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ORIGINAL PAPER

Developing and Testing a Model of Dynamic Changes in Work–School Conflict and Workplace Deviance Over Time

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Abstract

Work–school conflict is a major stressor for many college students who have paid jobs while in college. Although work–school conflict experience is dynamic, the extant research has predominantly cast it and its consequences as between-person phenomena from a static perspective, ignoring its inherent temporal nature. As a result, little is known about the intra-individual changes in work–school conflict and their associated consequences as implied by the related theory. Drawing on the stressor–emotion model of counterproductive work behavior, we conducted a longitudinal weekly diary study to examine how work–school conflict change can predict changes in negative emotions and workplace deviance (i.e., the change-to-change effects). We also tested core self-evaluation, time management skill, and financial well-being as moderators of the proposed mediated relationship. Results from latent change score modeling showed that upward work–school conflict change had a positive relationship with upward workplace deviance change via upward changes in negative emotions. Further, time management skill and financial well-being weakened the indirect relationships between upward work–school conflict change and upward workplace deviance change. However, the moderating nature of core self-evaluation on the indirect relationship contrasted with our hypothesis. Implications for theory and future research are discussed along with implications for organizations and college institutions.

Keywords Work–school conflict · Negative emotions · Workplace deviance · Core self-evaluation · Time management

Many college students in the USA work while in college to pay for their school—a necessity for many owing to increasing college tuition. Recent statistics show that 43% of full-time students and 81% of part-time students were employed while they were enrolled in college (National Center for Education Statistics, 2020). The prevalence of student workers has resulted in a pressing need to better understand the experiences of this working population (Choo et al., 2021). One common but critical experience of this understudied population is the interrole conflict between the work and school domains. That is, student workers often experience *work–school conflict* (WSC) when paid work interferes with their ability to meet the demands of school (Butler, 2007; Markel & Frone, 1998).[1] WSC has been found to be an important role stressor associated with poor school outcomes and attitudes and ill-being (see Choo et al., 2021; Park & Headrick, 2017, for reviews).

Although the harmful consequences of WSC have been demonstrated, extant research remains limited in two important ways. First, past research has suggested that interrole conflict in one domain (e.g., family) could affect important outcomes in the other (e.g., work) domain (Amstad et al., 2011; Laughman et al., 2016). This suggests that student workers experiencing WSC may not only perform poorly in the school domain but also become less productive in the work domain. Thus, it is important to examine

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[1] Although student workers may experience other directional or other forms of role conflict (e.g., school-to-work, family-school conflict), we focus on work-to-school conflict because our study investigated traditional college students who identify themselves primarily as students rather than workers.

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the work-related behavioral consequences of WSC so that we can help raise awareness about WSC among university stakeholders as well as organizational stakeholders to support student workers (Choo et al., 2021). Further, despite the range of work-related outcomes of WSC considered in the literature, deviance has not been examined (Park & Headrick, 2017). This is an important omission because deviance causes significant economic costs for organizations (Taylor, 2007). As student workers tend to identify themselves primarily as students, they would view workplace deviance as a behavioral effort to "get back" from work when work interferes with their educational attainment goals and identities.[2] Accordingly, studying deviance as an outcome of WSC has implications to manage the future workforce (Huiras et al., 2000; Loughlin & Barling, 2001; Martin et al., 2009).

A second limitation is that past research has primarily treated WSC and its consequences as static, between-person phenomena, ignoring their inherent dynamism over time (Park & Headrick, 2017). Although the prior research is informative, it portrays an incomplete picture of WSC's impact. This is evidenced by an increasing body of research showing that people's experiences of interrole conflict are dynamic (Allen & Martin, 2017; Shockley & Allen, 2015; Verbruggen et al., 2020), and that the nature of change (i.e., decrease or increase) over time has important implications (Allen et al., 2019; George & Jones, 2000; Mitchell & James, 2001). To illustrate this, consider two students who report the same, high levels of WSC. All else being equal, one may expect them to report similar levels of negative emotional reactions to their WSC; however, this snapshot of WSC overlooks its change over time. That is, one student's perceived WSC is trending downward over time (e.g., from very high to high) and therefore the student may react more positively (or less negatively) despite the high levels of WSC. Conversely, the other student is experiencing an upward trend of WSC (increasing from moderate to high) and thus may react more negatively. In other words, the change in WSC—i.e., increases or decreases in WSC experience over time—could impact student workers' reactions above and beyond the *level* of WSC. In short, by overlooking this dynamism, extant research provides only a partial or potentially inaccurate view of how WSC is experienced and unfolds across time.

Given the above considerations, the present study examines how *change* in WSC affects subsequent *changes* in negative emotions and workplace deviance. Workplace deviance refers to negative voluntary behaviors that violate organizational norms and harm the organization, its members, or both (Bennett & Robinson, 2000; Robinson & Bennett, 1995).[3] For example, *organizational deviance* includes coming in late to work without permission, putting in little work effort, and neglecting to follow the supervisor's instructions, while *interpersonal deviance* includes cursing at someone and acting rudely toward others at work. The stressor–emotion model of counterproductive behavior views deviance as behavioral strain reactions to negative emotions caused by stressful experiences (Fox & Spector, 2006; Spector & Fox, 2005). Because affective processes are critical to unfolding stress experiences, we examine interceding changes in negative emotions as a possible mechanism explaining the link between WSC change and workplace deviance change. Further, according to the stressor–emotion model, the key to ameliorating stress processes is one's perception of control over the environment. Thus, we test the theoretical notion that student workers' control-related characteristics, such as core self-evaluation (i.e., fundamental appraisals that individuals make about their self-worth and capabilities), time management skill, and financial well-being, may help them better deal with their accelerating WSC experiences (i.e., moderating/weakening the path, ΔWSC $\rightarrow$ Δ negative emotions).

In doing so, this study aims to contribute to theory and research on WSC in the following ways. First, we extend previous research by investigating deviance as an important work-related behavioral consequence of WSC. Our results can illustrate the importance of the performance cost of students' WSC experiences, beyond its commonly examined school and personal well-being outcomes in the literature (Butler, 2007; Choo et al., 2021; Markel & Frone, 1998). In this respect, this study helps to raise organizations' awareness of student workers' WSC experiences and inform human resource management practices and policies that can further benefit student workers.

Further, departing from the past research on the static relationship between WSC and its outcomes, we test how upward change in WSC is associated with subsequent upward changes in workplace deviance. More specifically, we use an advanced method of dynamic mediation modeling to examine fundamental processes underlying stress experiences (Bliese et al., 2017; Liu et al., 2016) and illustrate the temporal dynamics of WSC across time. In other words, the current examination of WSC change and its resultant consequences can help to understand WSC experiences more comprehensively and further provide theoretical and empirical implications of WSC change over time. This approach also allows us to address the research calls to examine longitudinal changes in WSC and the associated consequences (Park

[2] We would like to thank our anonymous reviewers for sharing this thought with us.

[3] Workplace deviance has also been identified as counterproductive work behaviors (see Carpenter & Berry, 2017, for a review).

& Headrick, 2017) and therefore contribute to research on interrole conflict more broadly (Allen et al., 2019; Shockley & Allen, 2015).

Finally, we also contribute to research on WSC by investigating core self-evaluation, time management skill, and financial well-being as important boundary conditions for the effect of WSC change over time. Testing them allows us to respond to previous calls to examine important personal characteristics and environmental factors as moderators of the associations between WSC and important outcomes (Park & Headrick, 2017). WSC is an interrole stressor that may be difficult to completely remove because student workers usually have limited resources (e.g., time, energy) to fulfill demands across multiple life domains (Markel & Frone, 1998). Understanding the moderating effects of core self-evaluation, time management skill, and financial well-being, which may be important to student workers' perceived control over their WSC experiences, can help university and organizational stakeholders better support student workers and reduce the negative consequences of WSC (Choo et al., 2021; Park & Headrick, 2017).

