FLORIDA INTERNATIONAL UNIVERSITY

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HOW REGULATORY FOCUS AND JUSTICE PERCEPTIONS CONTRIBUTE TO WORK PERFORMANCE IN A WAREHOUSING ENVIRONMENT

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This dissertation, written by Dumakas Al Snipes, and entitled How Regulatory Focus and Justice Perceptions Contribute to Work Performance in a Warehousing Environment, having been approved in respect to style and intellectual content, is referred to you for judgment.

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DEDICATION

I dedicate this work to my family. Specifically, to my father, who always remained invested in me, guiding and supporting all my endeavors. Who encouraged me to explore, to be curious, and to seek knowledge. To my mother, for your unwavering support and love. To my wife, for your love, support, and advisement. Lastly, to my son, Tyson, for all your questions, video conference interruptions, your inspirational imagination, your love, your joy, and, most importantly, for giving me a reason to aspire to always bring my best.

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ABSTRACT OF THE DISSERTATION

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This study explores the influence of self-regulatory foci on overall justice perceptions and work performance in a warehousing environment. The research model leverages extant research from job demands-resources (JD-R) theory, regulatory focus theory, and organizational justice theory in hypothesizing the influence of job demands and job resources on worker perception of overall organizational justice outcomes and individual work performance with consideration for the worker's level of prevention regulatory focus. The empirical analysis utilizing partial least squares structural equation modeling (PLS-SEM) on a sample of 173 responses from a target population of United States (US) based adults currently employed in a warehouse supported factors of autonomy, prevention regulatory focus, and overall justice as significant, positive predictors of individual contextual performance. The findings support the intersection of regulatory focus, overall justice, and work performance for future research considerations. Practically, the study informs organizations on the value of worker goal pursuit orientation, fairness perceptions, and individual autonomy in driving desirable outcomes for the organization.

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1. INTRODUCTION

1.1 Background & Problem

In a warehousing operation that employs a substantial human workforce as part of normal operations, controllable labor expenses are typically one of if not the largest expense line items in the operation's cost structure (Grosse et al., 2015). Indeed, as of 2018, nearly 80% of warehouses are operated fully by human labor without any presence of automation (Kudelska & Pawłowski, 2020). Human labor contributes to costs directly by way of employee wages, overtime, contract labor costs, and benefits and indirectly in the form of productivity, training, and turnover. Consequently, effective use of this human workforce in producing value that contributes to revenue generation is paramount to a successful operation. Further, any shortcomings in the operation can negatively impact the level of service as perceived by end customers (Staudt et al., 2015). For this reason, many companies set work goals on productivity against which individuals are measured to ensure effective return on the dollars invested in their wages. The work performance metrics can take on many forms from a simple, single variable metric per unit of time such as units per hour to more complex, multi-variate labor standards that can vary based on several factors considered in producing the output.

In most cases in the warehousing environment, the intention of the work goal is to maximize use and effectiveness of the human workforce, within reason. Depending on the nature of the work being performed within the warehousing operation and especially in applications of complex productivity targets, aligning work goals with outputs and level of effort required to perform the work can become obscure and vague. If a worker does not

have a clear understanding of how their assigned tasks translate and contribute to an output in accordance with their goals, they can lose faith in the appropriateness and applicability of the productivity target. This disconnect can lead to questions of justice and fairness in the work review process and ultimately lead to loss of employee motivation, sub-par performance, and attrition. These results contribute additional costs to the warehousing operation, negatively impacting customer experience, and ultimately affecting top line revenue (Voss et al., 2005).

This research focuses on workers who are held accountable to a productivity standard and how their regulatory focus affects justice perceptions and work performance. The research intends to identify how components of work design and performance feedback mechanisms are impacted by a worker's goal pursuit orientation in shaping justice perceptions and, ultimately, continued investment of their efforts with an organization. Controllable labor costs are typically the largest cost component in a warehousing operation's financials. Additionally, increasing customer expectations require that supply chains and warehousing operations be more agile and able to deliver products effectively and efficiently. As such, increasing worker perceptions of justice in organizational processes and maintaining an adequate level of individual productivity is key to meeting these increasing customer expectations.

It is key for new and experienced workers alike to ensure they remain motivated in performing their duties. It is also critical that warehousing operations maintain a capable and productive workforce to ensure a positive return on investment in worker wages and a positive end-customer experience. By providing workers with appropriate resources to overcome demands along with clear instruction and feedback on expectations and goals, it

is likely a worker will view their roles more favorably and be motivated to achieve and maintain an acceptable level of work performance over a longer tenure. Ultimately, the worker's success will contribute to customer satisfaction as the supply chain meets its customer's expectations.

1.2 Research Question

Considering, the issues at hand proposed in the opening, this research ultimately intends to answer the questions:

(1) *What are the factors contributing to work performance in a warehousing environment?*

(2) *How does regulatory focus moderate the relationship between factors contributing to justice perceptions and work performance in a warehousing environment?*

More generally, this research focuses on how the aspirations and values of warehouse workers in pursuit of work goals impact their perceptions of justice and motivations to perform in their role. If we can identify how pursuit of work-related goals shapes a worker's view of their role and organizational process, then the organization becomes informed on how best to employ productivity expectations and deploy work assignments in a manner that is more favorable in understanding to the worker. This ultimately leads to a more motivated and productive workforce that will contribute positively to operational execution results.

In addition to the focus on the warehouse, the study could also be extended to roles within any component of the supply chain such as in ports of import/export, transportation, cross-docking facilities, last-mile delivery, etc. More broadly, the same concepts might

hold true for workers in any industry where maintaining adequate productivity is a key to operational success.

Ensuring that the human workforce is properly trained, motivated, and generally views their role positively and justly is paramount to employing a successful and efficient human workforce. We know from the literature that innovation and technological advances can aid in increasing the productivity of warehouse operations (Kudelska & Niedbal, 2020). Factors external to the four-walled operations such as operations planning and demand patterns also have an impact on productivity as evidenced by Faber et. al (2018). Goal setting in the form of productivity targets must be reflective of the outputs of the job and efforts required as highlighted in Vries et. al (2016), Batt and Gallino (2019) and Brazhkin (2018). Batt and Gallino's (2019) study also highlights the importance of experience in consistent, productive work within a warehouse operation. These factors and relationships along with the inclusion of the worker's goal pursuit strategies are all of importance to this research effort.

Supply chains globally are being stretched functionally to their limits, driven by labor and product constraints in an increasingly competitive environment. This has forced those organizations with means to flex their might to remain functional by way of increased compensation packages, automation, and further proliferation of distribution facilities. The impact of these moves has been felt throughout the supply chain industry from transportation and logistics to warehousing. As the labor market tightens and the number of opportunities within the industry increase, improving worker performance becomes critical in maintaining a fiscally healthy business and delivering on customer expectations. The more workers understand the expectations of their role and how to be successfully

productive compared to performance expectations, the more likely workers will perceive their roles as just, remain motivated, and meet or exceed expectations.

1.3 Contribution to Business

This research is anticipated to inform organizations that employ human labor within their supply chains of key components and considerations to include in their work design and performance management processes to set their workers up for success in achieving goals over the long term and ultimately contributing to improved customer experience. By statistically defining those components that are critical to improving justice perceptions and work performance, supply chain managers will know exactly where to focus their time and efforts in recruitment, training, and managing their teams in a manner that is beneficial to improving worker performance and warehousing execution. With considerable costs at stake and an ever evolving and increasing customer demand in warehousing and supply chain overall, maintaining a productive human labor force can be a key differentiator in customer perceived value for any organization in a competitive market space.

The research will be conducted primarily for the benefit of warehouse operations leaders by way of empirical evidence that highlights where to focus efforts in improving worker justice perceptions and performance in their roles. Additionally, warehouse workers stand to gain as well, as the study will acknowledge how best to inform them of work design, goal expectations, and performance feedback.

2. LITERATURE REVIEW

Based on the research purpose and research question at hand, a review of prior research in the focus areas of job demands-resources theory, regulatory focus theory, organizational justice theory, and theories influencing work performance is warranted in support of the proposed research model. In this section, we will review pertinent seminal through present-day literature that contributes to the known body of knowledge of the constructs and relationships included in this study.

2.1 Organizational Justice Theory

Organizational justice is a well-established theory in the extant organizational behavior literature. Its origins began within the field of equity theory leading to the first of what would become multiple dimensions of organizational justice, distributive justice. Equity theory proposes that people compare their own ratio of perceived work outcomes to perceived work inputs to the same ratio of others in similar situations (Adams, 1963, 1965). Mismatched ratios between comparison persons create guilt on the higher ratio side and anger on the other, lower side. Equal ratios are preferred and lead to satisfaction, and equity theory posits that in the presence of uneven ratios, individuals adjust their own or other's inputs and outputs to realize a more pleasurable state (Greenberg, 1994).

Organizational justice as an umbrella term was first utilized by French (1964) in describing employee perceptions of fairness within organizations. Distinctions of content and process have been made between conceptualizations of justice (Greenberg, 1987; Tornblom, 1990). These distinctions bifurcate early organizational justice into two forms,

distributive justice and procedural justice. Procedural justice was introduced by Thibaut and Walker (1975) in their work focused on the reactions to the dispute-resolution process through means of process control and decision control. Subsequent research built upon this seminal work in procedural justice to better establish the concept of control of process in outcome attainment (Greenberg & Folger, 1983). Leventhal (1980) expanded the focus of procedural justice beyond just that of process control to include additional procedural elements including process definitions, appeals, and availability of change mechanisms.

Bies and Moag (1986) expanded the dimensionality of organizational justice further by introducing a third dimension, interactional justice, which concerns a subordinate's perceptions of respect, dignity, appropriateness, and correctness employed by their superiors during execution of procedures in determination of outcomes. However, since its introduction interactional justice has been challenged as a single, distinct construct (Colquitt & Greenberg, 2003) with some researchers splitting it into separate informational and interpersonal justices (J. H. Karriker & Williams, 2009). Indeed, Greenberg and Cropanzano (1993) first expanded interactional justice into separate parts, informational justice and interpersonal justice. Informational justice focuses on explanation and reasoning, if any, provided by leaders to subordinates as to how or why an outcome was determined, and interpersonal justice is concerned with the level of dignity and respect perceived by the subordinates in their personal interactions with leaders. Interpersonal justice elicits strong, immediate responses from subordinates in alignment with the perceived fairness, or lack thereof, of the treatment (Bies, 2001). Dai and Xie (2016) noted that interactional justice was commonly considered a part of procedural justice until Bies and Moag (1986) made the distinction. Dai and Xie (2016) also clarified that distributive

justice places emphasis on the distributive outcome's rationality and impartiality of the reward, while procedural justice emphasizes the process of determining outcomes. Interactional justice emphasis the quality of interpersonal communications between leader and subordinate.

Since these foundational works in the late 1980s and early 1990s, organizational justice has been applied to many different contexts, and the dimensions mentioned previously have been challenged, reconceptualized, and verified in various studies. Colquitt (2001) developed and validated a measure containing four dimensions of organizational justice including distributive, procedural, informational, and interpersonal justices. Contrarily, Bies (2001) theorized interactional justice to be congruent with interpersonal justice. Roch and Shanock (2006) expanded upon Bies's (2001) study resulting in a single interactional justice measure that was not significantly different than interpersonal justice but was statistically distinct from informational justice. Further studies have found a strong correlation between procedural and informational justice implying the existence of only a single construct (J. Karriker, 2006). Consequently, subsequent research has proceeded with either a three- or four-dimensional approach with distributive and procedural justice remaining as mainstays. In four-dimensional approaches, two of interpersonal, informational, or interactional justices comprise the remaining two organizational justice dimensions. Three-dimensional approaches have commonly included interpersonal justice as a third dimension (J. H. Karriker & Williams, 2009) or combined informational and interpersonal justices into a single interactional justice construct (Cropanzano & Byrne, 2000; Folger & Skarlicki, 1999; Rupp & Cropanzano, 2002).

Most recently, a fifth dimension of organizational justice has been conceptualized that combines perceptions of justice into a single, global justice perspective. This construct, termed overall justice, was introduced to help improve understanding of organizational justice beyond when considering other dimensions of organizational justice individually. Potential shortcomings of focusing on the dimensions singularly such as inaccuracy or lack of depth in individual justice experiences have been highlighted in the literature (M. Ambrose & Schminke, 2009). Hauenstein et al. (2001) suggested that differences between dimensions of justice may be more interpretive than real and suggest that a more a simplistic view of justice may be more informative than propositions on dimension of organizational justice. Lind (2001) argued in a response to Cropanzano et al. (2001) that the impacts of justice depend more on overall justice perceptions and that dimensions of organizational justice in the literature are highly correlated. Ambrose and Arnaud (2005) shared similar conclusions in suggesting organizational justice research might be better served focusing on perceptions of overall fairness and its effect relative to other psychological constructs. Holtz and Harold (2009) found evidence of the varying nature of organizational trust over time and establish organizational trust, agreeableness, and all of interpersonal, distributive, and procedural justices as predictors of overall organizational justice. Lastly, Yean and Yusof (2016) explored the conceptualization of organizational justice and highlighted empirical evidence of its impacts on organizational citizenship behavior and job performance.

2.2 Regulatory Focus Theory

The concept of regulatory focus was first introduced by Higgins (1997) as an underlying mechanism to the frequently used hedonic principle of approach-avoidance motivation. The hedonic principle proposes that people approach pleasure and avoid pain, and that this concept appropriately drives our motivations. Higgins stated that there are other underlying principles that further describe different kinds of approach and avoidance processes, of which regulatory focus is one such principle. Higgins focused his study on self-regulation towards desired end-states and explored how people approach pleasure and avoid pain in various ways. Regulatory focus theory, at its core, suggests that the differences in performance, emotions, and decision-making are based on the type of need under consideration, some with a promotion focus and others with a prevention focus. Regulatory focus theory implies that promotion and prevention focus lead to differences in decisions made independently of the hedonic principle. Promotion focus is more so related to nurturance-relation regulation, and security-related regulation involves a prevention focus. Goal pursuit is also a function of regulatory foci. The theory provides that promotion focus aligns with eagerness means of goal pursuit while prevention focus aligns with vigilance means. Higgins also differentiated regulatory foci distinctly from more established principles of regulatory anticipation and regulatory references but notes opportunities to leverage all three principles in future theory development and applied use cases.

Higgins continued to expand on regulatory foci in subsequent years. In his Higgins (2000) work, he established the concept of regulatory fit, an alignment of regulatory foci and goal pursuit that contributes to the concept of decision value. The study

established that outcomes in terms of benefits and costs are not the only way to measure the goodness of a decision, as there was a value obtained via regulatory fit that also contributed to the goodness of decisions independent of value from worth. Both types of value contributed to a person's evaluation of their decision, but Higgins (2000) noted that value from regulatory fit was likely to be transferred to worth thereby increasing the perception of worth value. Higgins extended this concept of value further in his (2002) study on how regulatory focus created three distinct values: outcome value, value from regulatory fit, and value from proper means. In addition to the two formerly defined types of value, value from proper means is created when goal pursuit means are kept within established norms and rules. Higgins again found that value from fit and value from proper means were unconsciously transferred, even post-decision, to outcome value by decision makers. Higgins noted the potential impact of these results on value perception, particularly monetary value, that could influence what consumers are willing to pay for a product.

