplete emotion regulation reservoirs to cope with the challenges brought forth by engaging in a rivalry, lessening one's ability to manage emotions when re-entering the family domain. Alternatively, variables reflecting non-psychological resources, such as sleep or physical health may warrant consideration as mediators. Moreover, studies that seek to test these mediation frameworks should consider designs that better lend themselves to tests of causality, such as within-person designs wherein participants provide responses on the focal variables at each timepoint to allow for testing of mean-level changes in the variables of interest. Through these avenues, an improved understanding of the links between workplace competition and family performance may be achieved, expanding our understanding of the underlying causes of domain conflict.

5. Conclusion

Drawing on resource theory we expand workplace rivalry research by linking it to work-to-family conflict via psychological detachment. Additionally, rivalry intensity and relative standing were tested. Our findings position rivalry as a workplace relationship that expends and drains resources and stands in contrast to other findings focusing on the benefits of rivalries. Through this, evidence is provided that the effects of rivalry do not stay in the office, but instead travel home with employees, relating to diminished psychological wellbeing and greater work-family conflict with implications for employee and family wellbeing.

CRedit authorship contribution statement

Joseph Regina: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, Writing – original draft, Project administration. **Tammy D. Allen:** Conceptualization, Methodology, Writing – review & editing, Supervision, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing interests that could have appeared to influence the results reported in this paper.

Data availability

Link to OSF repository that includes deidentified data and data cleaning/analysis source provided in Results section of manuscript

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