Theoretical and Conceptual Background

The Implications of WSC Change

WSC can be viewed as a contextualized interrole conflict, which involves interference in the school role by work-related role demands and responsibilities (Butler, 2007; Cinamon, 2018; Markel & Frone, 1998). Similar to general experiences of interrole conflict in the work and nonwork life, which are dynamic in nature (Allen et al., 2019; French & Allen, 2020), student workers may experience a number of different episodes that contribute to their WSC experiences. These different episodes may inform individuals when WSC occurs across time and in relation to their past WSC experiences. Supporting this, it has been suggested that individuals use past experiences as a reference when perceiving and reacting to their current work and life experiences (Ariely & Carmon, 2003; Hsee & Abelson, 1991). In other words, in the context of work-school life, student workers could become more sensitive to *changes* in WSC and their future states, and their subsequent behaviors can be impacted by the trajectory of WSC experiences that unfolds over time (e.g., downward WSC change is less stressful than upward WSC change, even when the average of those WSC experiences is the same). However, past research focusing on the levels of WSC would fail to tease out such "rectifying/correctional" properties of downward change in WSC. People do not simply develop stress perceptions of interrole conflict by averaging past experiences, but instead, use the dynamic characteristics of their interrole conflict experiences to construct their stress perceptions over time. In other words, when their typical patterns of experience change, those changes provide meaningful information beyond their current and past experiences (e.g., Hsee & Abelson, 1991; Taylor et al., 2017). Accordingly, WSC *change* may play a critical role in the stress process.

Similar to recent longitudinal studies (e.g., Ng et al., 2021; Taylor et al., 2017), change reflects "the extent to which an individual's perceived level of a dynamic process shifts from one point in time to another (e.g., week to week)" (Taylor et al., 2017, p. 647). Considering the natural setting where students' coursework is mostly organized by week with a regular Monday–Friday schedule, we examine WSC change across weeks. As students often take several courses in a given semester, their coursework varies in terms of weekly school demands (Park & Sprung, 2015), while the work demands in their jobs also change weekly (Wood et al., 2013). As such, given the typical patterns of work-school life, WSC experiences can change from week to week. Supporting this, scholars have recommended a weekly longitudinal research design when studying processes such as the accumulation of interrole conflict experiences (Allen et al., 2019). Further, research has demonstrated that negative emotions and workplace deviance change on a weekly basis (e.g., Griep & Vantilborgh, 2018; Rosen et al., 2020). Taken together, a shorter time frame (e.g., weekly) can provide meaningful insights into the dynamic relationship between stressors, negative emotions, and deviance (Allen et al., 2019; Matthews & Ritter, 2016; Shockley et al., 2012).

The Stressor–Emotion Model of Workplace Deviance

The stressor–emotion model (Fox & Spector, 2006; Spector & Fox, 2005) predicts the associations between WSC change and changes in workplace deviance. According to this model, perceived or experienced stressors in work environments can lead to negative emotional reactions. WSC, by placing incompatible demands and thwarting goal achievements, creates a stressful situation for student workers (Butler, 2007; Markel & Frone, 1998; Park & Sprung, 2013, 2015). Individuals usually experience negative emotions when they perceive stressful situations as threatening and harmful (Lazarus, 1999). Such negative emotions are commonly recognized as strains that tend to develop in the early stage of stress processes before subsequent behavioral strain responses emerge (Jex & Beehr, 1991; Spector, 1998). Because individuals are often motivated to release and reduce negative emotions by engaging in deviant behaviors, negative emotional responses can mediate the effects of work stressors on behavioral strains (Fox & Spector, 2006; Spector & Fox, 2005).

Although previous empirical research on the stressor-emotion model rarely considered the dynamic changes in

perceived stressors and their unfolding stress processes, this theoretical model inherently implies dynamic processes in which stressors and their behavioral consequences play out across time (Spector & Fox, 2005). In other words, it is *change* in a perceived stressor that contributes to *change* in deviant behaviors through *change* in negative emotions. As such, it is not only necessary but also important to take into account the roles of change, otherwise "theory is impoverished" (Mitchell & James, 2001, p. 532). Moving beyond static levels, research has recognized the dynamic nature of stress and its affective processes (Liu et al., 2016; Spector, 1998; Su et al., 2022; Tetrick & Quick, 2011; Zapf et al., 1996), pointing to the possibility that change in WSC will lead to subsequent changes in workplace deviance through changes in negative emotions.

Further, this dynamic stress process of unfolding stressors and behavioral strains over time can differ across individuals (Fox & Spector, 2006; Spector & Fox, 2005). According to the theory, perceived control plays an important role in stress processes because individuals are likely to perceive controllable situations as less stressful, and thus they would experience fewer negative emotions (Spector, 1998). Important to note, perceived control helps individuals act in ways that can impact stressful situations more directly and/or better cope with situational stressors (Spector, 1998). It enables people to address stressful situations by making them less threatening and thus experience fewer negative emotions before behavioral strain occurs (Spector, 1998). In the current study, we examine core self-evaluation, time management skill, and financial well-being as important personal and environmental factors that are highly relevant to students' perceived control over their work-school situations.

Thus, we propose and test a dynamic mediation model to examine the associations of changes between WSC, negative emotions, and workplace deviance. Importantly, we further test core self-evaluation, time management skill, and financial well-being as moderating factors given that individuals high in these aspects are expected to be able to better address and adapt to WSC change and hence will be less likely to have increased negative emotions triggering deviant work behaviors (Fox & Spector, 2006; Spector, 1998).

Applying a Latent Change Score Framework to Examine Change in WSC

Given the emphasis on the implications of WSC change, we employ a latent change score (LCS) approach (Grimm et al., 2012; McArdle, 2009) to more effectively examine WSC change in relation to changes in workplace deviance via interceding changes in negative emotions. Besides having the same advantages as other popular analytic techniques for longitudinal data, LCS models avoid the disadvantages of both cross-lagged models (which cannot capture the patterns of growth and decline) and latent growth models (which can test the associations among the changing trends of different variables but cannot provide information about the causal direction of the longitudinal relationships; Ferrer & McArdle, 2010; Liu et al., 2016). In LCS models, changes are considered as the variables of interest and decomposed into different components such that hypotheses related to change scores can be examined while controlling for other unwanted sources of change. The benefits are magnified with multivariate LCS models, which evaluate two or more dynamic change processes within longitudinal data while considering interrelationships between multivariate change processes (McArdle, 2009).

Various sources/forms of change could be considered when studying how a dynamic process changes over time (e.g., Jones et al., 2016; McArdle & Grimm, 2010). As discussed by Taylor et al. (2017), "the *constant change* associated with a dynamic process reflects the amount of within-construct fluctuation per one-unit change in time, and its *proportional change* refers to the time-sequential fluctuation that is proportionate to the construct's previous true-score level" (p. 647). Together, these two sources of change indicate whether changes in the construct are upwardly accelerating or downwardly decelerating over time. The set-up of the LCS model allows us to control for these two sources of change, while our hypotheses focus on the temporal relationships between multiple constructs, i.e., how upward WSC change predicts upward changes in workplace deviance via upward changes in negative emotions over time.