2.2.1 Regulatory Focus & Work Outcomes

Johnson et al. (2011) explored the mediating role of regulatory foci in the effects of goal orientation on task performance. They approached goal orientation in three forms, learning goal orientation, performance-avoid goal orientation, and performance-prove goal orientation. Learning goal orientation focused on increasing competence through skill acquisition and learning from experience. Performance-avoid goal orientation is concerned with doing just enough to avoid uncertainty in one's competence, and performance-prove goal orientation actively seeks to prove and demonstrate one's

competence. The authors found a positive and significant direct relationship between learning goal orientation and task performance as well as through the mediating effect of prevention focus. Performance-prove goal orientation was found to indirectly influence task performance by way of the mediating effect of promotion focus, and performance-avoid goal orientation was found to negatively relate to task performance directly.

Lanaj et al. (2011) performed a meta-analysis of regulatory focus and work-related outcomes. The researchers factored in personality antecedents to regulatory focus to assess their impacts on work related outcomes. The authors noted that promotion and prevention focus are independent, and the possibility exists that a person may be naturally drawn to high levels on both spectrums, a single spectrum, or neither spectrum. The results of the study provided empirical evidence of the independence between prevention and promotion focus. Additionally, the findings successfully supported regulatory focus as a goal-striving mechanism linking personality dispositions to work behaviors. Also noteworthy in the study was the separation of regulatory focus into two types, general and work-specific, both of which were found to be statistically significant in predicting work behaviors. As for the impact of regulatory focus on performance work-related outcomes, Lanaj et al. (2011) found that promotion focus is positively related to task performance, organizational citizenship behavior, and innovative performance. Furthermore, a negative, significant relationship was found between promotion focus and counterproductive work behavior, and prevention focus was found, interestingly, to be positively related to counterproductive work behavior and safety performance. There was no evidence found of a relationship between prevention focus and task performance. Related to employee motivation and job attitudes, promotion focus positively related to work engagement, job satisfaction, and

affective, continuance, and normative organizational commitments. A positive relationship was found between normative and continuance commitment and prevention focus while prevention focus was negatively related to job satisfaction. These results are important to this study as the work outcomes findings help our understanding of commitment to the organization.

Watling et al. (2012) took a quantitative approach in examining the role of regulatory focus theory in understanding responses to feedback. They proposed that positive feedback increases motivation for those high in promotion focus while negative feedback increases motivation for those high in prevention focus. They interviewed 22 academic doctors on their experiences receiving and responding to feedback. They found the application of regulatory focus theory difficult in real feedback scenarios in a clinical setting. They did find evidence in their data of the proposed motivations for those high on the regulatory foci scales, but the authors also note challenges with external factors and changing regulatory foci over time.

Brenninkmeijer and Hekker-Koning (2015) also explored the relationship between regulatory focus and work outcomes through the mediating effect of job crafting, which they described as the changes to work made to meet an individual's own preferences and needs. Job crafting was further defined along four dimensions: structural job resources, social job resources, challenging job demands, and hindering job demands. Structural job demands are concerned with work design aspects while social job resources focus on external support from colleagues. Challenging job demands promote professional growth and stretch an individual to achieve more, and hindering job demands present the opposite opportunity with barriers preventing growth and goal attainment. The authors presented

an employability dependent variable which focused on an individual's perceptions of their opportunity for employment both internally and externally. They found that promotion focus is positively related to crafting structural job resources, social job resources, challenging job demands, and employability directly while also positively impacting work engagement indirectly. Prevention focus was found to be negatively related to employability directly and negatively associated with work engagement and employability through the mediating effect of crafting hindering demands.

Everyone has goal pursuit motivations, and as such focusing on the regulatory focus impacts of leaders has also been a point of focus in extant research. Johnson et al. (2017) examined how leader regulatory focus and behaviors shape the regulatory focus of subordinates through a mixed-methods approach across five studies. Through each of their studies, the authors found significant evidence of leader regulatory foci positively influencing subordinate regulatory foci along the same dimensions. Leaders with high promotion focus were likely to increase the promotion focus of subordinates and significantly decrease their prevention focus. It was also found that regulatory foci are significant predictors of leadership behaviors and reward/punishment behaviors. In the case of supervisor promotion focus, a positive subordinate promotion focus relationship was established through significant mediating roles of supervisor transformational behavior and supervisor contingent reward behavior. Additionally, supervisor prevention focus was found to positively influence subordinate prevention focus through the mediating effects of supervisor contingent punishment behavior and supervisor management by exception behavior.

2.3 Work Performance

Employee performance is a broad concept that has been studied extensively in extant literature for decades with varied contributing factors. For the purpose of this study, we focus on a few theories and concepts contributing to performance that are applicable to the warehousing context. In the warehouse setting, performance is typically tied to productivity in individual task assignments, support and contribution to a broader team, and safety. As stated previously, work performance is of up-most importance to leaders in the warehousing environment to ensure adequacy of outputs, meet customer expectations, and to maximize return on wages invested in the human resources.

2.3.1 Motivations

Expectancy theory laid the groundwork for subsequent study in the field of work motivations. It proposes that people choose their actions over other alternatives due to expectations of desired outcomes (Vroom, 1964). That is, particular actions lead to goal attainment which is expected to ultimately result in preferential outcomes.

Maslow's theory of motivation (Maslow, 1943) provides us with his oft used five basic needs starting with the most essential physiological needs and progressing hierarchically to safety needs, love and intimacy needs, self-esteem needs, and, at the apex of the pyramidal depiction, self-actualization needs. The first four needs are described as deficiency needs since the drive to acquire them is innate and unconscious, and self-actualization is described as a being-need as it is based on human experience. Maslow's theory of motivation has been applied in the work context many times since its inception. Greenberg and Baron (2003) noted the importance of the practical application of these

needs by management in every organization. They also highlighted the need to recognize worker accomplishments to satisfy their esteem needs. Additionally, work compensation was found to be an important contribution to safety needs, and with the dependency that is required of work compensation for other life activities, job security and psychological health were identified as important considerations for safety needs (Maslow, 2013; Stewart et al., 2018).

Several additional motivation theories have extended from Maslow's seminal work. McGregor's (1960) X theory proposes that people have an inherent dislike of work and must be directed and coerced towards achievement. People innately wish to avoid responsibility, lack ambition, prioritize security above all other needs. Y theory aligns with much of Maslow's higher order needs of esteem and self-actualization. Y theory proposes a more positive view of employees' natural inclination to do well and see the organization succeed through managerial influence based on autonomy and decentralization (McGregor, 1960). McGregor ultimately found theory X to be limiting and suggested a focus on theory Y for management. Herzberg's (1970) motivation/hygiene theory proposes that satisfaction and dissatisfaction are not opposites along the same continuum. The theory was focused in an industrial context and states that motivational factors only apply to satisfaction while hygiene factors are only applicable to dissatisfaction (Herzberg, 1970). Tosi et al. (1986) proposed that if managers want to improve performance they must focus on motivators, and to increase work dissatisfaction, hygiene factors must be improved. McClelland's need theory (1961) focuses on motivations of power, affiliation, and achievement. It aligned with Herzberg's theory in that high achievers strove for motivational needs while low achievers focused more so on hygiene factors. Rybnicek et

al. (2019) validated McClelland's need theory using neuroscientific methods which they claim is more applicable to current work norms and environments. Their research was spurred by the findings of Steers et al. (2004) that motivational theories have not kept pace with today's work environment.

2.3.2 Job Demands & Resources

Prior to the introduction of job demands and job resources as theoretical constructs, one of the seminal works in the field of work motivations and enrichments was conducted by Hackman and Oldham (1976) which highlighted the importance of work characteristics including skill variety, task identity, task significance, autonomy, and feedback in driving work outcomes. Fried and Ferris (1987) provided empirical evidence of the validity of the job characteristic model proposed by Hackman and Oldham (1976) via a meta-analytic analysis of approximately two-hundred relevant studies. Their findings also supported the existence of relationships between job characteristics and both psychological and behavioral outcomes as well as the mediating effect of psychological state on the relationship between job characteristics and personal outcomes.

Job demands-resources theory (JD-R) was introduced by Demerouti et al. (2001) as an alternative to existing models of employee well-being. In this theoretical model, job demands are defined as the physical, social, or organizational job aspects that require sustained cognitive and/or emotional effort or skills. It is noted that job demands are not inherently negative but could manifest as stressors when the demands require high effort with little recovery time. Job resources are described as the physical, social, or organizational factors that help to achieve goals, reduce job demands and their associated

physiological and psychological costs, and/or stimulate personal growth, learning, and development. These factors included autonomy, strong work relationships, opportunities for advancement, coaching and mentoring, and learning and development. They found that when demands are high and resources are low, stress and burnout are to be expected. In a follow up study, Bakker and Demerouti (2007) noted that job resources play an important role in motivation and ultimately performance. The authors also conclude that the motivational effect of job resources may be either intrinsic, fostering personal growth, or extrinsic in achieving work goals.

2.3.3 Warehouse Productivity

Within the warehousing context, Voss et al. (2005) explored the impact of employee performance and interdepartmental performance appraisal in distribution centers on service, financial, and overall supply chain performance. The impact of employee and interdepartmental performance on service performance (i.e., customer satisfaction, on-time delivery, in-full delivery, return, etc.) were supported by the research while the impact on warehouse financial performance was only partially supported. Gummesson (1987) provided a key basis of Voss's research by establishing the relationship between successful internal marketing and improvements in performance and quality of internal departments.

Goomas et al. (2011) successfully established a link between real-time group feedback and improved productivity within the order picking processes of a warehouse. They implemented an overhead scoreboard that graphically depicted task completion progress, tasks in queue yet to be completed, and group performance versus an engineered labor standard. Their research resulted in an average 10.25% improvement in productivity

when compared to the control group. This work highlighted the impact of effective, timely feedback in motivating workers to stay efficiently on task. Further, Webb et al. (2013) explored whether productivity targets should be set at challenging levels with target-based pay employed to drive increased productivity. They found that individuals assigned an easy productivity target along with a fixed wage identified more efficiencies within a process while those assigned more difficult targets along with target-based pay where more productive but less ingenious in identifying efficiencies.

Vries et. al (2016) explored the effects of regulatory focus and order picking method on maximizing picker productivity in a simulated warehouse environment. We know from the regulatory focus literature that individuals who employ a prevention focus tend to follow rules strictly and are more risk averse while persons with a promotion focus strive for accomplishment, growth, and advancement. Vries and team expounded upon this by investigating regulatory focus across three different picking methods: parallel, zone, and dynamic zone picking. They hypothesized that the more independent picking mechanism, parallel picking, would be more productive for high promotion focused individuals while the cooperative, zone picking method would align with more productivity from high prevention focused workers. The dynamic picking method was described as existing between parallel picking and zone picking with a combination of the independence and cooperativeness of both methods. The study found that in parallel picking, competition-based incentives outperformed cooperation-based incentives for pickers that were highly promotion focused. Conversely, with zone picking, cooperation-based incentives outperformed competition-based incentives for high prevention focused pickers. For dynamic picking, the difference was negligible between the two incentive types.

Ultimately, it was confirmed that individualized incentive systems were more effective in driving improved productivity in independent work tasks while cooperation-based incentive systems were most effective with work tasks that required collaboration among team members.

Brazkhkin (2018) added another dimension to the issue of improving warehouse productivity. He considered small and medium sized warehouse operations where fully fledged engineered labor standards may not be appropriate when considering size and lack of operational complexity. He introduced a unique yet simplistic productivity metric utilizing lift-truck utilization as an alternative indicator of productivity performance. Furthermore, Brazkhin looked beyond the traditional picking functions to drive improved productivity throughout the entire operation, and he leveraged the work of Hackman et. al (2001) where they introduced the Input-Output Framework that described labor productivity as a ratio of physical input to physical output. Brazhkin proposed using machine hours, the number of hours a lift-truck is in motion and typically viewed as an input, as a proxy for output in the productivity ratio. He concluded that machine hours as a measure of productivity can effectively be used as a proxy for traditional measures of output. He also found that machine-hours are a more reliable measure of productivity versus traditional measures for days when work is strategically consumed to smooth the workload over a period of time to maximize utilization.

Batt and Gallino (2019) introduced the concept of chaotic picking in their research on factors that increased picking performance. Chaotic picking for their purposes was described as multi-item storage in a single warehouse location that thus requires searching for the correct item during the picking processes. To fully characterize chaotic picking,

they considered time, distance, bin load, and bin density when picking a single item from a location. They found that the addition of this search function increased pick time by 16% as the pick density increased from nine to 22 items per foot in their study. However, picker experience helped mitigate the impact of this increase in picking time. Each doubling of a picker's experience reduced pick time by 4.2% with the gain in pick efficiency primarily found in the search function. They also found that variance in pick performance was lessened as experience increased and that performance while in the novice stage was not indicative of performance levels when more experience was obtained.

Kudelska and Niedbal (2020) explored the impact of technological and organizational innovation in warehouse processes on picking efficiency and workload. They acknowledged the importance of the human workforce in warehousing operations to overall supply chain success. They leveraged a simulated warehouse environment to explore four levels of picking efficiency: acquisition and transport of items, wait times for required materials, packing station preparation, and idle time. They found that the introduction of technology such as robotics to aide in the transport of goods alongside human labor in performing the picking process helped to improve productivity by 21% and improved overall warehouse efficiency. Kudelska and Niedbal (2020) also found that the introduction of innovation reduced the workload and improved the safety of the human labor involved in the picking process, but this also contributed to increased idle time by as much as ten multiples. The authors noted, however, that the increased idle time could possibly be repurposed for other necessary tasks such as administrative duties or housekeeping. The introduction of transport robots did not influence the efficiency of the packing task in overall process success. Workers packed at the same rate regardless of

how the picked items were transported. Their results provided evidence that a reduction in human labor and its associated costs does not always accompany the introduction of technology in a picking process. It is important to note that the study only considered the reduction in workload in physical terms and not in mental terms that may also be a factor worth consideration.

Attention must also be paid to the physical cost of the work performed by humans within the warehouse as well. Kudelska and Pawlowski (2020) successfully correlated warehouse cost optimization with factors influencing the ergonomics of operations within the warehouse. In their study, allocation of goods within the warehouse was considered in a simulated picking operation with a goal of reducing intensity of work to retrieve the goods. The authors point out that most prior research focused only on the development of decision-support models to drive economic efficiency goals without consideration for human factors. Grosse et al. (2015) also noted a similar sentiment in that human factors were often ignored in the designing of processes for the benefit of management.

2.4 Conclusion

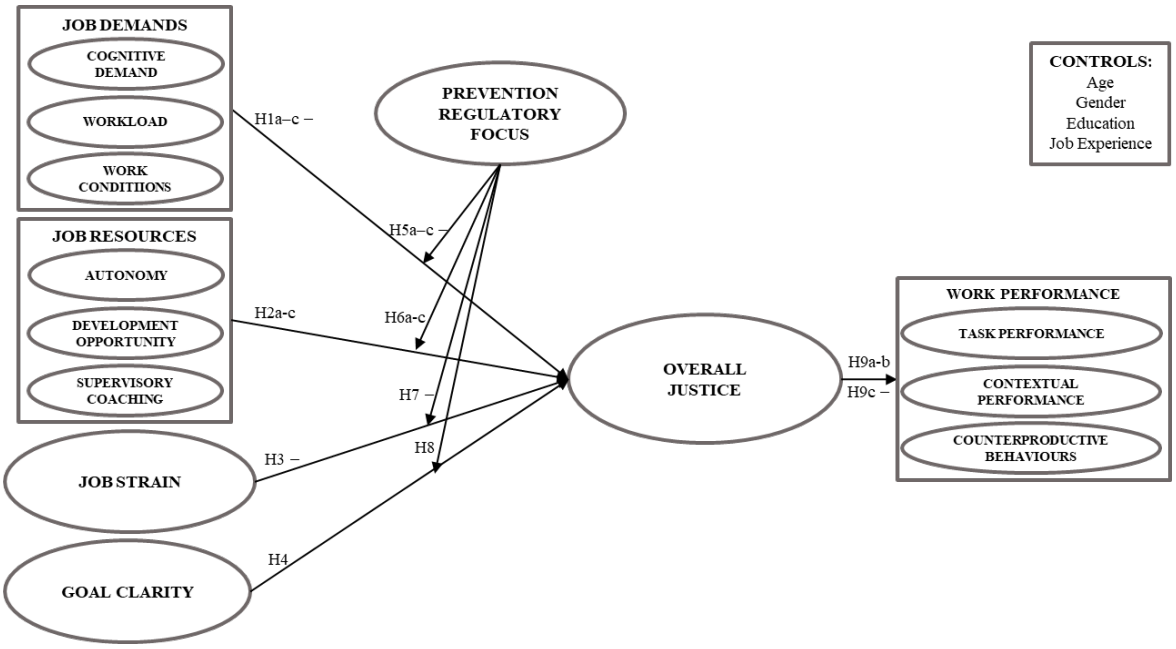
The research efforts highlighted above lend guidance to relationships between job design, goal-pursuit, organizational justice, and ultimately work performance. With each of the theories and concepts reviewed, we find evidence of potential impacts in improving performance within a warehouse setting. Many of the findings support the notion that decisions of organizational process and work design must be considerate of the motivations and strategies of the impacted human labor in increasing their perceptions of outcomes and ultimately driving performance.

3. METHODS

3.1 Conceptual Model & Hypothesis

The conceptual research model presented in Figure 1 is theorized to identify the factors contributing to work performance in a warehouse environment. The model identifies eight independent variables influencing worker perception of overall organizational justice with each relationship moderated by worker prevention regulatory focus. The organizational justice construct is posited in a mediating role influencing the dependent variables of interest for this study, components of work performance. Additionally, we control for four variables including age, gender, level of education, and relevant job experience.

Figure 1: Conceptual Research Model



3.1.1 Job Demands, Job Resources, & Goal Clarity

Job demands-resources theory (JD-R) was introduced by Demerouti et al. (2001) as an alternative to existing models of employee well-being. In this theoretical model, job demands are defined as the physical, social, or organizational job aspects that require sustained cognitive and/or emotional effort or skills. It is noted that job demands are not inherently negative but could manifest as stressors when the demands require high effort with little recovery time. Job resources are described as the physical, social, or organizational factors that help to achieve goals, reduce job demands and the associated physiological and psychological costs, and/or stimulate personal growth, learning, and development. These factors included autonomy, strong work relationships, opportunities for advancement, coaching and mentoring, and learning and development. Demerouti et al. (2001) found that when demands are high and resources are low, stress and burnout are to be expected. More specifically, they found that unfavorable job demands are primarily and positively related to exhaustion, whereas job resources are primarily and negatively related to disengagement from work. In a follow up study, Bakker and Demerouti (2007) noted that job resources play an important role in motivation and performance. The motivational effect of job resources may be either intrinsic, fostering personal growth, or extrinsic in achieving work goals.

One of the psychological components that has received considerable focus in the literature is the role of emotion in both the inputs and outputs of job-demands resources theory. Wright and Bonett (1997) provided empirical evidence of the inverse relationship between the emotional exhaustion component of burnout and work performance. Bakker and Heuven (2006) studied the role of emotional job demands on burnout through

emotional dissonance and how it relates to in-role performance through exhaustion and cynicism. They were able to successfully support their hypothesis that emotional job demands were a successful predictor of burnout, and that emotional dissonance was negatively related to in-role performance through its relationship with burnout.

Research in job demands-resources theory has successfully established the positive relationship between job resources and motivation along with the positive relationship between job demands and strain. Motivation positively influences work engagement and organizational outcomes while strain inversely impacts work engagement and organizational outcomes (Bakker & Demerouti, 2007, 2017). Demerouti et al. (2000) provided evidence of the impact of increased job demands on emotional and physical exhaustion and, ultimately, declining life satisfaction. Similar results were supported by Bakker et al. (2004) in their findings on job demands' role in reducing in-role performance and exhaustion's positive relationship with disengagement. Likewise, supporting evidence exists for job resources' role in positively influencing work outcomes. Bakker et al. (2008) found support for colleague and supervisor support resources in improving team performance through a reduction on the mediating effect of cynicism. De Cuyper et al. (2011) found evidence of job resources' role in reducing turnover intentions specifically through resources of job control, colleague support, and supervisor support.

Much of the supporting research in job demands-resources theory takes a multidimensional approach to both job demands and job resources constructs. This study similarly explores several dimensions of job demand and job resource constructs pertinent to typical roles in a warehousing context. With respect to job demands, we focus in on the dimensions of cognitive demand, workload, and work conditions. We leverage the work of

Morgeson and Humphrey (2006) in defining cognitive demand as the level of cognitive load and concentration required in the job and work conditions as the physical and environmental conditions in which job tasks are completed. Workload is as a quantitative description of work completion expectations within a given time frame (Bakker et al., 2003). Considering the extant evidence of job demands' relationship with work performance and engagement, we hypothesize:

> *H1a. As perceptions of cognitive demand increase, perceptions of overall justice will decrease.*
>
> *H1b. As workload perceptions increase, perceptions of overall justice will decrease.*
>
> *H1c. As perceptions of adverse work conditions increase, perceptions of overall justice will decrease.*

From a job resources perspective, we employ dimensions of autonomy, development opportunity, and supervisory coaching. Autonomy is defined as the freedom permitted to workers to make decisions about their work (Karasek, 1985). We leverage development opportunity as described by Zhang and Farndale (2021) as resources that help enhance knowledge and skill, leading to potential career advancements. Supervisory coaching is constructive feedback provided by a superior that is designed to maximize output by showing respect and value for the worker (Ellinger et al., 2005). With evidence of job resources as a positive predictor of desirable work outcomes and positive engagement, we hypothesize:

> *H2a. As perceptions of autonomy increase, perceptions of overall justice will increase.*
>
> *H2b. As development opportunity perceptions increase, perceptions of overall justice will increase.*

H2c. As perceptions of supervisory coaching increase, perceptions of overall justice will increase.

Lastly, we make a consideration for an index variable, Job Strain, combining elements of both job demands and job resources. Job strain is defined in this study as the difference between psychological job demands and job control (Le et al., 2023). The variable bears it roots from Karasek's (1979) job strain model where he explained job demands as stressors in the work environment, job control as decision-latitude or discretion in the work environment, and job strain as the presence of high job demands and low job control. This variable is proposed to interact similarly to job demands from a conceptual standpoint, and its inclusion is based on the supporting evidence provided for the dimensions of job demands. Thus, we hypothesize:

H3. As perceptions of job strain increase, perceptions of overall justice will decrease.

In the warehousing environment, work outcome and productivity expectations can vary widely in their derivation and implementation, and in some cases, the expectations might not align well with the output of a worker's efforts. To gauge the worker's understanding of their goals and how best to achieve it, goal clarity is considered a factor influencing worker perceptions of justice. In this study, goal clarity is defined as perceptions of the degree to which work goals are defined and relate to the work output (Sawyer, 1992). Sawyer (1992) investigated the consequences of goal and process clarity on job satisfaction and employee turnover. He found significant evidence of goal clarity's positive influence on job satisfaction. Park and Choi (2020) posited goal clarity as a mediating variable between performance feedback and individual performance. The relationship between goal clarity and performance was further moderated by autonomy.

They found statistical evidence supporting all hypotheses in their study except for autonomy as a moderator of goal clarity's impact on performance. Performance feedback and goal clarity both showed strong, positive statistical impact in influencing individual performance. Anderson and Stritch (2015) used an experimental approach to investigate goal clarity's impact on task performance with task significance as a moderator. They too were also able to find statistical evidence of goal clarity's positive influence on performance. Interestingly, they also found that task significance negatively impacted the relationship between goal clarity and performance perhaps, they opine, because of performance anxiety. Based on the extant research findings, it is posited:

H4. As goal clarity increases, perceptions of overall justice will increase.

3.1.2 Moderating Role of Regulatory Foci

For the purpose of this study, we conceptualize regulatory foci in accordance with Hamstra et al. (2014). Promotion focus is defined as self-regulations with a concern for advancement and accomplishment, and prevention focus is defined as self-regulation with a concern for safety and security. Vries et. al (2016) helped establish the relationship between worker motivation and regulatory focus, as they described how alignment of a worker's motivation, type of task, and task goals help to drive better performance. From the extant research, we also know that regulatory focus theory proposes two independent and distinct concepts of goal obtainment motivation, prevention focus and promotion focus. Consequently, if there exists an opportunity to align one's motivations and risk preferences with their work goals, then an opportunity exists to maximize work performance through work design and goal setting.

Zhang et al. (2019) explored regulatory focus theory in the context of dealing with stressors and their impact on performance. The research found that promotion-focused coping was positively related to task performance while prevention-focused coping was negatively related to task performance. More specifically, within the job demands-resources theory, Brenninkmeijer et al. (2010) focused specifically on the moderating effect of regulatory foci on the proposed outcomes of the job demands-resources model. They found support for the moderating role of prevention focus on the relationship between job demands and the outcome exhaustion process and for workers with high promotion focus experiencing higher outcome motivational processes regardless of the level of job resources. Additionally, Brenninkmeijer et al. (2010) found that job resources have a more profound impact on outcome motivational processes including work engagement, affective commitment, and job satisfaction for those with low promotion regulatory focus. Based on these findings, we make several propositions on the interaction of prevention regulatory focus with the proposed relationships between the exogenous variables and overall justice. We propose:

> *H5a: Prevention regulatory focus will moderate the negative relationship between cognitive demands and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.*
>
> *H5b: Prevention regulatory focus will moderate the negative relationship between workload and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.*
>
> *H5c: Prevention regulatory focus will moderate the negative relationship between adverse work conditions and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.*

H6a: Prevention regulatory focus will moderate the positive relationship between autonomy and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.

H6b: Prevention regulatory focus will moderate the positive relationship between development opportunity and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.

H6c: Prevention regulatory focus will moderate the positive relationship between supervisory coaching and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.

H7: Prevention regulatory focus will moderate the negative relationship between job strain and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.

Idson and Higgins (2000) studied the impacts of success and failure feedback along with chronic effectiveness impact motivation. They ultimately found that those high in promotion focus experienced increased motivation and work performance with positive feedback while those high in prevention focus experienced increased motivation and performance with negative feedback. Van-Dijk and Kluger (2004) explored the role of feedback sign and the moderating role of regulatory foci on worker motivation. They specifically focused on the interaction of positive versus negative feedback and regulatory focus on motivation variation. They found that success drives higher motivation for high promotion focus individuals while failure increases motivation for high prevention focus individuals. The authors followed up their findings with an additional study including task type as a moderator of feedback direction on motivation and performance (Van Dijk & Kluger, 2011). They established that some tasks align with promotion focus while others align with prevention focus. Prevention task types are described as those requiring

vigilance and attention to detail in comparison to those requiring creativity which they described as promotion focused tasks. Interestingly, they found a negative relationship between positive feedback and motivation on work performance when performing prevention type tasks. Conversely, the results for promotion type tasks showed harmonious effects of feedback sign on motivation and work performance. For the present study, we characterize performance feedback not solely in a manner of positive or negative but, rather, focus on its existence as part of overall job resources. In our opinion, warehouse tasks are more closely aligned with prevention tasks according to Van Dijk and Kluger's (2011) definition.

Higgins et al. (1997) investigated the moderating role of goal strength in the emotional responses to goal attainment. Their conceptualization of goal strength was defined as the accessibility of a goal in accordance with prevention and promotion focus. Prevention focused goals are described as those like duties and responsibilities, or ought goals, while promotion goals are characterized as chronic ideal goals, or those concerning hopes and aspirations. They found that emotional responses to goal attainment align directionally with goal orientation in that high promotion focus resulted in greater cheerfulness-dejection while high prevention focus drove greater responses of quiescence-agitation. Świątkowski and Dompnier (2020) conducted a small-scale meta-analysis on six separate studies digging further into performance goals and situational regulatory focus. They found statistical evidence that performance-approach goals relate more positively with achievement when pursued with performance focus, and performance-avoidance goals have an attenuated negative impact on achievement when pursued with prevention focus. We approach the different types of goals previously employed in the extant

literature in the form of goal clarity and the worker's understanding of how well it relates to their work output. Therefore, it is also hypothesized that:

> *H8: Prevention regulatory focus will moderate the positive relationship between goal clarity and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.*

3.1.3 Justice Perceptions and Work Performance

Organizational justice and work performance have a well-established relationship in extant literature. Work performance is defined as behaviors or actions that are relevant to the goals of the organization (Campbell, 1990). We employ work performance along three dimensions: task performance, contextual performance, and counterproductive work behaviors. Task performance is conceptualized based on Koopman et al. (2011) as the proficiency with which one performs central job tasks. Contextual performance describes individual behaviors that support the organizational, social, and psychological environments in which the organization's technical core must function, and counterproductive work behaviors is defined as actions that harm the well-being of the organization (Koopmans et al., 2011). Motowidlo et al. (1997) described the technical core of an organization as the creation of the goods and services that are an organization's products. Task performance has a direct relation to this technical core, whereas contextual performance does not.