There are two other sources of change—namely, *level-to-change* effects and *change-to-change* effects—when examining relationships that occur across more than one construct (i.e., WSC, negative emotions, and workplace deviance). The level-to-change effects occur when change in one construct (e.g., negative emotions) is determined by the previous level of another construct (e.g., WSC). Past research has revealed that changes in psychological health were predicted by the previous level of WSC (Park & Sprung, 2013). However, because WSC is a type of interrole conflict experience that is highly dynamic (Allen et al., 2019; French & Allen, 2020), previous research was limited in its oversight of the dynamic changes in WSC and failed to address how changes in WSC across time can predict changes in important outcomes above and beyond the level of WSC (i.e., the change-to-change effects). Theoretically, the stressor-emotion model highlights a dynamic process in which increases in experienced stressors would result in increases in behavioral consequences through upward changes in negative emotions (Spector & Fox, 2005). To accurately test this dynamic stress process, it is important to focus on the change-to-change relationships which enable us to capture whether change in one construct (e.g., WSC) predicts subsequent change in another construct (e.g., negative emotions).

Changes in WSC, Negative Emotions, and Workplace Deviance

As both work and school roles are task and achievement-oriented (Butler et al., 2010), upward change in WSC indicate that students are more frequently running into situations that interfere with their important goals (e.g., maintaining good performance and academic standing) or essential activities (e.g., attending meetings and studying for exams), resulting in greater negative emotional reactions. Upward change in WSC can be interpreted as more threatening to their work and school life because upward changes in the WSC trajectory are likely to signal that the balance between work and school is deteriorating. As worsening interrole conflict experiences may lead individuals to believe they have fewer capabilities to improve their situations, student workers can perceive upward WSC change as more threatening and thus experience upward changes in negative emotions.

Furthermore, according to the stressor–emotion model, negative emotions are critical in that they can elicit a powerful motivation in individuals to release and eliminate them (Spector, 1998). As negative emotions (e.g., hostility, distress) accumulate over time, people are increasingly likely to engage in deviant behaviors (e.g., Matta et al., 2014; Yang & Diefendorff, 2009). As such, upward changes in negative emotions will lead individuals to increase their workplace deviance, with such deviance serving as behavioral reactions to release those emotions (Penney & Spector, 2007).

Taken together, we expect that upward changes in negative emotions will mediate the effects of previous upward change in WSC on subsequent upward changes in workplace deviance. Supporting this, scholars have observed that "continued exposure to emotion-arousing events will heighten the likelihood for the person to engage in behavioral response" (Spector & Fox, 2002, p. 270). From a dynamic perspective, upward WSC change may prompt student workers to extrapolate from their increasing WSC experiences and predict that their work and school life will be increasingly threatened (Ariely & Carmon, 2003), which in turn increases the degree to which they experience negative emotions. Consequently, they are more likely to engage in deviance to release negative emotions, prompting a subsequent increase in workplace deviance. Thus, based on the theorizing and relevant literature, we hypothesize:

Hypothesis 1: Upward change in WSC indirectly affects subsequent upward changes in workplace deviance (i.e., interpersonal and organizational deviance) via intermediating upward change in negative emotions.

The Moderating Roles of Personal and Environmental Factors

In this section, we first propose two personal factors, *core self-evaluation* and *time management skill*, as boundary conditions for the effect of WSC change on changes in negative emotions. Given that student workers who believe in their capability of handling WSC may be less likely to perceive it as threatening (McNall & Michel, 2011), core self-evaluation is tested as a specific dispositional factor that is related to students' perceived control over their work-school situations. Also, because time management skill may help student workers effectively use their time and better achieve multiple goals in time, it may affect their control over task conducts across work and school life. Next, we then propose an environmental factor, *financial well-being*, as another boundary condition as student workers with better financial well-being may be more able to cope with upward WSC change and may thus react less emotionally. Beyond the theoretical reasoning, we believe examining their moderating effects will provide critical practical implications because core self-evaluation and time management skill could potentially be improved through interventions, and financial resources can be enhanced via better policies and programs in colleges and organizations.

Core Self-evaluation

Core self-evaluation reflects one's fundamental evaluations of self-worth, competence, and capabilities (Judge et al., 1997). This construct consists of internal locus of control (i.e., a belief system that outcomes and rewards in life are due to one's own actions rather than fate and luck), self-esteem (i.e., an overall appraisal of one's self-worth), self-efficacy (i.e., a belief about one's capability to perform and cope successfully in task domains), and emotional stability (i.e., a stable tendency to feel calm and secure across different situations; see Chang et al., 2012; Johnson et al., 2008, for reviews).

Individuals with high core self-evaluation believe that they can achieve goals and perform successfully in general, which may enable them to perceive control over potentially threatening or stressful situations (Bandura, 1997). They tend to have a belief in their abilities to resolve problems and cope with stressful situations (Chang et al., 2012), which suggests that students with high core self-evaluation may view aspects of work and school domains in a positive manner. Related to this, core self-evaluation is associated with healthier coping (more problem-focus and less avoidance; Kammeyer-Mueller et al., 2009), which may help to gain a sense of control. Congruently, student workers with high core self-evaluation are more likely to perceive and acquire resources such as seeking school-specific support

from their family and work, so they may have more effective coping strategies and better resources to deal with interrole conflict across work and school domains (cf. McNall & Michel, 2017; Wang et al., 2022). In short, individuals with high core self-evaluation tend to perceive work and life events more positively, look for situations that improve role fulfillment, and work hard to minimize negative situations (Johnson et al., 2008; Judge et al., 1997, 2003). These prior findings further suggest that students with high core self-evaluation can view WSC under their control, such that upward WSC change has less impact on their experiences of negative emotions. In line with the theory (Spector, 1998; Spector & Fox, 2005), core self-evaluation is an important disposition related to the control concept, allowing student workers to react less emotionally to stressful conditions such as increased WSC. Thus, we expect that upward change in WSC will have less impact on student workers with high core self-evaluation; in contrast, those low in core self-evaluation will likely be more vulnerable to upward change in WSC and experience upward changes in negative emotions.

Hypothesis 2: Core self-evaluation moderates the first stage of the dynamic mediated relationship, such that it weakens the effect of upward change in WSC on subsequent upward *negative emotions changes.*

Time Management Skill

Time management skill can be defined as "behaviors that aim at achieving an effective use of time while performing goal-directed activities" (Claessens et al., 2007, p. 262), including goal setting and prioritization, mechanics of time management, and preference for an organization (Macan, 1994; Macan et al., 1990). Goal setting and prioritization involve decisions about which goals people want to accomplish each day and what is most important (Jex & Elacqua, 1999). The mechanics of time management comprise behaviors that are typically recommended for effective time management, such as making a "to do" list (Peeters et al., 2005).

Student workers with better time management skill tend to be more stress-resistant in demanding work-school situations. In the face of upward WSC change, which places high demands on students' time usage (Butler, 2007; Markel & Frone, 1998), time management skill enables student workers to be more effective and strategic in their time allocation. Also, time management skill may allow student workers to be better at goal setting and prioritizing their tasks. With these important benefits of time management skill, student workers may regain perceived control of time and demands across their role domains. In fact, empirical research has found that time management skill helps to reduce strains through perceived control of time (Adams & Jex, 1999; Macan, 1994). Consistent with the previous findings and the theory (Spector, 1998; Spector & Fox, 2005), time management skill will help student workers acquire and exercise control over their work-school situations through their effective and strategic time allocation and usage. As such, those with better time management skill will experience fewer increases in negative emotions when facing upward WSC change.

Hypothesis 3: Time management skill moderates the first stage of the dynamic mediated relationship, such that it weakens the effect of upward change in WSC on subsequent upward negative emotions changes.