This study adopts a dimension of organizational justice that captures overall justice perceptions of the organization as employed by Ambrose & Still (2009). Overall justice is defined as global evaluation of the fairness of an organization based on personal experiences and the experiences of others (M. Ambrose & Schminke, 2009; Holtz &

Harold, 2009). As noted in the review of organizational justice literature, perspectives on the dimensionality of organizational justice remain varied, but support for both overall justice's and the many other dimensions of organizational justice's impact on work performance persist. Devonish and Greenidge (2010) found supporting evidence of distributive, procedural, and interactional justice's positive impact on task performance and contextual performance along with a significantly negative impact on counter-productive work behaviors. Wang et al. (2010) found support for interactional justice being the best predictor of task performance both directly and through leader member exchange and normative commitment mediators while also indirectly impacting interpersonal facilitation and job dedication. Distributive and procedural justices were indirect influencers of all outcome variables but had no direct impacts. Swalhi et al. (2017) found support for the impact of overall justice on job performance through the mediating effect of affective commitment. Of note to the current study, Swalhi et al. (Swalhi et al., 2017) found overall organizational justice to be a better predictor of job performance than any of the three sub-dimensions independently. Based on the supporting literary evidence, we posit:

> *H9a: As perceptions of overall justice increase, perceptions of task performance will increase.*
>
> *H9b: As perceptions of overall justice increase, perceptions of contextual performance will increase.*
>
> *H9c: As perceptions of overall justice increase, perceptions of counterproductive work behaviors will decrease.*

Based on the proposed research model of the current study, we posit overall justice as a mediator based on the existing body of knowledge of organizational justice's perceived influence on work performance. Support for many of the aforementioned hypotheses

leverage extant findings of the exogenous and moderating variables impact on dimensions of work performance, and part of this study's contribution will be examining those relationships through the mediating effect of overall justice.

3.1.4 Controls

In the current study we control for several variables in accordance with control application provided by Berneth and Aguinis (2016). We control for demographic variables age, gender, education, and relevant job experience. Relevant job experience captures the total experience working in a warehouse environment under the target conditions. As a worker accumulates experience in performing a job, they are more likely to find efficiencies within the processes and tasks that may help them be more productive in execution (Avolio et al., 1990). Likewise, more general previous warehouse experience, even if only similar to a worker's current role, also lends itself to the same advantage, but maybe to a lesser extent. A summary of construct definitions utilized in this research effort is provided in Table 1.

Table 1: Construct Definitions

Construct (abbr.)	Definition (source)
Cognitive Demand (CD)	The level of cognitive load and concentration required in the job. (Morgeson & Humphrey, 2006)
Work Conditions (WC)	The physical and environmental conditions in which job tasks are conducted. (Morgeson & Humphrey, 2006)
Workload (WL)	A quantitative description of work completion expectations within a given timeframe. (Bakker et al., 2003)
Autonomy (AU)	The freedom permitted the workers to make decisions about their work. (Karasek, 1985)
Development Opportunity (DO)	Resources that help enhance knowledge and skill, leading to potential career advancements (Zhang & Farndale, 2020)
Supervisory Coaching (SC)	Constructive feedback provided by a superior that is designed to maximize output by showing respect and value for the worker. (Ellinger et al, 2005)
Job Strain (JSI)	The difference between psychological job demands and job control. (Le et al., 2023)
Goal Clarity (GC)	The degree to which work related goals are defined and relate to the work output. (Sawyer, 1992)
Prevention Regulatory Focus (PF)	Self-regulation with a concern for safety and security. (Hamstra et al., 2014)
Overall Justice (OJ)	A global evaluation of the fairness of an organization based on personal experiences and the experiences of others. (Holtz & Harold, 2009; Ambrose & Schminke, 2009)
Task Performance (TP)	The proficiency with which one performs central job tasks. (Koopmans et al., 2011)
Contextual Performance (CP)	Individual behaviors that support the organizational, social, and psychological environment in which the technical core must function. (Koopmans et al., 2011)
Counterproductive Work Behaviors (CW)	Action that harms the well-being of an organization (Koopmans et al., 2011)
Controls	
Age	Participant age
Gender	Participant gender
Education	Participant level of education
Job Experience	Total years of relevant experience working in a role within a warehouse environment where one is held accountable to a goal directly related to their work outputs.

3.2 Research Design

This study utilized a quasi-experimental design including a quantitative survey instrument constructed and delivered using Qualtrics Core XM survey software. The survey was hosted online and delivered virtually to qualified subjects. Subjects were screened for applicable job experience, and the main study generated primary data used in analysis of the theorized research model. Both the unit of analysis and unit of observation for the pilot and main studies were the individual worker.

This research effort addressed the research questions and proposed hypotheses in three parts, firstly via an informed pilot and quantitatively via a subsequent general pilot and the main study. The informed pilot was conducted with the purpose of establishing content validity and face validity of the research instrument. The general pilot was used to ensure methods of delivery are appropriate and that the instruments and resulting data possessed internal consistency reliability as theorized in the research model. Any obstacles in the general pilot study were then remedied before distribution to a larger sample population in the main study.

3.3 Measures

Each variable in this research study was measured via survey instrument employing four and five-point Likert scales of varying bounds. The total survey length was 78 questions. Target average survey completion time was expected to be 20 minutes in duration. Survey items for all constructs in the research model were adopted from previous research with evidence of satisfactory internal consistency reliable and modified where necessary for this research study.

The scales operationalized for cognitive demand and work conditions were adopted from Morgeson and Humphrey (2006). Cognitive demand was measured with four items and work conditions with five items. Examples from the cognitive demand and work conditions scales asked, "The job requires me to keep track of more than one thing at a time" and "The workplace is excessively noisy" respectively. Responses for both measures ranged from 1 = strongly disagree to 5 = strongly agree. The workload dimension was operationalized via a scale from Bakker et al. (2003) with four items scored from 1 = never to 5 = always. An example workload item asked, "The job requires working very fast." Responses for all items related to job demand dimensions were coded such that higher scores reflected increased job demands.

Autonomy and development opportunity were operationalized based on scales from Morales (2022) with six and five items respectively. An example autonomy item asked, "I am able to decide how to execute my work." An example development opportunity item asked, "My job allows me to be promoted." The supervisory coaching scale was adopted from Xanthopoulou et al. (2007) and contained six items such as, "My supervisor uses their influence to help me solve my problems at work." The answer scale for all job resource dimensions ranged from 1 = strongly disagree to 5 = strongly agree such that higher scores reflected increased job resources.

Job strain was measured using the Job Strain Index (JSI) according to Le et al. (2023). The JSI was comprised of two scales, a job demand index and a job control index, both sourced from Karasek's (1979) Demand-Control Model. The job demand index was composed of four items such as, "How often do you get contradictory requests from two or more people?" The response scale for items in the job demand index ranged from 1 =

never to 5 = always / daily depending on the question. The job control index was composed of six items. An example asked, "Can you influence decisions that are important to your work?" The response scale for items in the job control index ranged from 1 = to very little degree / never / very bad to 4 = very good or 5 = to a very high degree / almost all the time. The responses to all items were dichotomized as exposed and non-exposed based on logic from Le et al. (2023) where the scales were split at the median. The mean for each of the job demand and job control indices was then calculated before being summed and divided by two to produce the JSI value. A higher JSI value represented higher levels demand and lower levels of control, and lower JSI values were indicative of the inverse (Le et al., 2023).

The goal clarity construct was operationalized via a five item scale adopted from Sawyer (1992). Respondents are asked to indicate their level of clarity in various aspects of their work. Example items from this scale asked for clarity on "My duties and responsibilities" and "The goals and objectives of my job" scored from 1 = extremely unclear, 5 = extremely clear.

The prevention regulatory focus scale was adopted from Wallace et al. (2009) to ascertain worker self-regulated goal motivations. Operationalization of the prevention regulatory focus construct asked respondents to score how often they focused on seven different thoughts and activities from 1 = never to 5 = always. Example activities included "Following rules and regulations" and "Completing work tasks correctly."

Overall justice was measured using the Perceived Overall Justice (POJ) scale adopted from Ambrose and Schminke (2009). The scale consisted of six statements with three items focusing on personal justice experiences such as "Overall, I'm treated fairly by my organization" and three items assessing general organizational fairness like "In general,

I can count on this organization to be fair". Responses to the scale ranged from 1 = strongly disagree to 5 = strongly agree.

Finally, the dimensions of work performance comprising our dependent variables were operationalized using scales from Koopmans et al.'s (2014) Individual Work Performance Questionnaire (IWPQ) to measure task performance, contextual performance, and counterproductive work behaviors. All three scales referenced the frequency of relevant actions performed in the prior three months, and each was scored from 1 = never to 5 = always. An example task performance item asked how often "I managed to plan my work so that it was done on time," and the contextual performance scale asked the frequency of actions such as "I took on extra responsibilities" and "I started new tasks myself when my old ones were finished." Counterproductive work behaviors concerned the frequency of actions such as "I complained about unimportant matters at work" and "I made problems greater than they were at work."

Control variables were measured via directly observable responses to single questions for age, gender, education, and relevant job experience. See Appendix I for the full survey instrument employed in this study.

3.4 Informed Pilot

The informed pilot was conducted in July of 2023. A purposive sampling approach was utilized with four subjects selected to participate based on their knowledge in general academic research methods and/or business environments applicable to this research endeavor. Participants had no prior knowledge of the pertinent research questions, proposed research model, or applicable methodologies of interest to this study.

Participants were provided an introduction to the research along with construct definitions and the survey instrument. After reviewing the information in detail, participants provided feedback on the content and organization of the survey instrument with a purpose to ensure clarity and understanding in survey delivery to the target respondent population and to help drive accuracy and precision in their responses. Example feedback included limiting responses to a single Likert scale that adequately captures variation in response amongst participants and removal of "*and"* / "*or"* wording from survey items to ensure no ambiguity in response applicability. Attention checks were also suggested for implementation in the survey considering its overall length. Additionally, clarity in some construct definitions were suggested, as some constructs were thought to contain too many measurement items. All feedback was considered and actioned before proceeding to the pilot study. Wording for specific survey items were edited for succinctness and some construct measures were replaced with measures of better reliability and lesser survey items. Two attention check questions were also added and evenly dispersed throughout the survey.

3.5 Pilot Study

The pilot study was executed in October of 2023. Subjects were targeted online via Amazon Mechanical Turk (MTurk). MTurk was selected for its large population of users (workers), ease of access to workers in the population of interest, and cost effectiveness of acquiring the target population. Aguinis et al. (2021) notes a more than 2000% growth in MTurk usage in management research between 2012 and 2019 driven by very similar benefits as noted in this study.

Aguinis et al. (2021) also provide a number of recommendations in implementing MTurk for research purposes to help overcome challenges that may lead to validity threats. Many of these recommendations were heeded in our study. MTurk workers were required to be 18 years or older, have completed 50 or more virtual tasks on the platform (identified as Human Intelligence Tasks or HITs), and have a HIT approval rate of 95% amongst all completed tasks. These qualifications were enacted to ensure targeted workers had some prior level of success effectively completing HITs on the MTurk platform.

The Qualtrics XM hosted survey instrument was organized firstly with eligibility questions to ensure participants matched the target population. Employment status, work industry, and functional role were all assessed for eligibility to proceed in the survey. Failure of any eligibility question resulted in the immediate end of the survey. Next, demographic and applicable job experience questions comprised the controls section. The remaining survey items consisted of validated instruments pertaining to each construct of interest as identified in Section 4.3.

The survey was open for participation for a period of one week. Subjects were allowed a maximum of one hour to complete the survey. Survey participants were required to answer every question in the survey with no skipping of questions allowed. Subjects who did not fully complete the survey were removed from the response data to ensure survey response rate was maximized. Two attention check questions were employed at even intervals throughout the survey, and subjects that failed attention check questions were removed from the data to limit inattentive respondents. Thomas and Clifford (2017) provide support for this approach based on their review of extant literature and findings that exclusion of response data based on attention check failures helped to improve

statistical power with no effect to pre-exclusion effects or introduction of unintended biases.

3.5.1 Pilot Demographics

The pilot study utilized a random sampling of 60 respondents. This sample size was determined to be sufficient given our primary pilot focus of ensuring adequacy of the survey instrument and internal consistency reliability amongst variables using previously validated instruments. Rules of thumb vary in sample size estimation for reliability studies ranging from 15-20 as suggested by Fleiss (1988) to 300 or more as recommended by Nunnally and Bernstein (1994). Charter (1999) found in his study of over 6,000 reliability coefficients in 161 tests that 59% of the sample sizes were less than 100 and 86% were less than 200.

Descriptive statistics for the pilot study are provided in Table 2. Male participants comprised the majority, 75%, of the sample population with females representing the remaining 25%. The majority, 58.3%, of respondents were aged 25 – 34 while 25% of respondents were aged 35 – 44. Age ranges of 18 – 24 and 45 – 54 year-old participants each individually represented 8.3% of the pilot sample. Reported education levels were surprisingly high for the sample pilot population with 76.7% of pilot respondents having a 4-year college. 13.3% reported having a master's degree while 5% reported having a high school diploma and 3.3% have a 2-year degree. Lastly, years of relevant job experience in a similar role within a warehouse environment was also captured with 58.3% possessing one to five years of relevant experience. 33.3% of respondents had between five and ten

years of relevant experience. Of the remaining sample population, 5% had more than 10 years of relevant experience while only 3.3% had less than one year of relevant experience.

3.5.2 Pilot Results

Internal consistency reliability for each construct was assessed using Cronbach's alpha coefficient, α. Cronbach's alpha coefficient is a generalized measure of the reliability of a multi-item scale, and it was introduced by L. Cronbach in his 1951 study (Cronbach, 1951; Peterson, 1994). Cortina (1993, p. 100) defines the alpha coefficient further as "…a function of the extent to which items in a test have high communalities and thus low uniqueness. It is also a function of interrelatedness, although one must remember that this does not imply unidimensionality or homogeneity." It is one of if not the most utilized measures of reliability because of ease of use in comparison to other reliability tests such as test-retest and interrater reliability (Streiner, 2003). It is not without its challengers in more recent times based on improper assumptions as highlighted by McNeish (2018) and misinterpretation of results as noted by Panayides (2013). Nonetheless, we proceed with the use of Cronbach's alpha coefficient based on its continued prevalence in social science research. Table 2 summarizes the internal reliability of the constructs in the pilot study data. Values of alpha below 0.5 are generally considered unacceptable, and values of 0.5 and above have historically been considered from poor to excellent. Very high values above 0.9 have been deemed desirable as shown in Taber (2018), but alternate opinions exist suggesting too high an alpha may indicate narrow coverage of a construct to the detriment of person measures (Kline, 1979; Panayides, 2013; Streiner, 2003).

Table 2: Pilot Study Descriptive Statistics & Reliability (n = 60)

Construct	Item_Code	Mean	SD	α
Cognitive Demand	JD_CD_1	4.267	0.629	0.672
	JD_CD_2	4.000	0.913	
	JD_CD_3	4.067	0.834	
	JD_CD_4	3.983	0.885	
Workload	JD_WL_1	3.633	1.032	0.773
	JD_WL_2	3.850	0.963	
	JD_WL_3	3.900	0.831	
	JD_WL_4	4.083	0.862	
Work Conditions	JD_WC_1	3.833	1.128	0.791
	JD_WC_2	3.900	0.889	
	JD_WC_3	3.417	1.100	
	JD_WC_4	3.967	0.912	
	JD_WC_5	3.417	1.215	
Autonomy	JR_AU_1	4.033	0.730	0.749
	JR_AU_2	4.050	0.956	
	JR_AU_3	4.117	0.798	
	JR_AU_4	4.100	0.961	
	JR_AU_5	4.133	0.865	
	JR_AU_6	4.117	0.798	
Development Opportunity	JR_DO_1	4.133	0.785	0.705
	JR_DO_2	4.133	0.763	
	JR_DO_3	4.033	0.816	
	JR_DO_4	4.067	0.873	
	JR_DO_5	4.133	0.806	
Supervisory Coaching	JR_SC_1	3.933	0.873	0.742
	JR_SC_2	4.067	0.873	
	JR_SC_3	4.133	0.826	
	JR_SC_4	4.233	0.761	
	JR_SC_5	4.083	0.822	
Job Strain	JDI	58.330	14.676	

Goal Clarity	GC_1	4.317	0.591	0.708
	GC_2	4.117	0.877	
	GC_3	4.083	0.842	
	GC_4	4.267	0.814	
	GC_5	4.183	0.695	
Prevention Regulatory Focus	PF_1	4.067	0.793	0.763
	PF_2	3.917	0.936	
	PF_3	4.133	0.785	
	PF_4	4.083	0.781	
	PF_5	3.917	0.759	
	PF_6	4.100	0.831	
Overall Justice	OJ_1	4.083	0.690	0.677
	OJ_2	3.967	0.912	
	OJ_3	4.083	0.842	
	OJ_4r	2.483	1.162	
	OJ_5	4.100	0.700	
	OJ_6r	2.183	0.975	
Task Performance	TP_1	3.883	0.777	0.663
	TP_2	3.850	0.703	
	TP_3	4.183	0.764	
	TP_4	3.833	0.840	
	TP_5	4.083	0.862	
Contextual Performance	CP_1	3.933	0.727	0.865
	CP_2	4.133	0.884	
	CP_3	3.733	0.834	
	CP_4	4.100	0.907	
	CP_5	3.883	0.798	
	CP_6	4.133	0.903	
	CP_7	3.850	0.792	
	CP_8	3.967	1.095	
Counterproductive Work Behaviors	CW_1	3.733	0.854	0.805
	CW_2	3.800	1.077	
	CW_3	3.683	1.008	
	CW_4	3.850	1.030	
	CW_5	3.800	0.792	
Controls	Ctrl.Age	3.333	0.745	
	Ctrl.Edu	4.983	0.826	
	Ctrl.Gender	0.250	0.433	
	Ctrl.Experience	2.417	0.690	

4. DATA ANALYSIS & RESULTS

The main study survey was made available to qualified workers via Amazon MTurk in November of 2023 for a period of one week. Workers who attempted or completed the pilot survey were excluded from participation in the main study. Participants were given up to 60 minutes to complete the 78-item survey. A total of 205 full responses were collected for the main study. Guidance on sufficient sampling varies greatly in the literature, and a number of considerations were taken in selection of the main study sample size. MacCallum et al. (1999) utilized a Monte Carlo study to show that a sample size of 100 could produce sufficient convergent validity in a factor analysis 78.7% of the time or more based on a variable to factor ratio of 10:3. The variable to factor ratio employed in the present study was 5.33, index factors not considered. Other components of the study design such as the relatively large number of indicators for each latent variable, the proposal of only linear effects, no missing data, and the use of structural equation modeling and confirmatory factor analysis also lend itself to a smaller required sample as highlighted by Kyriazos (2018). Ultimately, we follow the guidance set forth by Hair et al. (2022) who suggest a minimum sample of 155 when considering minimum path coefficients between 0.11 and 0.2 and 5% significance level.

Similar to the pilot study, respondents were not allowed to skip questions without answering and only completed surveys were taken for analysis. Reponses with failed attention checks responses were also removed from the response data set. In total 32 responses were removed from the final data set for invalid completion codes or failed attention checks. In all, 173 full, qualified responses were exported from Qualtrics XM and prepared in Microsoft Excel before importing into SmartPLS for analysis. The

remainder of this section describes descriptive statistics of the main study data set, robustness checks of the data set for validity of analysis, and hypothesis testing results and interpretations.

4.1 Demographics & Data Descriptors

The main study demographic information is summarized in Table 3. Male participants represented 70.5% of the main study respondents, and 29.5% of respondents were female. 66.5% of respondents were aged 25 – 34, and the next largest represented age range was 35 – 44-year-old respondents at 20.2%. Respondents aged 18 – 24 were the smallest represented age group at 3.5%. A majority of respondents, 52%, reported having earned a 4-year college degree. 15.6% of respondents possessed only a high school diploma while 27.2% held a master's level degree. Lastly, 49.1% of respondents had more than one but less than five years of relevant job experience in a similar role within a warehouse environment. Respondents possessing between five and ten years of relevant experience represented 34.6%, while those with more than 10 years of relevant experience accounted for 11.5% of the sample. The smallest representative group was those with less than one year of relevant experience at 2.9%.

Table 3: Main Study Demographic Characteristics (n = 173)

Control	Response	Mean	SD	Freq.	% of Sample	Cumulative %
Age	18 - 24	3.4	0.82	6	3.5	3.5
	25 - 34			115	66.5	69.9
	35 - 44			35	20.2	90.2
	45 - 54			10	5.8	96
	55 - 64			7	4	100
Education	High school graduate	4.79	1.341	27	15.6	15.6
	Some college			3	1.7	17.3
	2-year degree			3	1.7	19.1
	4-year degree			90	52	71.1
	Master's degree			47	27.2	98.3
	Doctorate			3	1.7	100
Gender	Male	1.29	0.457	122	70.5	70.5
	Female			51	29.5	100
Job Experience	< 1 year	2.61	0.846	5	2.9	2.9
	1 to < 5 years			85	49.1	52
	5 to < 10 years			63	36.4	88.4
	10 to < 15 years			12	6.9	95.4
	15+ years			8	4.6	100

4.2 Data Quality Criteria

These main study data was analyzed using SmartPLS v.4.0.9.6 software (Ringle et al., 2022). Confirmatory factor analysis was employed to establish the factor structure of the main study data because all measures utilized were well established in the extant literature with supporting validity. Construct items were assessed for strength of loading to intended constructs as well as cross-loadings to unintended constructs. Items with unfavorable loadings were removed from the analysis and construct validity analyzed recursively with each adjusted iteration of the measurement model. Only constructs that remained with at least three items were retained. The results of the factor analysis resulted in an updated conceptual model that was promoted for hypothesis testing. The seven emerging constructs are highlighted in Table 4 with loadings shown supporting the reduced factor model.

Table 4: Cross Loadings of Reduced Factor Model

Item_Code	AU	CP	JSI	OJ	PF	WC	WL
CP_1	0.417	0.683	-0.274	0.448	0.393	0.333	0.43
CP_2	0.481	0.791	-0.094	0.488	0.428	0.357	0.513
CP_6	0.512	0.797	-0.17	0.482	0.465	0.326	0.434
CP_7	0.395	0.717	-0.053	0.403	0.336	0.269	0.374
JDI	-0.084	-0.199	1	-0.063	-0.229	0.04	-0.1
JD_WC_1	0.467	0.42	-0.009	0.326	0.271	0.852	0.579
JD_WC_2	0.332	0.325	0.021	0.27	0.129	0.763	0.509
JD_WC_3	0.308	0.236	0.048	0.156	0.096	0.702	0.438
JD_WC_4	0.331	0.345	0.025	0.297	0.266	0.774	0.549
JD_WC_5	0.244	0.17	0.205	0.087	0.125	0.63	0.413
JD_WL_1	0.52	0.505	-0.119	0.428	0.424	0.598	0.805
JD_WL_2	0.531	0.437	0.038	0.409	0.409	0.562	0.793
JD_WL_3	0.397	0.394	-0.01	0.361	0.416	0.463	0.73
JD_WL_4r	-0.432	-0.494	0.198	-0.465	-0.505	-0.493	-0.801
JR_AU_1	0.753	0.485	-0.096	0.47	0.41	0.245	0.384
JR_AU_3	0.769	0.429	-0.124	0.502	0.57	0.287	0.387
JR_AU_5	0.719	0.436	0.056	0.441	0.477	0.452	0.49
JR_AU_6	0.735	0.457	-0.074	0.457	0.456	0.418	0.539
OJ_2	0.538	0.482	-0.005	0.804	0.506	0.2	0.419
OJ_3	0.521	0.531	-0.116	0.802	0.585	0.256	0.407
OJ_5	0.464	0.464	-0.027	0.819	0.519	0.374	0.472
PF_3	0.555	0.417	-0.202	0.591	0.813	0.187	0.399
PF_4	0.475	0.445	-0.208	0.482	0.768	0.112	0.363
PF_5	0.496	0.462	-0.183	0.525	0.75	0.255	0.479
PF_6	0.394	0.301	-0.072	0.372	0.674	0.243	0.48

Note: AU-Autonomy, CP-Contextual Performance, JSI-Job Strain, OJ-Overall Justice, PF-Prevention Regulatory Focus, WC-Work Conditions, WL-Workload

Outer loadings for all indicators were examined for indicator reliability. We followed the guidance of Hair et al. (2022) in retaining outer loadings greater than 0.708. Three indicators were retained below this cutoff to maintain internal consistency reliability and convergent reliability. Internal consistency reliability for each construct was assessed using Cronbach's alpha coefficient, α. Alpha coefficients were found to be safely within the acceptable range as defined in literature between 0.732 and 0.814 for all constructs (Panayides, 2013). Hair et al. (2022) consider the alpha coefficient to be a conservative

estimate of internal consistency reliability based on its assumption of reliability equity amongst all indicators and its sensitivity to the number of items included in each scale. SmartPLS, therefore, also provides a composite reliability, ρ_C, which is a more liberal reliability estimator and, consequently, considered an upper bound on internal consistency reliability. Therefore, Hair et al. (2022) suggest using composite reliability estimate ρ_A based on the work of Dijkstra (2010) that lies between Cronbach's alpha and ρ_C.

Hair et al. (2022) describe convergent validity as the extent to which a measure correlates with alternative measure of the same construct. We assess convergent validity using the average variance extracted (AVE) for each construct which is calculated as the average of all squared loadings of the indicators for each construct. The AVE should be equal to or greater than 0.50, as this means that at least 50% of variance in the indicators are explained by the construct (Hair et al., 2022). Cronbach's alpha coefficient, composite reliability estimate ρ_A, and AVE for the seven constructs are shown in Table 5 along with the latent variable correlations.

Table 5: Main Study Reliabilities, Validities, & Correlations

	α	**ρ_A**	**AVE**	**AU**	**CP**	**JSI**	**OJ**	**PF**	**WC**	**WL**
AU	0.732	0.734	0.554	***0.744***						
CP	0.737	0.742	0.56	0.606	***0.748***					
JSI	*n/a*	*n/a*	*n/a*	-0.084	-0.199	***n/a***				
OJ	0.735	0.736	0.654	0.629	0.611	-0.063	***0.808***			
PF	0.747	0.764	0.567	0.644	0.545	-0.229	0.666	***0.753***		
WC	0.814	0.849	0.559	0.466	0.432	0.040	0.341	0.260	***0.748***	
WL	0.790	0.796	0.613	0.601	0.588	-0.100	0.534	0.562	0.676	***0.783***

Note: AU-Autonomy, CP-Contextual Performance, JSI-Job Strain, OJ-Overall Justice, PF-Prevention Regulatory Focus, WC-Work Conditions, WL-Workload

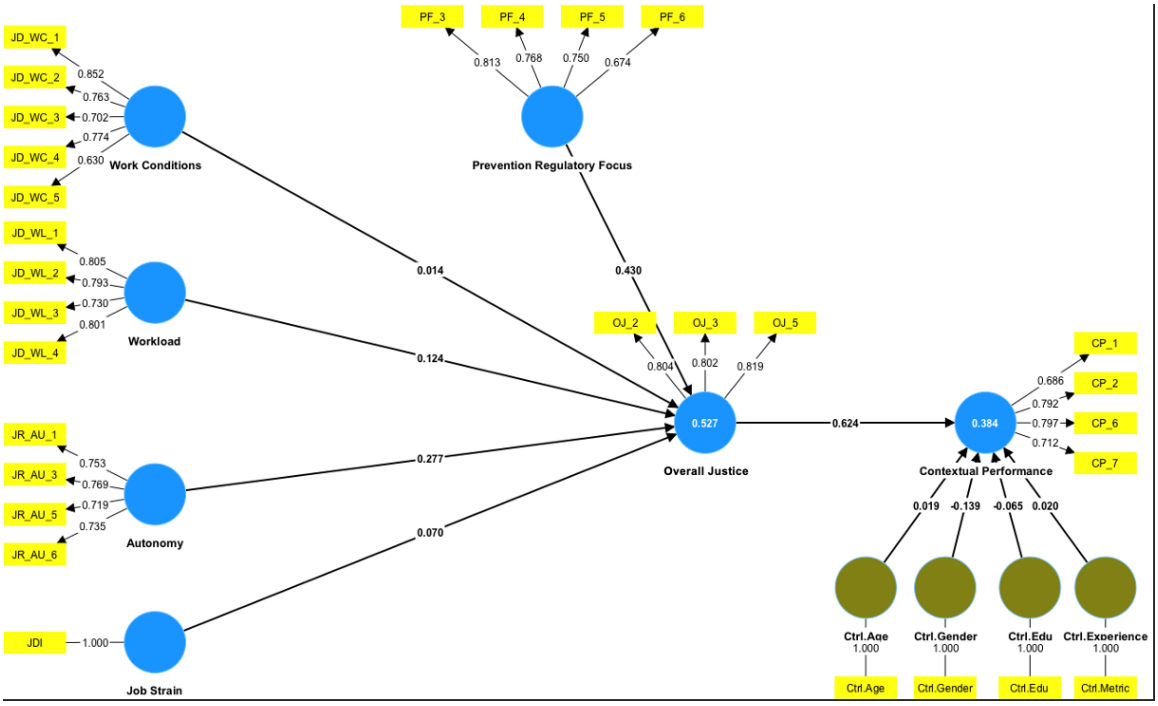
Note: The $\sqrt{AVE}$ appears on the diagonals, italicized and bolded.

Note: *n/a* - not applicable to single item measure

Discriminant validity was assessed using the Fornell-Larcker criterion (Fornell & Larcker, 1981). Hair et al. (2022) define discriminant validity as the extent to which a construct is empirically distinct from all other constructs under consideration. This approach assesses whether the square root of the AVE for each construct is greater than the correlation between the construct and all other constructs. Discriminant validity is evidenced in Table 5 with the square root of the AVE, shown on the diagonal, exceeding the correlations shown for all constructs individually. Discriminant validity and convergent validity were further confirmed by examination of loadings/cross-loadings of each scale item amongst all other items as shown in Table 4.