Financial Well-being

Financial well-being is defined as "the perception of being able to sustain [the] current and anticipated desired living standard and financial freedom" (Brüggen et al., 2017, p. 229). Student workers with better financial well-being tend to have better control over their financial needs, an important reason why they choose to work (Butler, 2007), and thus they may fare better in stressful situations (e.g., Probst et al., 2018; Sinclair & Cheung, 2016).

Better financial well-being enables people to accomplish goals, alleviates dependence and vulnerability (Ennis et al., 2000), and enhances their control over interrole conflicting situations (Odle-Dusseau et al., 2018). Student workers with better financial well-being may perceive that they have greater control over whether they would take on job tasks with increasing school demands. For instance, financially sound student workers may be able to decide how long they would like to work for their paid job when to reduce their work hours, and how to cater to school demands and needs. This suggests that even in the face of upward change in WSC, student workers with greater financial well-being are likely to better cope with situations because they have more options and fewer limitations. Additionally, financial well-being gives student workers more discretion to take opportunities for regulating their negative emotional reactions to upward change in WSC, such as deciding to take a break to recover from stressful work-school situations. In all, these possible benefits of financial well-being can help student workers cope with demands across different domains (Creed et al., 2015) and thus they can reduce emotional reactivity to upward change in WSC.

Hypothesis 4: Financial well-being moderates the first stage of the dynamic mediated relationship, such that it weakens the effect of upward change in WSC on subsequent upward negative emotions changes.

Method

Sample and Procedure

We collected the data in two phases: (1) an initial screening and background survey assessing demographics and moderator variables and (2) a weekly diary for five consecutive weeks (beginning 2 weeks after the initial survey) in which respondents reported information on our study variables every Friday. Our sampling criteria specified that eligible respondents must be full-time undergraduate students (minimum age of 18 years) with a paid job. A total of 345 student workers from three universities in the northeastern USA participated in the initial survey pre-COVID-19.[4] These students were recruited from the psychology department within a human subject pool management system (i.e., SONA systems) and from several undergraduate courses as a fulfillment of research credits or for extra course credits. We removed 178 cases from the initial participant group because they 1) did not answer any of the weekly diary surveys ($n = 107$), or 2) were disqualified for participation (i.e., no paid job, $n = 26$), or 3) submitted responses in the undesignated time ($n = 45$).[5] Thus, our final sample comprised 167 student workers, yielding a response rate of 48.41%. They provided 754 usable weekly data points out of a possible total of 835 (167 × 5 weeks) weekly observations.

Both men (56.90%) and women (43.10%) were well represented in our sample, and they identified themselves as follows: White/Caucasian (57.10%), African American (14.10%), Hispanic (14.10%), Asian/Pacific Islander (11.00%), and other (3.70%). Participants worked in various service occupations, including food/restaurants (9.60%), retail/service (58.10%), administration/IT (10.80%), education/childcare (13.80%), and several others (7.80%). A variety of majors were represented, including psychology (45.50%); health and science (26.30%); language, arts, and other social studies (14.40%); and others (13.80%). Freshman (29.90%), sophomore (28.10%), junior (24.00%), and senior (13.80%) students participated. On average, they were 20.56 years old ($SD = 4.57$), worked 19.61 h/week ($SD = 11.79$, 8 ~ 56), and were registered for 14.64 credit hours ($SD = 2.63$).

[4] We tested potential differences in financial well-being, time management skill, and core self-evaluation among participants from the three universities. No significant differences were found in these key variables.

[5] A comparison between the final sample and those removed showed that the two groups did not systematically differ regarding demographic characteristics (i.e., age, average weekly work hours, credit hours) and the moderating factors (i.e., core self-evaluation, financial well-being, time management skill).

Measures

WSC, negative emotions, and workplace deviance were assessed each week. Demographic information and moderator variables were assessed in the initial survey. A five-point frequency scale (1 = *never* to 5 = *very often*) was used unless otherwise noted.

WSC

We used Markel and Frone's (1998) five-item scale to assess WSC during each week. Example items include "This week, because of my job, I went to school tired" and "This week, I spent less time studying and doing homework because of my job." Across the surveyed weeks, the mean Cronbach's alpha was 0.87 (range = 0.82–0.92).

Negative Emotions

We used 10 negative emotion descriptors from the Positive and Negative Affect Schedule (Watson et al., 1988) to measure negative emotions during the week. Participants were instructed to rate how often they experienced each of the 10 emotions (e.g., nervous, hostile, upset, distressed). Across the 5 weeks, the mean Cronbach's alpha was 0.90 (range = 0.89–0.92).

Workplace Deviance

We used Bennett and Robinson's (2000) 19-item measure to assess interpersonal (7 items) and organizational deviance (12 items) during the week. For interpersonal deviance, sample items are "Acted rudely toward someone at work" and "Said something hurtful to someone at work." For organizational deviance, sample items are "Put little effort into my work" and "Came in late to work without permission." Across the 5 weeks, the mean Cronbach's alphas were 0.89 for interpersonal deviance (range = 0.86–0.92) and 0.86 for organizational deviance (range = 0.84–0.88).

Core Self-evaluation

We used the 12-item Core Self-Evaluation scale (Judge et al., 2003), which comprises self-esteem, generalized self-efficacy, emotional stability, and locus of control. An example item is "When I try, I generally succeed" (1 = *strongly disagree* to 5 = *strongly agree*). Cronbach's alpha was 0.86.

Time Management Skill

We used the 10-item version of time management behavior scale (Macan, 1994), shortened by Peeters et al. (2005), to measure time management skill. Participants were instructed

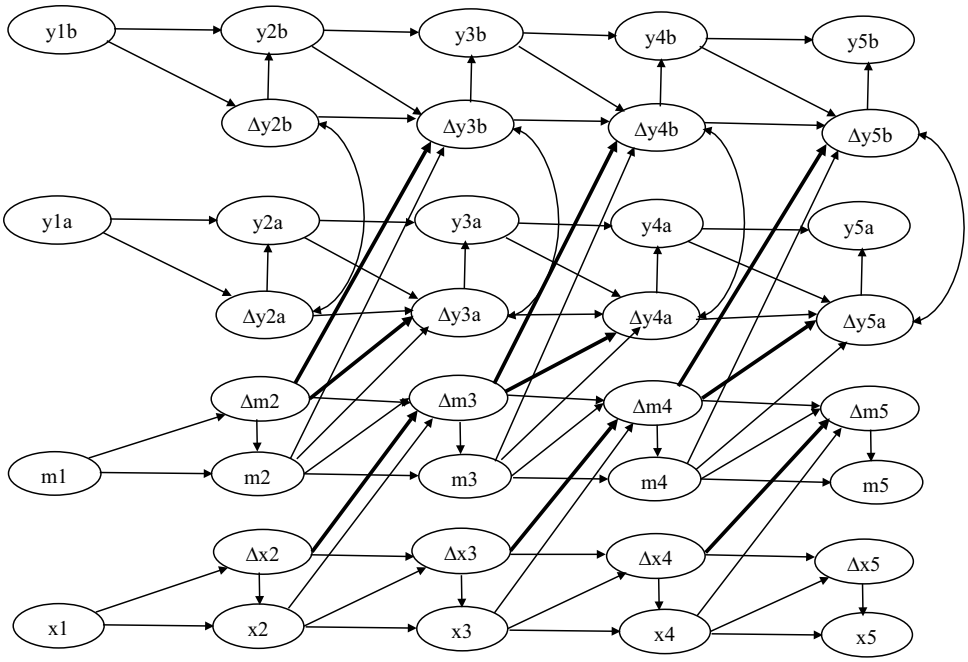


Fig. 1 Multivariate mediated latent change score (LCS) Model. Δx = change in work–school conflict, Δm = change in negative emotions, Δya = change in interpersonal deviance, Δyb = change in organizational deviance. Paths related to hypotheses are shown in bold. For clarity of the figure, the measurement model of each construct, latent intercepts, latent constant change rate, and their paths and covariances are not shown

to rate how often they engaged in each of the time management behaviors in general (e.g., "review work activities" and "schedule time daily") on a five-point scale (1 = *seldom* to 5 = *very often*). Cronbach's alpha was 0.88.

Financial Well-being

We used the InCharge Financial Distress/Financial Well-Being Scale (Prawitz et al., 2006), a widely used measure (Brüggen et al., 2017; Froidevaux et al., 2020), to measure financial well-being. It has sound validity and reliability (Froidevaux et al., 2020; Prawitz et al., 2006). Scores based on the average of summed responses to the eight items (e.g., How do you feel about your current financial situation?) represent a continuum from 1 (lowest financial well-being) to 10 (highest financial well-being). Cronbach's alpha was 0.91.

Analytical Approach

LCS Model

Our study used multivariate LCS models (see Fig. 1) to examine change processes between multiple constructs. Specifically, we used the multivariate LCS approach in Mplus Version 8 (Muthén & Muthén, 1998–2017), with the full-information maximum likelihood estimation to handle missing data (Newman, 2014). Given the complexity of our models, we followed McArdle (2009) and Taylor et al. (2017) to use single-indicator manifest variables and constrain change parameters to be equal.

As explained in the introduction, we are primarily interested in the change-to-change relationships between constructs when testing our dynamic mediation model. Besides the cross-process change-to-change parameters, we specified the within-process change-to-change parameters, which regressed subsequent changes on prior changes in the same process (Grimm et al., 2012). In testing our hypotheses, we followed common practices to control for the constant and proportional change components, the within-process change-to-change components, and the level-to-change components (Grimm et al., 2012; McArdle, 2009; Taylor et al., 2017). Changes in interpersonal deviance and changes in organizational deviance were correlated at the same time point. We tested the dynamic mediation effects with case-based bootstrapping and 95% bias-corrected confidence intervals (BC CI) using 2,000 bootstrapped samples (Selig & Preacher, 2009). After establishing the dynamic mediation effects in the multivariate mediated LCS model, we added moderators to test Hypotheses 2–4. All moderators were mean-centered and added to the model by using the XWITH function in Mplus to create latent interaction terms. We applied the latent moderated structural approach (Klein & Moosbrugger, 2000) in Mplus to examine latent interactions. To clarify the nature of the identified moderator, we calculated simple slopes at high (+ 1 *SD*) and low (–1 *SD*) levels of the moderator. As case-based bootstrapping is unavailable in Mplus for models with latent interactions, we used Monte Carlo bootstrapping (Preacher & Selig, 2012) to compute the confidence intervals associated with the conditional indirect effects.

Table 1 Descriptive statistics and correlations between study variables

Variables	*M*	*SD*	1	2	3	4	5	6	7
1. Work–school conflict	2.54	.98	—	.57**	.19*	.25**	–.27**	–.04	–.27**
2. Negative emotions	2.25	.81	.52**	—	.19*	.32**	–.34**	–.22**	–.55**
3. Interpersonal deviance	1.22	.50	.18**	.20**	—	.74**	–.01	–.21**	–.01
4. Organizational deviance	1.33	.46	.23**	.31**	.68**	—	–.09	–.39**	–.20*
5. Financial well-being	5.50	2.13					—	.07	.38**
6. Time management skill	3.70	.74						—	.43**
7. Core self-evaluation	3.41	.66							—

Note. Correlations above the diagonal represent between-individual scores—that is, individuals' mean variables ($n = 161 - 167$ due to missing data in between-individual variables). Correlations below the diagonal represent within-individual scores—that is, individual-mean-centered variables, based on the five weeks' responses ($n = 728 - 754$)

*$p < .05$

**$p < .01$

Table 2 Model fit statistics for testing discriminant validities and measurement invariance

Model	χ^2	*df*	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR
Measurement model (4 factors)							
Week 1	113.67**	71	0.95	0.94	0.06	[0.04, 0.09]	0.06
Week 2	91.06**	71	0.98	0.98	0.04	[0.00, 0.07]	0.04
Week 3	107.40**	71	0.98	0.97	0.06	[0.03, 0.08]	0.04
Week 4	99.84**	71	0.97	0.96	0.05	[0.03, 0.08]	0.05
Week 5	91.47**	71	0.98	0.98	0.04	[0.00, 0.07]	0.05

Note. *CFI* confirmatory fit index; *TLI* Tucker–Lewis index; *RMSEA* root mean square error of approximation; *SRMR* standardized root mean squared residual

*$p < .05$

**$p < .01$

Results

Table 1 reports descriptive statistics and within- and between-person correlations among the study variables.

Preliminary Results

Discriminant Validity

For each data wave, omnibus CFAs were conducted to compare the expected four-factor measurement model (i.e., WSC, negative emotions, interpersonal deviance, and organizational deviance) with a series of alternative models. Following previous LCS studies (e.g., Allemand et al., 2007; Hudson et al., 2012), we created parcels to sustain a reasonable ratio of degrees of freedom and sample size and to acquire reliable estimates (Little et al., 2002, 2013). Research suggests that parceling is less concerned when parcels are formed from strictly unidimensional constructs (Bandalos & Finney, 2001; Meade & Kroustalis, 2006). We created three parcels by random assignment of items of negative emotions (i.e., parcel 1 has three items, parcel 2 has three items, and parcel 3 has four items), interpersonal deviance (i.e., parcel 1 has two items, parcel 2 has two items, and parcel 3 has three items), and organizational deviance (i.e., parcel 1 has four items, parcel 2 has four items, and parcel 3 has four items). The five original items were used for WSC. As shown in Table 2, the four-factor model had an acceptable fit across time. Comparisons with alternative models suggested that the four-factor model fit the data best.[6]

Test of Temporal Invariance

We further examined the four measures for temporal invariance by comparing the model with free loadings against the model with loadings of each indicator constrained to equality over time (Meier & Spector, 2013). As shown in Table 3, all four measures were found to be temporally invariant across the study span.

[6] We also tested the discriminant validity between interpersonal deviance and organizational deviance in isolation from the other measures. Consistent with Bennett and Robinson (2000), the results show that the two-factor model has a better fit to the data than the single-factor model, suggesting interpersonal deviance and organizational deviance are distinct constructs.