Figure 2 displays the structural equation model as deployed in SmartPLS. Collinearity was assessed using the variance inflation factor (VIF) which is computed as the inverse of the compliment of a predictor's multiple correlation coefficient. The multiple correlation coefficient gives the proportion of variance of a predictor explained by all other predictors and can take on values from one to infinity (Thompson et al., 2017). Collinearity amongst predictor variables was not a concern, as VIF values for all items in the measurement model were between 1.000 and 1.910, less than the commonly used cutoffs rules for potential collinearity issues of three, five, or ten (Thompson et al., 2017). Additionally, Kock (2015) proposed that occurrences of VIF greater than 3.3 are indicative of not only collinearity but also the potential presence of common method bias. Therefore, because all VIFs in the inner model of this study are less than 3.3, we also concluded that our model is free of common method bias.

Figure 2: Main Study Structural Equation Model



4.3 Hypothesis Testing

The bootstrapping algorithm in SmartPLS was utilized to test the hypotheses purported in this research effort. The bootstrapping algorithm is a nonparametric procedure that tests path coefficients for significance from a number of bootstrap samples drawn from the original sample with replacement (Hair et al., 2022). Bootstrapping was conducted using 5,000 subsamples, complete results and percentile bootstrap confidence interval method, two-tailed testing with a 0.05 significance, and standard settings for the PLS-SEM algorithm. With respect to the proposed mediating effect of overall justice, we included consideration for the indirect effects of the exogenous variables on the endogenous contextual performance variable in addition to the direct effects of the exogenous variables on the overall justice mediating variable. The bootstrapping algorithm includes the indirect

effect sampling distribution instead of the Sobel test as described by Hair et al. (2022). In consideration of the proposed moderating effect of prevention regulatory focus, a two-stage approach was employed as also suggested by Hair et al (2022) based on the work of Chin et al. (2003). In the first stage, we considered the direct effect of prevention regulatory focus on overall justice in addition to the other exogenous variables' proposed effects as shown in Figure 2. A subsequent second stage then considered the moderation between prevention regulatory focus and the exogenous variables on overall justice.

Table 6: Main Study Total Effects

Path	β	T Statistic	P value	
Direct Effects				
Autonomy -> Overall Justice	0.277	2.456	0.014	*
Job Strain -> Overall Justice	0.07	1.023	0.307	
Overall Justice -> Contextual Performance	0.624	8.754	0.000	***
Prevention Regulatory Focus -> Overall Justice	0.43	4.847	0.000	***
Work Conditions -> Overall Justice	0.014	0.147	0.883	
Workload -> Overall Justice	0.124	1.261	0.207	
Indirect Effects				
Autonomy -> Contextual Performance	0.173	2.241	0.025	*
Job Strain -> Contextual Performance	0.044	0.992	0.321	
Prevention Regulatory Focus -> Contextual Performance	0.268	4.326	0.000	***
Work Conditions -> Contextual Performance	0.009	0.147	0.883	
Workload -> Contextual Performance	0.077	1.212	0.225	
Controls				
Ctrl.Age -> Contextual Performance	0.019	0.251	0.802	
Ctrl.Edu -> Contextual Performance	-0.065	0.909	0.363	
Ctrl.Experience -> Contextual Performance	0.02	0.265	0.791	
Ctrl.Gender -> Contextual Performance	-0.139	1.068	0.286	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

The results of the bootstrapping procedure on the first stage structural equation model are presented in

Table 6 including path coefficients, t-statistic, and p-values of the inner model. With respect to the main effects of the exogenous variables on overall justice and overall justice's effect on contextual performance, we found evidence of significant relationships between autonomy and overall justice ($\beta = 0.277$, $t = 2.456$, $p < .05$) as well as between prevention regulatory focus and overall justice ($\beta = 0.043$, $t = 4.847$, $p < .001$). Additionally, we found a statistically significant relationship between overall justice and contextual performance ($\beta = 0.624$, $t = 8.754$, $p < .001$). These results show support for hypotheses H2a and H9b. We do not find supporting evidence for hypotheses H1b, H1c, or H3. Focusing on the indirect effects of the exogenous variables on contextual performance, we found statistically significant results for both the relationships between autonomy ($\beta = 0.173$, $t = 2.241$, $p < .05$) and prevention regulatory focus ($\beta = 0.268$, $t = 4.326$, $p < .001$) on contextual performance. There was no supporting statistical evidence of the relationships between job strain, work condition, or workload on contextual performance.

In the second stage, we explored the results of the moderating effect of prevention regulatory focus. However, no statistical evidence was found for the moderating interaction of prevention regulatory focus and any of the remaining exogenous variables' relationship to overall justice in the second stage. Consequently, we do not find supporting evidence for hypotheses H5b-c, H6a, or H7, and we proceeded with further analysis of only the first stage model as shown in Figure 2. A summary of hypothesis results is presented in Table 7.

Table 7: Summary of Hypothesis Testing Results

Hypothesis		Result	Significance
H1a	As perceptions of cognitive demand increase, perceptions of overall justice will decrease.	N/A	
H1b	As workload perceptions increase, perceptions of overall justice will decrease.	Not supported	β = .124
H1c	As perceptions of adverse work conditions increase, perceptions of overall justice will decrease.	Not supported	β = .014
H2a	As perceptions of autonomy increase, perceptions of overall justice will increase.	**Supported**	β = .277*
H2b	As development opportunity perceptions increase, perceptions of overall justice will increase.	N/A	
H2c	As perceptions of supervisory coaching increase, perceptions of overall justice will increase.	N/A	
H3	As perceptions of job strain increase, perceptions of overall justice will decrease.	Not supported	β = .070
H4	As goal clarity increases, perceptions of overall justice will increase.	N/A	
H5a	Prevention regulatory focus will moderate the negative relationship between cognitive demands and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.	N/A	
H5b	Prevention regulatory focus will moderate the negative relationship between workload and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.	Not supported	β = .013
H5c	H5c: Prevention regulatory focus will moderate the negative relationship between adverse work conditions and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.	Not supported	β = .004
H6a	Prevention regulatory focus will moderate the positive relationship between autonomy and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.	Not supported	β = -.154
H6b	Prevention regulatory focus will moderate the positive relationship between development opportunity and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.	N/A	

H6c	Prevention regulatory focus will moderate the positive relationship between supervisory coaching and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.	N/A	
H7	Prevention regulatory focus will moderate the negative relationship between job strain and overall justice such that the effect will be less pronounced for those with high prevention regulatory focus versus those with low prevention regulatory focus.	Not supported	β = -.056
H8	Prevention regulatory focus will moderate the positive relationship between goal clarity and overall justice such that the effect will be strengthened for those with high prevention regulatory focus versus those with low prevention regulatory focus.	N/A	
H9a	As perceptions of overall justice increase, perceptions of task performance will increase.	N/A	
H9b	As perceptions of overall justice increase, perceptions of contextual performance will increase.	**Supported**	β = .611***
H9c	As perceptions of overall justice increase, perceptions of counterproductive work behaviors will decrease.	N/A	

Note: N/A indicates hypothesis was not tested, * p < .05, ** p < .01, *** p < .001

4.4 Explanatory Power & Effect Size

The structural equation model analyzed in this study included two endogenous variables, overall justice and the main variable of focus contextual performance. Hair et al. (2022) provides guidance for interpreting coefficient of determinants, R^2, as 0.25 (Weak), 0.5 (Moderate), & 0.7 (Strong). In examining the coefficient of determination for both endogenous variables, we found 52.7% of the variance explained in overall justice and 37.3% of the variance explained in contextual performance.

The effect size, f^2, describes the change in variance explained of endogenous variables when specific predecessor constructs are omitted. This descriptor helps to evaluate the strength of the relationship between predecessors and endogenous variables. Guidelines for assessing f^2 explain values of 0.02, 0.15, and 0.35 respectively represent

small, medium, and large effects (Cohen, 1988). Among the relationships with evidence of statistical support, we found autonomy's and prevention regulatory focus's effect size on overall justice was small and moderate at $f^2 = 0.077$ and $f^2 = 0.187$ respectively, while overall justice's effect size on contextual performance was large at $f^2 = 0.595$.

Table 8: Main Study Effect Sizes

Path	f^2
Autonomy -> Overall Justice	0.077
Job Strain -> Overall Justice	0.010
Overall Justice -> Contextual Performance	0.595
Prevention Regulatory Focus -> Overall Justice	0.187
Work Conditions -> Overall Justice	0.000
Workload -> Overall Justice	0.012

4.5 Predictive Power

We took two approaches in assessment of the research model's predictive power using the PLS-Predict / CVPAT algorithm in SmartPLS with settings set to 10 folds, 10 repetitions, and a fixed seed random number generator (Shmueli et al., 2016). Hair et al. (2022) note that out of sample predictive power and generalizability of results found using PLS path models are critical to ensuring results have utility in managerial decision-making. We firstly assessed Stone-Geisser's predictive relevance (Q^2) for the ability to predict indicator data items in the reflexive measurement model's endogenous constructs (Geisser, 1974; Stone, 1974). We found all Q^2 values to be greater than zero for both the endogenous contextual performance and overall justice constructs indicating our PLS path model's prediction error was less than that of the most naïve benchmark. Additionally, the Q^2 values for all the individual, reflexive items comprising these constructs were greater than

zero, and six of seven items in the PLS path model had mean absolute error (MAE) and root mean square error (RMSE) values less than MAE and RMSE values in the Linear Model (LM) prediction benchmark. These findings indicated moderate to high predictive power for our PLS path model. Secondly, we assessed the cross-validated predictive ability test (CVPAT) to determine our model's predictive ability. In doing so, we compared the average loss difference in our PLS path model to both a naive indicator-average (IA) prediction benchmark and the LM prediction benchmark. Versus the IA prediction benchmark, we found our overall PLS path model is significantly better, and similarly versus the LM prediction benchmark, we found the PLS path model is also significantly better. The results indicated our PLS path model has strong predictive validity.

Table 9: Main Study Explanatory Power & Predictive Summary

			Overall Justice	Contextual Performance	Overall
		R^2	0.527	0.384	
		Q^2	0.464	0.354	
		RMSE	0.749	0.818	
		MAE	0.529	0.624	
CVPAT - PLS-SEM	vs. IA	Avg. loss △	-0.263	-0.158	-0.203
		t value	3.178	4.147	4.296
		p value	0.002	0.000	0.000
	vs. LM	Avg. loss △	-0.015	-0.072	-0.048
		t value	0.565	2.394	2.446
		p value	0.573	0.018	0.015

5. DISCUSSION & IMPLICATIONS

This study aimed to answer research questions concerning which factors contribute to work performance and, more specifically, how regulatory focus impacts overall organizational justice perception and ultimately work performance in a warehouse environment. Our findings provide statistical support for some of the proposed contributing factors in the research model, while other factors lacked statistical significance in contributing to work performance. We find strong support evidence for the positive correlation between overall justice and contextual work performance. This result supports the assertion that workers in a warehousing environment rely on equity and fairness in organizational processes to drive improvements in individual performance.

We also find evidence of a positive correlation between autonomy and overall justice. This result asserts that workers with some level freedom in execution of their warehouse tasks also tend to have higher outlooks on the appropriateness of organizational process and perceptions of their resulting outcomes as it pertains to the individual worker. We can also ascertain that this freedom of work and improved perception of work outcomes are also predictive of higher perceptions of their individual contextual performance. With statistical evidence of an indirect, positive relationship between autonomy and contextual performance, we can also conclude that autonomy is positively correlated with contextual performance aligning with existing empirical evidence in the literature as shown by Gellatly and Irving (2001) and Bizzi and Soda (2011) for example.

Lastly, we find supporting evidence of increased overall justice and contextual performance in those workers with higher levels of prevention regulatory focus. With this finding, we can conclude that those warehouse workers who take a more risk-adverse

pursuit of their work-related goals tend to have higher perceptions of appropriateness in organizational process outcomes as it pertains to their role. Similar to our findings on the correlation between autonomy and contextual performance, we also find a similar indirect, positive effect between prevention regulatory focus and contextual work performance. Therefore, it can also be concluded that workers with a higher proclivity for safely meeting work expectations and conservative goal approaches tend to result in higher perceptions of individual, contextual performance. The totality of these findings helps to provide evidence of factors that ultimately drive contextual work performance in warehouse environments. The results also provide evidence of individuals with more conservative goal-pursuit strategies having increased contextual performance perceptions within warehouse environments. Ultimately, this study effectively establishes key antecedents to contextual work performance perceptions that can be leveraged by academics and organizations alike in improving preferential operational outcomes.

Unexpectedly, we did not find support for any job demand related variables impact on overall justice perceptions or contextual performance. Considering the level of work experience present in our sample population, perhaps this lack of evidence was a result of familiarity with demands typical of roles within our target environment. Many locales within the United States (US) with high concentration of warehousing operations often compete for the same workforce which may drive congruency amongst work environments where no one job likely employs an outlier in job demands without appropriate resources to compensate. We also find prevention regulatory focus to play an anteceding role to both overall justice perceptions and contextual performance rather than the proposed moderating role between the exogenous constructs and overall justice. Perhaps this lack

of support of a moderating role for prevention regulatory focus on overall justice and contextual performance exists because workers enter these warehouse roles with an established regulatory focus state that does not interact with their perceptions of overall justice or contextual performance based on job demands and/or job resources encountered in the role.

5.1 Theoretical Implications

Theoretically, the findings of this research endeavor help to inform the extant body of knowledge of autonomy as a job resource, individual work performance, and organizational justice. We add to the body of knowledge by providing evidence of autonomy's and prevention regulatory focus's relationships to overall justice and contextual performance. One of the primary reasons for the inclusion of prevention regulatory focus in the research model was based on an assumption of regulatory fit between those with high prevention regulatory focus and typical job roles experienced in the warehousing context. Our findings help lend credence to this proposition as we find supporting evidence of a positive correlation between warehouse workers high in prevention focus and higher overall justice perceptions and contextual performance. The relationship amongst these variables as evidenced in this study help to support findings on regulatory fit and outcome value as presented by Higgins (2002). Whereas many extant studies on regulatory focus and work outcomes focus specifically on task performance, our findings of a positive and significant relationship between prevention regulatory focus and contextual performance provide a different perspective, albeit also in a different context, to findings where task performance was a primary focus such as with Johnson et al. (2011)

and Lanaj et al. (2011). Additionally, the empirical evidence of overall justice and contextual performance as positively related outcomes of prevention regulatory focus supplements existing literature linking regulatory focus theory and job demands-resources theory such as Brenninkmeijer et al. (2010).