Table 3 Model fit statistics of temporal invariance

Constructs and models	χ^2	*df*	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	$\Delta\chi^2$	Δdf
Work–school conflict									
Free loadings	293.15**	215	0.97	0.95	0.05	[0.03, 0.06]	0.08	—	—
Longitudinal constraints on loadings	309.21**	231	0.97	0.96	0.05	[0.03, 0.06]	0.08	15.15	16
Negative emotions									
Free loadings	58.70*	50	0.99	0.99	0.03	[0.000, 0.07]	0.04	—	—
Longitudinal constraints on loadings	71.93*	58	0.99	0.98	0.04	[0.000, 0.07]	0.05	14.43	8
Interpersonal deviance									
Free loadings	82.59**	50	0.98	0.95	0.07	[0.04, 0.09]	0.04	—	—
Longitudinal constraints on loadings	94.14**	58	0.97	0.95	0.07	[0.04, 0.09]	0.06	11.73	8
Organizational deviance									
Free loadings	87.98**	50	0.97	0.94	0.07	[0.05, 0.10]	0.03	—	—
Longitudinal constraints on loadings	92.73**	58	0.98	0.96	0.06	[0.04, 0.09]	0.05	7.44	8

Note. *CFI* confirmatory fit index; *TLI* Tucker–Lewis index; *RMSEA* root mean square error of approximation; *SRMR* standardized root mean squared residual

*$p < .05$

**$p < .01$

***$p < .001$

Hypothesis Testing

The multivariate LCS model had an acceptable fit to the data ($\chi^2 = 364.915$, $df = 164$, CFI = 0.934, TLI = 0.924, RMSEA = 0.086, RMSEA 90% CI [0.074, 0.097], SRMR = 0.058).[7] The results showed that upward WSC change was positively related to subsequent upward changes in negative emotions the following week (ξ = 1.394, $p < 0.05$). Meanwhile, the level-to-change parameter from the prior level of WSC to change in negative emotions was not significant, indicating that the pattern of change in negative emotions was impacted by the prior change in WSC, but not by the level of WSC. Further, upward change in negative emotions was positively related to subsequent upward changes in both interpersonal deviance (ξ = 1.593, $p < 0.001$) and organizational deviance (ξ = 0.613, $p < 0.01$) the following week. Also, the level-to-change parameters from the prior level of negative emotions to changes in interpersonal deviance and organizational deviance were not significant. We then tested the indirect effect of upward change in WSC on upward changes in interpersonal deviance and organizational deviance via the upward change in negative emotions. The results supported the indirect effects of upward change in WSC on upward changes in interpersonal deviance (indirect effect [IE] = 2.220, 95% BC CI = [1.085, 4.814]) and organizational deviance (IE = 0.855, 95% BC CI = [0.041, 2.537]). Therefore, Hypothesis 1 was supported.

We then added the three moderators into the multivariate mediated LCS model to test the hypothesized moderated mediation effects. The relationship between upward WSC change and subsequent upward change in negative emotions was moderated by core self-evaluation (interaction = 0.563, $p < 0.01$), time management (interaction = –0.217, $p < 0.05$), and financial well-being (interaction = –0.130, $p < 0.05$).

As shown in Fig. 2, the simple slope of upward WSC change predicting subsequent upward change in negative emotions was negative at low levels of core self-evaluation (slope = –0.301, $p < 0.05$) but positive at high levels (slope = 0.442, $p < 0.01$). We then examined the extent to which the indirect effects were conditionally impacted by the level of core self-evaluation. The effect of upward WSC change on upward interpersonal deviance change via upward negative emotions change was negative at low levels of core self-evaluation (IE = –0.844, 95% CI = [–1.528, –0.038]) but positive at high levels (IE = 1.240, 95% CI = [0.435, 2.107]). Also, the effect of upward WSC change on upward organizational deviance change via upward negative emotions change was negative at low levels of core self-evaluation (IE = –0.323, 95% CI = [–0.609, –0.016]) but positive at high levels (IE = 0.475, 95% CI = [0.135, 0.872]). Although the indirect effects of upward WSC change on subsequent upward changes in interpersonal and organizational deviance via upward negative emotions change were contingent on the level of core self-evaluation, the direction was opposite to what we hypothesized. Thus, Hypothesis 2 was not supported.

[7] We did not control for demographic variables (e.g., gender, age, GPA, etc.) because they are unrelated to our focal variables as recommended by Becker (2005) and Bernerth and Aguinis (2016).

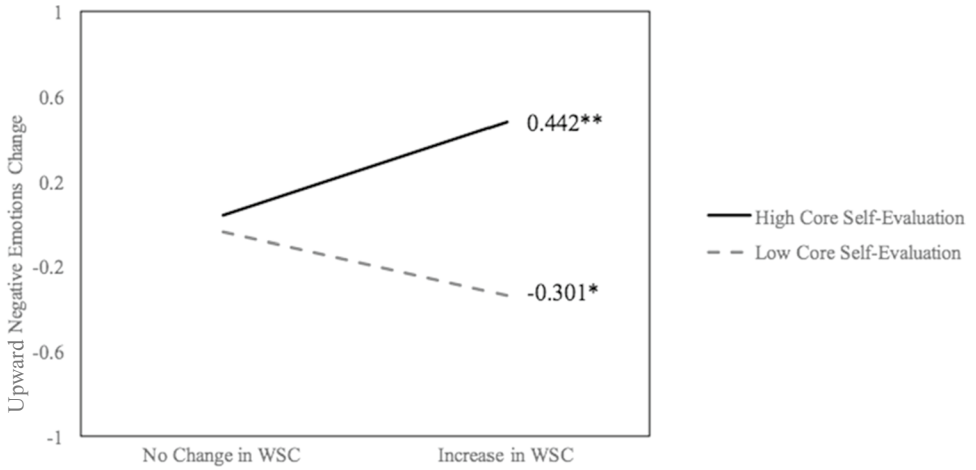
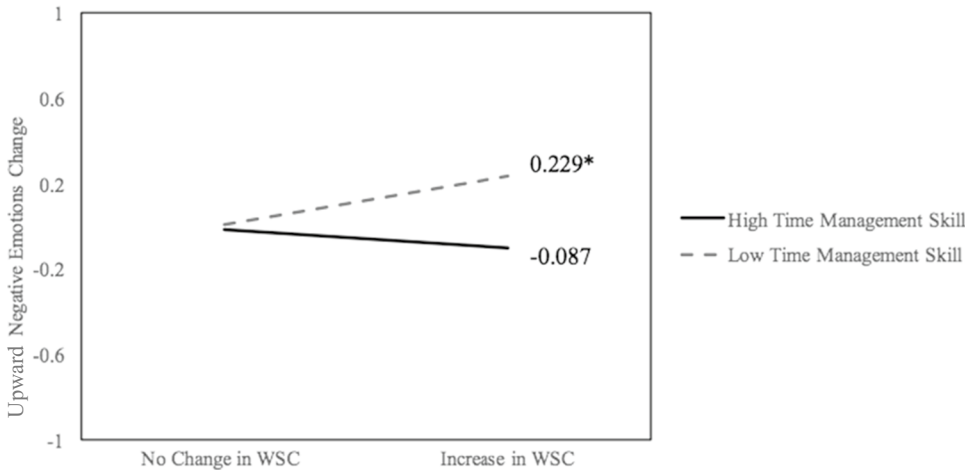


Fig. 2 Moderating effect of core self-evaluation. The effect of upward WSC change on upward changes in negative emotions was negative for individuals with low levels (−1 *SD*) of core self-evaluation and was positive for individuals with high levels (+1 *SD*) of core self-evaluation. Also, the indirect effect of upward WSC change on upward interpersonal or organizational deviance changes via upward changes in negative emotions was negative for individuals with low levels of core self-evaluation and positive for individuals with high levels of core self-evaluation. *$p < .05$. **$p < .01$

Fig. 3 Moderating effect of time management skill. The effect of upward WSC change on upward changes in negative emotions was significant and positive only for individuals with low levels of time management skill. Also, the indirect effect of upward WSC change on upward interpersonal or organizational deviance changes via upward changes in negative emotions was significant and positive only for individuals with low levels of time management skill. *$p < .05$. **$p < .01$



As shown in Fig. 3, the simple slope of upward WSC change predicting subsequent upward change in negative emotions was significant at low levels of time management skill (slope = 0.229, $p < 0.05$) but not at high levels (slope = –0.087, $p = 0.499$). Furthermore, the effect of upward WSC change on upward interpersonal deviance change via upward negative emotions change was significant at low levels of time management skill (IE = 0.641, 95% CI = [0.043, 1.328]) but not at high levels (IE = –0.245, 95% CI = [–0.929, 0.507]). The effect of upward WSC change on upward organizational deviance change via upward negative emotions change was significant at low levels of time management skill (IE = 0.246, 95% CI = [0.012, 0.572]) but not at high levels (IE = –0.094, 95% CI = [–0.366, 0.209]). Thus, Hypothesis 3 was supported.

As shown in Fig. 4 shows, the simple slope of upward WSC change predicting subsequent upward change in negative emotions was significant at low levels of financial well-being (slope = 0.348, $p < 0.05$) but not at high levels (slope = –0.207, $p = 0.244$). Furthermore, the effect of upward WSC change on upward interpersonal deviance change via upward negative emotions change was significant at low levels of financial well-being (IE = 0.976, 95% CI = [0.220, 1.677]) but not at high levels (IE = –0.580, 95% CI = [–1.405, 0.445]). Also, the effect of upward WSC change on upward organizational deviance change via upward negative emotions change was significant at low levels of financial well-being (IE = 0.374, 95% CI = [0.074, 0.684]) but not at high levels (IE = –0.222, 95% CI = [–0.520, 0.202]). Hence, Hypothesis 4 was supported.

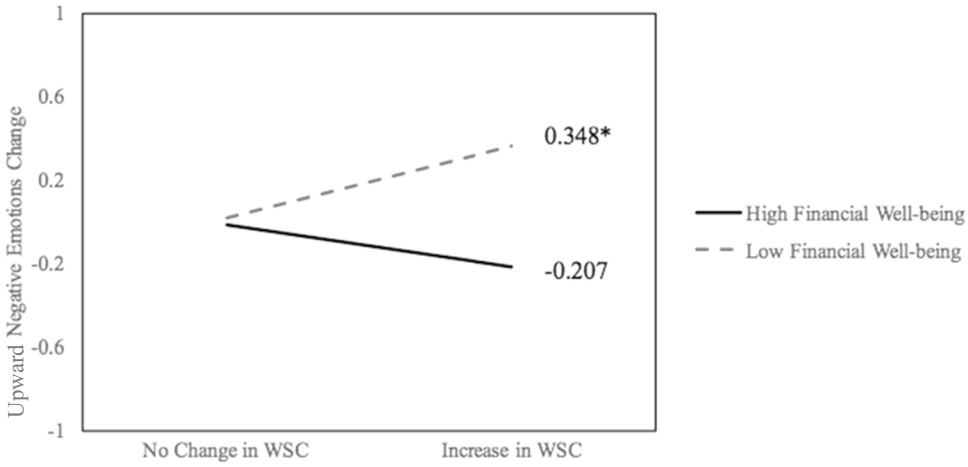


Fig. 4 Moderating effect of financial well-being. The effect of upward WSC change on upward changes in negative emotions was significant and positive only for individuals with low levels of financial well-being. Also, the indirect effect of upward WSC change on upward interpersonal or organizational deviance changes via upward changes in negative emotions was significant and positive only for individuals with low levels of financial well-being. *$p < .05$. **$p < .01$

Discussion

The results of the present study contribute to the literature in several ways. We extend the limited research on work-related behavioral outcomes of WSC. To date, research has demonstrated that WSC is negatively associated with student workers' school and personal well-being outcomes (see Choo et al., 2021; Park & Headrick, 2017, for a review). Specifically, our results showed that upward change in WSC can lead to upward changes in costly and deviant work behaviors (i.e., workplace deviance) through interceding upward changes in negative emotions. Consistent with past research on the cross-domain effects of interrole conflict (Amstad et al., 2011; Laughman et al., 2016), our findings highlight that research should take into account the work-related behavioral consequences to acquire a more comprehensive understanding of student workers' experiences of WSC.

Our study also extends the current literature's focus on the static WSC experience to the intra-individual *changes* in WSC. That is, upward WSC change predicted subsequent upward changes in negative emotions above and beyond the past and present levels of WSC in our study, and this finding lends support to the value of investigating intra-individual changes in such work-nonwork conflict (Allen & Martin, 2017; Shockley & Allen, 2015; Verbruggen et al., 2020). It should be noted that we found the pattern of changes in negative emotions was not affected by the previous level of WSC but mainly by its *changes*. Similarly, it is the *increment* in negative emotions but not the previous *level* of negative emotions that predicted upward changes in interpersonal and organizational deviance. Thus, if researchers consider only the level of WSC at one point in time, which is still common in the literature (Choo et al., 2021; Park & Headrick, 2017), or use a traditional longitudinal modeling approach (e.g., cross-lagged model), they may fail to detect its consequent effect on changes in important outcomes over time. Compared to the static view, a temporal view of studying changes enables researchers to better gauge relationships between the intra-individual changes among study variables (McArdle & Nesselroade, 2014; Mitchell & James, 2001). Our findings highlight that the direction and magnitude of WSC change have meaningful implications, significantly extending the previous WSC research and its static between-person perspective.

The present study also constitutes part of initial but critical efforts to explicitly test the unfolding process indicated in the stressor–emotion model (Spector & Fox, 2005). Our results supported the change-based mediation model, highlighting the significant role of intra-individual changes, rather than the level of stressors, in the stress incubation process that triggers strain outcomes. Importantly, employing a relatively shorter time lag (i.e., weekly) helped us not only observe substantive changes in the stressor (i.e., WSC) but also detect the manifestations of its emotional and behavioral strains over a relatively short incubation period (Dormann et al., 2015; Ford et al., 2014). Combining our findings with the previous research on stressors and deviance suggest that the prior focus on the absolute levels of stressors and the use of longer time frames (e.g., monthly, bi-monthly) could be reasons for the mixed results on the effect of stressors on negative emotions and workplace deviance (cf. Matthews & Ritter, 2016; Meier & Spector, 2013). Tentatively, our findings suggest that shorter time frames may help understand the temporal process by which stressors and their emotional and behavioral strains unfold. To build scholarly understandings of time frames in longitudinal research, researchers may investigate intra-individual changes in shorter time frames and then gradually move on to longer time frames. That way, we could systematically test and refine extant theories that are dynamic in nature (Spector & Meier, 2014).

Our study also demonstrated that the chain effects of upward WSC change on subsequent upward changes in workplace deviance depend on personal and environmental factors that are related to student workers' perceived control

over their work-school situations. Specifically, given that individuals with greater time management skill establish and prioritize different goals (e.g., complete a project), effectively use their time, and apply an organized, methodical approach to work (Macan, 1994; Macan et al., 1990), our result suggests that time management skill is a particularly important personal factor to reduce emotional reactivity to upward change in WSC. That is, how student workers manage limited time resources matters to their psychological perceptions of and emotional reactivity to upward changes in WSC. This finding also aligns with the recent perspective that time-related factors shape one's sense of control over stressors (Aeon & Aguinis, 2017).

Further, our findings suggest that better financial well-being may place student workers in a more favorable position to deal with upward change in WSC. Our findings nicely dovetail with the financial well-being literature showing that individuals tend to believe in their capacity and freedom to maintain their current and expected living standards when they are better off financially (Brüggen et al., 2017). The associated benefits of greater financial well-being give people more control to adjust job tasks and cope with upward WSC change (Creed et al., 2015; Odle-Dusseau et al. 2018), as well as regulate their negative emotional response to upward change in WSC. Taken together, our study extends the stressor–emotion theory by identifying important personal and environmental factors that buffer the effect of upward WSC change on upward changes in workplace deviance.