Our findings also provide evidence of the role of overall justice in driving contextual performance, harmonious to findings in the extant literature such as with Devonish and Greenidge (2010). More specifically, our findings provide support for a unidimensional organizational justice construct and its positive relationship to contextual performance that helps to extend existing knowledge in the realm of organizational justice theory, much of which focuses on specific dimensions of organizational justice. We also establish the partial mediating role of overall justice in both prevention regulatory focus's and autonomy's relationship to contextual performance. While autonomy's correlation to contextual performance has been well established with empirical support in numerous studies, the majority of the extant research has focused on populations of knowledge-based or higher skilled workforces (Desa et al., 2019; Gellatly & Irving, 2001; Morgeson et al., 2005). Our findings provide evidence of this relationship specifically within the warehousing context amongst a population of blue-collar workers. We also provide empirical evidence of autonomy as an antecedent to overall justice, a relationship with infrequent study amongst the existing literature. With consideration for findings like that of Dishon-Berkovits (2018) where the author finds supporting evidence of overall justice's negative correlation to exhaustion and the extant body of knowledge in job demands-resource theory, our results provide evidence of a potential linkage between job-demands resources theory and organizational justice theory.

5.2 Practical Implications

This research effort helps to inform organizations of operational levers that can be utilized to drive improvements in individual contextual performance. The study's findings related to autonomy's impact on contextual performance highlight the importance of allowing some freedom of decision-making and execution in completing warehouse tasks. This may prove difficult for many organizations to allow, as many advancements in warehousing efficiency have leaned on systems and automation to make the most optimal decisions and removed this sort of decision-making away from the human workforce. However, highly rigid systems with no allowance for human intervention often fail to make the most optimal decision in all circumstances (Maule, 2010). Therefore, based on our results, it would be prudent to allow for some human element of decision making in warehouse processes both to the benefit of optimal execution and workers' overall organizational justice perceptions and individual performance.

Our findings also highlight the importance of fairness and appropriateness in organizational process outcomes in driving individual performance. To take advantage of this finding, organizations should look to improve their workers' perceptions of the many dimensions of organizational justice. For example, organizations may look to increase perceptions of the procedural justice dimension of organizational justice by ensuring that workers have an opportunity to provide input and/or feedback on processes and procedures that effect their work outcomes. Likewise, perception of the distributive justice dimension of organizational justice may be driven by the outward sharing of information amongst the broader worker population related to proceeds provided for effective performance. This

would help workers be informed of how their proceeds compare amongst their peers and afford them the opportunity to self-regulate their actions for a more desirable outcome.

Perhaps the most nuanced result of this study highlights the positive correlations between prevention regulatory focus perceptions and both overall justice and contextual work performance. This finding suggests some value in ascertaining an individual's goal pursuit orientation working in the warehousing environment such that goals and performance expectations can be set accordingly to provide desirable outcomes for the organization as it pertains to the individual worker. This is, if a worker's level of regulatory focus can be determined early in their tenure such as in the interview stage or during onboarding, the organization can have an informed outlook as to how the individual will perform based on their current organizational process structures and performance expectations. This might afford the organization the opportunity to strategically place the individual in a position or within a team or department that best aligns with the worker's goal pursuit strategy to drive optimal individual work performance.

5.3 Limitations & Considerations for Future Research

In addition to the study's contributions to the body of knowledge, the research also entailed several limitations. Firstly, our main endogenous variable of interest, contextual performance, was a self-reported variable that may be susceptible to self-rater bias. Holzbach (1978) notes that self-rater bias is prone to leniency errors, halo effects, and differential dimensionality. Future research endeavors may overcome such a limitation by employing a performance variable from the perspective of a different source such as a supervisor or colleague or from a more objective data measure such as actual rate of

productivity. Hoyt (2000) provides corrections for such biases and additional recommendations for minimizing the impact of rater biases such as using multiple raters per observation and/or employing a fully crossed design where all raters rate all observations.

Several constructs selected for this study were used based on the author's discretion of applicability to the environment of focus or for reasons of succinctness. For example, prevention regulatory focus was posited based on its assumed alignment to typical job designs and goal expectations in warehousing environments based on the author's experience. A higher order construct of organizational justice was employed for parsimonious value. To this point, future research studies should validate the applicability as assumed by the author by investigating other alternatives to the constructs utilized in the present study. This may include focusing on regulatory focus in its totality with the inclusion of the distinct but complementary spectrum of promotion regulatory focus. Similarly, based on our findings, future research should also investigate how additional dimensions of organizational justice such as distributive, procedural, interactional, or informational all or singularly interact in a similar model.

Another limitation of the present study was the amount of item reduction required in the factor analysis to establish discriminant and convergent validity. Though all scales utilized in the study were validated in extant literature, the high degree of initial correlations and cross-loadings amongst our study's variables resulted in substantial removal of items from each scale and the total removal of some constructs all together to establish discriminate validity. This lack of full construct validation to support all constructs in the full, original theorized research model as shown in Figure 1 resulted in

the inability to explore all proposed hypotheses. In further consideration of the original model, it is not surprising that some constructs displayed collinearity among each other, especially considering the pointed focus on specific roles within a single industry, resulting in a lesser number of total constructs examined in the resulting structural equation model. For example, development opportunity and supervisory coaching can be conceptualized as a very similar phenomena in a warehousing environment where a worker may rely on a single supervisor or supervisory structure for exposure to both factors. Additionally, perhaps the sample size or sample populations sourced from MTurk lay cause to such issues. Hauser et al. (2019) provided evidence of several issues concerning the usage of MTurk in social science research such as workers not investing sufficient time for valid survey response or falsely representing themselves to meet the target requirements of surveys. Perhaps the research questions might be better approached with a more abbreviated research model with more focus on fewer constructs of specific interest. Future research might examine such a model with more stringent sampling that could lead to improved data robustness and afford additional analysis of the research model.

This study focused solely on a population of warehouse workers within the US. However, supply chains in today's business environment frequently extend beyond national borders and cultures of any one locale. Therefore, the bounding of this study to single country presents an additional limitation on broader applicability. We do not consider how differences in organizations such as organizational culture, size, or structure might impact our results. Extant research provides evidence of organizational culture's role in impacting employees' work-life balance and their work performance (Gupta et al., 2022). Future research might investigate the impact of inclusion of populations of

warehouse workers in different countries and/or different organizational cultures. In addition to organizational culture, national or social culture pertaining to specific work locations might also be considered. Substantial evidence exists in the literature of national culture's role in significantly influencing other organizational factors (Gupta & Gupta, 2019). Given all the data in the current study is from US based participants, it would be interesting to examine the research model with a sample of warehouse workers from multiple countries.

Lastly, the globalization of supply chains and the movement of goods within it often necessitates varied placement of employees themselves to support the operation. Whereas this study specifically focused on worker who likely are domiciled within the four-walls of a warehouse, there typically exists and entire cast of employees supporting the supply chain operation whose productivity is also of interest to organizations. These associates are likely to have varied work environments supporting multiple points of distribution throughout the supply chain. The coronavirus disease of 2019 (COVID-19) fundamentally transformed work environments around the world and the supporting cast of supply chains were no exception. Working from home became a necessity in many cases even for those traditional enterprises that were deemed unsuitable for remote work. A growing body of research has found that, though remote work could enhance employee productivity, it can also cause exhaustion due to neuroticism or perhaps other factors (Parra et al., 2022). While the present study did not control for whether the employees were working on-site or remotely, this could be an interesting avenue for future research.

5.4 Conclusion

This research endeavor intended to provide evidence of factors contributing to improvements in individual work performance in warehouse environments. Apropos extant literature was leveraged to generate the research model including relationships established in theories of job-demands resources, regulatory focus, organizational justice, and individual work performance. Utilizing a partial least square structural equation model, we were able to find evidence of positive correlation between contextual work performance and each of autonomy, prevention regulatory focus, and overall justice constructs. These findings help extend the extant literature in the realms of individual work performance, organizational justice, and regulatory focus. We add to the body of knowledge empirical evidence of prevention regulatory focus's relationship to both overall justice and contextual work performance. These findings provide organizations with insights into levers that can be managed to help drive work performance and improve key operational metrics within their warehousing operations. Such insight should prove to be valuable in the current marketspace as supply chains and warehousing operations are pushed to provide even higher levels of service to an increasingly demanding customer base.

BIBLIOGRAPHY

Adams, J. S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology*, *67*, 422–436. https://doi.org/10.1037/h0040968

Adams, J. S. (1965). Inequity In Social Exchange. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 2, pp. 267–299). Academic Press. https://doi.org/10.1016/S0065-2601(08)60108-2

Aguinis, H., Villamor, I., & Ramani, R. (2021). MTurk Research: Review and Recommendations. *Journal of Management*, *47*, 823–837. https://doi.org/10.1177/0149206320969787

Ambrose, M. L., & Arnaud, A. (2005). Are procedural justice and distributive justice conceptually distinct? In *The handbook of organizational justice: Fundamental questions about fairness in the workplace* (pp. 59–84). Erlbaum.

Ambrose, M., & Schminke, M. (2009). The Role of Overall Justice Judgments in Organizational Justice Research: A Test of Mediation. *The Journal of Applied Psychology*, *94*, 491–500. https://doi.org/10.1037/a0013203

Anderson, D., & Stritch, J. (2015). Goal Clarity, Task Significance, and Performance: Evidence From a Laboratory Experiment. *Journal of Public Administration Research and Theory*. https://doi.org/10.1093/jopart/muv019

Avolio, B. J., Waldman, D. A., & McDaniel, M. A. (1990). Age and Work Performance in Nonmanagerial Jobs: The Effects of Experience and Occupational Type. *The Academy of Management Journal*, *33*(2), 407–422. https://doi.org/10.2307/256331

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. https://doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Bakker, A. B., Demerouti, E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J. G. (2003). A multigroup analysis of the job demands-resources model in four home care organizations. *International Journal of Stress Management*, *10*(1), 16. https://doi.org/10.1037/1072-5245.10.1.16

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, *43*(1), 83–104. https://doi.org/10.1002/hrm.20004

Bakker, A. B., & Heuven, E. (2006). Emotional dissonance, burnout, and in-role performance among nurses and police officers. *International Journal of Stress Management*, *13*(4), 423. https://doi.org/10.1037/1072-5245.13.4.423

Bakker, A. B., Van Emmerik, H., & Van Riet, P. (2008). How job demands, resources, and burnout predict objective performance: A constructive replication. *Anxiety, Stress, & Coping*, *21*(3), 309–324.

Batt, R. J., & Gallino, S. (2019). Finding a Needle in a Haystack: The Effects of Searching and Learning on Pick-Worker Performance. *Management Science*, *65*(6), 2624–2645. https://doi.org/10.1287/mnsc.2018.3059

Bernerth, J. B., & Aguinis, H. (2016). A Critical Review and Best-Practice Recommendations for Control Variable Usage: BERNERTH AND AGUINIS. *Personnel Psychology*, *69*(1), 229–283. https://doi.org/10.1111/peps.12103

Bies, R. J. (2001). Interactional (in) justice: The sacred and the profane. *Advances in Organizational Justice*, *89118*.

Bies, R. J., & Moag, J. S. (1986). Interactional justice: Communication criteria of fairness. In R. J. Lewicki, B. H. Sheppard, & M. H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol. 1, pp. 43–55). JAI Press.

Bizzi, L., & Soda, G. (2011). The Paradox of Authentic Selves and Chameleons: Self-monitoring, Perceived Job Autonomy and Contextual Performance: Self-monitoring, Autonomy and Contextual Performance. *British Journal of Management*, *22*(2), 324–339. https://doi.org/10.1111/j.1467-8551.2011.00747.x

Brazhkin, V. (2018). Outside the Box Warehousing: When Thinking of Inputs as Outputs Makes Sense. *Transportation Journal*, *57*(2), 219–233.

Brenninkmeijer, V., Demerouti, E., le, B. P. M., & Hetty, van E. I. J. (2010). Regulatory focus at work: The moderating role of regulatory focus in the job demands-resources model. *Career Development International*, *15*(7), 708–728. https://doi.org/10.1108/13620431011094096

Brenninkmeijer, V., & Hekkert-Koning, M. (2015). To craft or not to craft: The relationships between regulatory focus, job crafting and work outcomes. *Career Development International*, *20*(2), 147–162. https://doi.org/10.1108/CDI-12-2014-0162

Campbell, J. P. (1990). *Modeling the performance prediction problem in industrial and organizational psychology.*

Charter, R. A. (1999). Sample size requirements for precise estimates of reliability, generalizability, and validity coefficients. *Journal of Clinical and Experimental Neuropsychology*, *21*(4), 559–566.

Chen Idson, L., & Higgins, E. T. (2000). How current feedback and chronic effectiveness influence motivation: Everything to gain versus everything to lose. *European Journal of Social Psychology*, *30*(4), 583–592. https://doi.org/10.1002/1099-0992(200007/08)30:4<583::AID-EJSP9>3.0.CO;2-S

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Information Systems Research*, *14*(2), 189–217. https://doi.org/10.1287/isre.14.2.189.16018

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*(3), 386. https://doi.org/10.1037/0021-9010.86.3.386

Colquitt, J. A., & Greenberg, J. (2003). *Organizational justice: A fair assessment of the state of the literature.*

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334.

Cropanzano, R., & Byrne, Z. S. (2000). *Workplace justice and the dilemma of organizational citizenship.*

Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior*, *58*(2), 164–209.

Dai, L., & Xie, H. (2016). Review and Prospect on Interactional Justice. *Open Journal of Social Sciences*, *04*(01), 55–61. https://doi.org/10.4236/jss.2016.41007

De Cuyper, N., Van Der Heijden, B. I. J. M., & De Witte, H. (2011). Associations between perceived employability, employee well-being, and its contribution to organizational success: A matter of psychological contracts? *The International Journal of Human Resource Management*, *22*(7), 1486–1503. https://doi.org/10.1080/09585192.2011.561962

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, *32*(2), 454–464. https://doi.org/10.1046/j.1365-2648.2000.01496.x

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Desa, N. M., Abu Hassan Asaari, M. H., & Abd Razak, A. (2019). Participation in Activities and Autonomy with an Impact toward Task Performance and Contextual Performance among Engineers. *International Journal of Business and Management*, *14*(12), 79. https://doi.org/10.5539/ijbm.v14n12p79

Devonish, D., & Greenidge, D. (2010). The Effect of Organizational Justice on Contextual Performance, Counterproductive Work Behaviors, and Task Performance: Investigating the moderating role of ability-based emotional intelligence. *International Journal of Selection and Assessment*, *18*(1), 75–86. https://doi.org/10.1111/j.1468-2389.2010.00490.x

Dijkstra, T. K. (2010). Latent variables and indices: Herman Wold's basic design and partial least squares. In *Handbook of partial least squares: Concepts, methods and applications* (pp. 23–46). Springer.

Dishon-Berkovits, M. (2018). The Role of Organizational Justice and Stress in Predicting Job Burnout. *Journal of Career Development*, *45*(5), 411–424. https://doi.org/10.1177/0894845317705469

Ellinger, A. E., Ellinger, A. D., & Keller, S. B. (2005). Supervisory coaching in a logistics context. *International Journal of Physical Distribution & Logistics Management*, *35*(9), 620–636. https://doi.org/10.1108/09600030510634562

Faber, N., De Koster, R. B. M., & Smidts, A. (2018). Survival of the fittest: The impact of fit between warehouse management structure and warehouse context on warehouse performance. *International Journal of Production Research*, *56*(1–2), 120–139. https://doi.org/10.1080/00207543.2017.1395489

Fleiss, J. (1988). *The Design and Analysis of Clinical Experiments*. Wiley.