It should be noted that core self-evaluation moderated the relationship between WSC change and changes in negative emotions in an unexpected way. A closer look at the interaction pattern provides interesting information. Specifically, in the face of upward WSC change, upward changes in negative emotions became greater for student workers with high core self-evaluation than for those with low core self-evaluation. It is possible that student workers with high core self-evaluation find upward WSC change (i.e., increasing conflicting demands across the work and school domains) to be emotionally exhausting whereas those with low core self-evaluation may find it to be less exhausting and perhaps even motivating (Bergin & Jimmieson, 2017).

Additionally, individuals with a high core self-evaluation tend to have positive views about themselves (Judge et al., 2003), but when WSC increased despite their efforts and actions, they might become more sensitive to upward changes in this stressor with respect to their self-views (Swann, 1987). As most previous studies that supported the buffering role of core self-evaluation have operationalized stressors in a static way, our result might imply that core self-evaluation can play a different moderating role in the associations between changes in WSC and negative emotions. This unexpected finding does not necessarily invalidate previous findings for the beneficial roles of core self-evaluation but rather suggests an intriguing research question about the differential effects of core self-evaluation in static versus dynamic stressor–strain relationships.

Practical Implications

Our research findings provide important practical implications. First, although our results found that upward changes in WSC and negative emotions drive changes in workplace deviance, we want to caution readers that organizations should not view student workers with high WSC as problematic workers. Instead, we suggest that individuals' deviant behaviors could be reduced by *sustained* efforts directed toward lowering WSC and negative emotions—one-time efforts to reduce WSC and negative emotions may not lead to actual reductions in workplace deviance. It is important for organizations and student support centers to pay particular attention to students' management of upward WSC change and its associated strains over time. For instance, effective school support services can lower WSC (Hammer et al., 1998), so schools might consider frequently signaling and encouraging students to make good use of on-campus resources. Also, to further lower the experiences of WSC, schools and employers may consider rearranging the schedules and evenly distributing workload throughout the semester to accommodate students' needs. Supervisors may also display work-school supportive behaviors and encourage student workers to self-advocate for weekly flexibility in their work and school-related tasks. Organizations can also promote frequent utilization of organizational resources (e.g., study leave policy) to reduce WSC and prevent the accumulation of strains (e.g., employee assistance programs). Such consistent and sustained initiatives may improve the trajectory of WSC and negative emotions and, in turn, reduce workplace deviance.

Further, the buffering role of time management suggests that student workers can benefit from training programs aimed at improving their ability to manage their time and schedules across the work and school domains. As time management is a highly trainable skill (Macan, 1994), students can learn to better cope with competing demands of work and school, like those created by long work hours and a busy schedule (Butler, 2007). In addition, we recommend that schools and organizations pay particular attention to student workers with financial difficulties. Organizations should try to design and implement stress management interventions and other human resource management practices and policies that aim to reduce student workers' psychological stress resulting from their financial situations (Froidevaux et al., 2020). For example, some organizations (e.g., IKEA) have a "paid" work-study leave policy for their workers who attend colleges to alleviate WSC experiences, which would

likely increase levels of organizational commitment (Begall et al., 2022). Student workers should also be encouraged to seek out financial consulting services and financial support grants that are designed to help them effectively manage financial situations. Related to this, many universities are allocating resources to help financially vulnerable students, such as waiving tuition for students from low-income families (Nguyen, 2019). It may be worthwhile to expand work-study programs by which part-time jobs not only help students meet financial needs but also improve their work-school congruence and career readiness (Akos et al., 2021).

Limitations and Future Research Directions

This study has limitations that should be noted. First, our data were collected via self-reports, which might cause common method variance (CMV; Podsakoff et al., 2003). However, research has shown a correspondence between self- and other-report measures of workplace deviance (e.g., Berry et al., 2012). Further, because CMV makes it hard to detect moderation effects (Siemsen et al., 2010), the moderation effects identified in the present study largely alleviate the concerns about CMV.

Second, when confronting job stressors, individuals may also experience longer-term behavioral, physical, and psychological strains from WSC (Fox & Spector, 2006; Spector, 1998; Spector & Fox, 2005). On the basis of the previous research on WSC's relationships with school outcomes and personal health and well-being outcomes (Butler, 2007; Butler et al., 2010; Markel & Frone, 1998; Oviatt et al., 2017), future research may further investigate these associations using the change-based modeling. In this study, the mediation effect was examined using a weekly time frame and over a relatively short period. To provide more knowledge about specific time frames where meaningful changes occur, future research might consider using different time frames (e.g., biweekly, monthly) to test the effects of WSC changes on behavioral outcomes as well as other long-term physical and psychological health outcomes. Relatedly, although we did not find significant level-to-change relationships, it is possible that different results could be observed via different time frames.

While our study's focus was not on student workers' various events/activities on the weekend or during each week, it is possible that both pleasant and unpleasant events/activities (e.g., physical activity, hassles) during evenings or on the weekends could influence changes in student workers' negative emotions (cf. Cho & Park, 2018). Student workers may also engage in leisure activities on the weekends (e.g., social, relaxation) to mentally detach from work and recover from stress (Fritz & Sonnentag, 2005). Although we used a fixed interval-contingent method to assess individuals every Friday to attenuate the effects of other events/activities during the week and on weekends (Wheeler & Reis, 1991), future research may examine them more in detail to see how they would influence the unfolding process of WSC-related stress.

Additionally, although we provided tentative, post hoc explanations for the unexpected moderation effect of core self-evaluation, caution is warranted when interpreting the effect, and it is important to continue examining the moderating effect of core self-evaluation on the change-mediation relationships. Using a different time frame (e.g., monthly), core self-evaluation may weaken the effect of upward WSC change on upward changes in negative emotions in the long run. Also, important to note, we did not empirically measure student workers' perceived control and test whether it is the explanatory mechanism for the current moderation effects, partly because modeling mediated moderation effects in longitudinal analyses can be quite complex. Nevertheless, future research may attempt to show that student workers' perceived control over work-school life is associated with time management skill, financial well-being, and core self-evaluation and then test perceived control as a direct moderator. In addition, although our examination of the three moderators was based on conceptual and practical considerations, we did not measure school- and work-domain specific moderators. For example, work-domain resources such as supervisor's work-school friendly support may play a moderating role, and similarly, school-domain resources such as instructors' support may also moderate the process. Researchers may systematically examine moderators that distinguish important resources between work and school domains.

Lastly, although the current study focused on the behavioral consequences of WSC over a relatively short period, it would be both theoretically and practically meaningful to examine if and how students, through WSC experiences, learn about, perceive, and deal with interrole conflict (e.g., work-family conflict) that subsequently occurs in the long run. It is possible that students who develop better resources (e.g., time management skill, financial well-being, coping methods) may eventually have better WSC experiences (i.e., decreasing over time). As they transition from students to adults and professionals, they may have lower levels of work-family conflict, lower emotional reactivity, and better coping abilities. Future research may consider employing longitudinal research designs to examine influential factors that predict such healthy development and transition processes of students into professionals.

In all, by examining intra-individual changes in WSC, we demonstrated that scholars can acquire an enhanced understating of the theoretical and empirical significance of the temporal dynamisms of WSC, the stress processes, and the theoretically associated inter-individual moderators. Our work has broader implications for research on interrole

conflict and stress theories, emphasizing that accurate inferences about the complex consequences of interrole conflict and stress processes require researchers to attend to the temporal characteristics inherent in the construct and stress processes.

Declarations

Conflict of Interest The authors declare no competing interests.

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