Folger, R., & Skarlicki, D. P. (1999). Unfairness and resistance to change: Hardship as mistreatment. *Journal of Organizational Change Management*, *12*(1), 35–50. https://doi.org/10.1108/09534819910255306

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *JOURNAL OF MARKETING RESEARCH*.

French, W. (1964). *The personal management process: Human resources administration*. Houngton Mifflin.

Fried, Y., & Ferris, G. R. (1987). The Validity of the Job Characteristics Model: A Review and Meta-Analysis. *Personnel Psychology*, *40*(2), 287–322. https://doi.org/10.1111/j.1744-6570.1987.tb00605.x

Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, *61*(1), 101–107.

Gellatly, I. R., & Irving, P. G. (2001). Personality, Autonomy, and Contextual Performance of Managers. *Human Performance*, *14*(3), 231–245. https://doi.org/10.1207/S15327043HUP1403_2

Goomas, D. T., Smith, S. M., & Ludwig, T. D. (2011). Business Activity Monitoring: Real-Time Group Goals and Feedback Using an Overhead Scoreboard in a Distribution Center. *Journal of Organizational Behavior Management*, *31*(3), 196–209. https://doi.org/10.1080/01608061.2011.589715

Greenberg, J. (1987). A taxonomy of organizational justice theories. *Academy of Management Review*, *12*(1), 9–22.

Greenberg, J. (1994). Using socially fair treatment to promote acceptance of a work site smoking ban. *Journal of Applied Psychology*, *79*(2), 288.

Greenberg, J., & Baron, R. A. (2003). *Behavior in organizations: Understanding and managing the human side of work*. Pearson College Division.

Greenberg, J., & Cropanzano, R. (1993). The social side of fairness: Interpersonal and informational classes of organizational justice. *Justice in the Workplace: Approaching Fairness in Human Resource Management; Cropanzano, R., Ed*.

Greenberg, J., & Folger, R. (1983). Procedural justice, participation, and the fair process effect in groups and organizations. *Basic Group Processes*, 235–256.

Grosse, E. H., Glock, C. H., Jaber, M. Y., & Neumann, W. P. (2015). Incorporating human factors in order picking planning models: Framework and research opportunities. *International Journal of Production Research*, *53*(3), 695–717. Business Source Complete.

Gummesson, E. (1987). USING INTERNAL MARKETING TO DEVELOP A NEW CULTURE—THE CASE OF ERICSSON QUALITY. *Journal of Business & Industrial Marketing*, *2*(3), 23–28. https://doi.org/10.1108/eb006032

Gupta, M., Gupta, A., & Cousins, K. (2022). Toward the understanding of the constituents of organizational culture: The embedded topic modeling analysis of publicly available employee-generated reviews of two major U.S.-based retailers. *Production and Operations Management*, *31*(10), 3668–3686. https://doi.org/10.1111/poms.13843

Gupta, M., & Gupta, S. (2019). Influence of National Cultures on Operations Management and Supply Chain Management Practices—A Research Agenda. *Production and Operations Management*, *28*(11), 2681–2698. https://doi.org/10.1111/poms.13100

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*(2), 250–279. https://doi.org/10.1016/0030-5073(76)90016-7

Hackman, S. T., Frazelle, E. H., Griffin, P. M., Griffin, S. O., & Vlasta, D. A. (2001). Benchmarking Warehousing and Distribution Operations: An Input-Output Approach. *Journal of Productivity Analysis*, *16*(1), 79–100. https://doi.org/10.1023/A:1011155320454

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

Hamstra, M. R. W., Sassenberg, K., Van Yperen, N. W., & Wisse, B. (2014). Followers feel valued—When leaders' regulatory focus makes leaders exhibit behavior that fits followers' regulatory focus. *Journal of Experimental Social Psychology*, *51*, 34–40. https://doi.org/10.1016/j.jesp.2013.11.003

Hauenstein, N. M. A., McGonigle, T., & Flinder, S. W. (2001). A Meta-Analysis of the Relationship Between Procedural Justice and Distributive Justice: Implications for Justice Research. *Employee Responsibilities and Rights Journal*.

Herzberg, F. (1970). The motivation-hygiene theory. *Management and Motivation*, 86–90.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*(12), 1280.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist*, *55*, 1217–1230. https://doi.org/10.1037/0003-066X.55.11.1217

Higgins, E. T. (2002). How Self-Regulation Creates Distinct Values: The Case of Promotion and Prevention Decision Making. *Journal of Consumer Psychology*, *12*(3), 177–191. https://doi.org/10.1207/S15327663JCP1203_01

Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, *72*(3), 515. https://doi.org/10.1037/0022-3514.72.3.515

Holtz, B. C., & Harold, C. M. (2009). Fair today, fair tomorrow? A longitudinal investigation of overall justice perceptions. *Journal of Applied Psychology*, *94*(5), 1185–1199. https://doi.org/10.1037/a0015900

Holzbach, R. L. (1978). Rater bias in performance ratings: Superior, self-, and peer ratings. *Journal of Applied Psychology*, *63*(5), 579.

Hoyt, W. (2000). Rater Bias in Psychological Research: When Is It a Problem and What Can We Do About It? *Psychological Methods*, *5*, 64–86. https://doi.org/10.1037/1082-989X.5.1.64

Johnson, P. D., Shull, A., & Wallace, J. C. (2011). Regulatory focus as a mediator in goal orientation and performance relationships. *Journal of Organizational Behavior*, *32*(5), 751–766. https://doi.org/10.1002/job.701

Johnson, R. E., King, D. D., (Joanna) Lin, S.-H., Scott, B. A., Jackson Walker, E. M., & Wang, M. (2017). Regulatory focus trickle-down: How leader regulatory focus and behavior shape follower regulatory focus. *Organizational Behavior and Human Decision Processes*, *140*, 29–45. https://doi.org/10.1016/j.obhdp.2017.03.002

Karasek, R. A. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, *24*(2), 285–308. https://doi.org/10.2307/2392498

Karasek, R. A. (1985). Job content questionnaire. *Journal of Occupational Health Psychology*.

Karriker, J. (2006). August. Organizational justice and organizational citizenship behaviors. *Annual Meeting of the Academy of Management, Atlanta, GA*.

Karriker, J. H., & Williams, M. L. (2009). Organizational Justice and Organizational Citizenship Behavior: A Mediated Multifoci Model †. *Journal of Management*, *35*(1), 112–135. https://doi.org/10.1177/0149206307309265

Kline, P. (1979). *Psychometrics and Psychology*.

Kock, N. (2015). Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. *International Journal of E-Collaboration*, *11*(4), 1–10. https://doi.org/10.4018/ijec.2015100101

Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., de Vet, H. C. W., & van der Beek, A. J. (2011). Conceptual Frameworks of Individual Work Performance: A Systematic Review. *Journal of Occupational and Environmental Medicine*, *53*(8), 856–866.

Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Van Buuren, S., Van der Beek, A. J., & De Vet, H. C. (2014). Improving the individual work performance questionnaire using rasch analysis. *Journal of Applied Measurement*, *15*(2), 160–175.

Kudelska, I., & Niedbal, R. (2020). TECHNOLOGICAL AND ORGANIZATIONAL INNOVATION IN WAREHOUSING PROCESS--RESEARCH OVER WORKLOAD OF STAFF AND EFFICIENCY OF pICKING Stations. *E+M Ekonomie a Management*, *23*(3), 67–82. https://doi.org/10.15240/tul/001/2020-3-005

Kudelska, I., & Pawłowski, G. (2020). Influence of assortment allocation management in the warehouse on the human workload. *Central European Journal of Operations Research*, *28*(2), 779–795. Business Source Complete.

Kyriazos, T. A. (2018). Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. *Psychology*, *09*(08), 2207–2230. https://doi.org/10.4236/psych.2018.98126

Lanaj, K., Chang, C., & Johnson, R. (2011). Regulatory focus and work-related outcomes: A meta-analysis. *Psychological Bulletin*.

Le, G. H., Hermansen, Å., & Dahl, E. (2023). Constructing and validating an occupational job strain index based on five Norwegian nationwide surveys of living conditions on work environment. *BMC Public Health*, *23*(1), 50. https://doi.org/10.1186/s12889-022-14957-1

Leventhal, H. (1980). Toward A Comprehensive Theory of Emotion. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 13, pp. 139–207). Academic Press. https://doi.org/10.1016/S0065-2601(08)60132-X

Lind, E. A. (2001). Thinking Critically about Justice Judgments. *Journal of Vocational Behavior*, *58*(2), 220–226. https://doi.org/10.1006/jvbe.2001.1793

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, *4*(1), 84.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*, 370–396. https://doi.org/10.1037/h0054346

Maslow, A. H. (2013). *Toward a psychology of being*. Simon and Schuster.

Maule, A. (2010). Can Computers Help Overcome Limitations in Human Decision Making? *Int. J. Hum. Comput. Interaction*, *26*, 108–119. https://doi.org/10.1080/10447310903498684

McClelland, D. (1961). *The achieving society, Princeton, NJ: Van Norstrand Co*.

McGregor, D. (1960). Theory X and theory Y. *Organization Theory*, *358*(374), 5.

McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, *23*(3), 412–433. https://doi.org/10.1037/met0000144

Morales, H. (2022). An Examination of Job Resources and Self-determination in Employees' Job Involvement. *Doctoral Dissertation, Florida International University*.

Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The Importance of Job Autonomy, Cognitive Ability, and Job-Related Skill for Predicting Role Breadth and Job Performance. *Journal of Applied Psychology*, *90*(2), 399–406. https://doi.org/10.1037/0021-9010.90.2.399

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*(6), 1321. https://doi.org/10.1037/0021-9010.91.6.1321

Motowildo, S. J., Borman, W. C., & Schmit, M. J. (1997). A Theory of Individual Differences in Task and Contextual Performance. *Human Performance*, *10*(2), 71–83.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory*. McGraw-Hill.

Panayides, P. (2013). Coefficient Alpha: Interpret With Caution. *Europe's Journal of Psychology*, *9*(4), 687–696. https://doi.org/10.5964/ejop.v9i4.653

Park, S., & Choi, S. (2020). Performance feedback, goal clarity, and public employees' performance in public organizations. *Sustainability*, *12*(7), 3011.

Parra, C. M., Gupta, M., & Cadden, T. (2022). Towards an understanding of remote work exhaustion: A study on the effects of individuals' big five personality traits. *Journal of Business Research*, *150*, 653–662. https://doi.org/10.1016/j.jbusres.2022.06.009

Peterson, R. S. (1994). A Meta-Analysis of Cronbach's Coefficient Alpha. *Journal of Consumer Research*, *21*(2), 381–391.

Ringle, C. M., Wende, S., & Becker, J.-M. (2022). *SmartPLS 4*. SmartPLS. https://www.smartpls.com/

Roch, S. G., & Shanock, L. R. (2006). Organizational Justice in an Exchange Framework: Clarifying Organizational Justice Distinctions. *Journal of Management*, *32*(2), 299–322. https://doi.org/10.1177/0149206305280115

Rupp, D. E., & Cropanzano, R. (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organizational Behavior and Human Decision Processes*, *89*(1), 925–946.

Rybnicek, R., Bergner, S., & Gutschelhofer, A. (2019). How individual needs influence motivation effects: A neuroscientific study on McClelland's need theory. *Review of Managerial Science*, *13*(2), 443–482. https://doi.org/10.1007/s11846-017-0252-1

Sawyer, J. (1992). Goal and Process Clarity: Specification of Multiple Constructs of Role Ambiguity and a Structural Equation Model of Their Antecedents and Consequences. *Journal of Applied Psychology*, *77*, 130–142. https://doi.org/10.1037/0021-9010.77.2.130

Shmueli, G., Ray, S., Velasquez Estrada, J. M., & Chatla, S. B. (2016). The elephant in the room: Predictive performance of PLS models. *Journal of Business Research*, *69*(10), 4552–4564. https://doi.org/10.1016/j.jbusres.2016.03.049

Staudt, F. H., Alpan, G., Di Mascolo, M., & Rodriguez, C. M. T. (2015). Warehouse performance measurement: A literature review. *International Journal of Production Research*, *53*(18), 5524–5544. Business Source Complete.

Steers, R. M., Mowday, R. T., & Shapiro, D. L. (2004). THE FUTURE OF WORK MOTIVATION THEORY. *Academy of Management Review*.

Stewart, C., Nodoushani, O., & Stumpf, J. (2018). Cultivating Employees Using Maslow's Hierarchy of Needs. *Competition Forum*, *16*(2), 67–75.

Stone, M. (1974). Cross-Validatory Choice and Assessment of Statistical Predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, *36*(2), 111–133. https://doi.org/10.1111/j.2517-6161.1974.tb00994.x

Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, *80*(1), 99–103.

Swalhi, A., Zgoulli, S., & Hofaidhllaoui, M. (2017). The influence of organizational justice on job performance: The mediating effect of affective commitment. *Journal of Management Development*, *36*(4), 542–559. https://doi.org/10.1108/JMD-11-2015-0162

Świątkowski, W., & Dompnier, B. (2020). A regulatory focus perspective on performance goals' effects on achievement: A small-scale meta-analytical approach. *Learning and Individual Differences*, *78*, 101840. https://doi.org/10.1016/j.lindif.2020.101840

Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Thibaut, J. W., & Walker, L. (1975). *Procedural justice: A psychological analysis*. L. Erlbaum Associates.

Thomas, K. A., & Clifford, S. (2017). Validity and Mechanical Turk: An assessment of exclusion methods and interactive experiments. *Computers in Human Behavior*, *77*, 184–197. https://doi.org/10.1016/j.chb.2017.08.038

Thompson, C. G., Kim, R. S., Aloe, A. M., & Becker, B. J. (2017). Extracting the Variance Inflation Factor and Other Multicollinearity Diagnostics from Typical Regression Results. *Basic and Applied Social Psychology*, *39*(2), 81–90. https://doi.org/10.1080/01973533.2016.1277529

Tornblom, K. (1990). In press. The social psychology of distributive justice. *The Nature and. Administrationjustice: Interdisciplinary*.

Tosi, H., Rizzo, J., & Carroll, S. (1986). *Managing organizational behavior. Marshfield, Mass*. Pitman Publishing. TosiManaging organizational behavior1986.

Van Dijk, D., & Kluger, A. N. (2011). Task type as a moderator of positive/negative feedback effects on motivation and performance: A regulatory focus perspective. *Journal of Organizational Behavior*, *32*(8), 1084–1105. https://doi.org/10.1002/job.725

Van-Dijk, D., & Kluger, A. N. (2004). Feedback Sign Effect on Motivation: Is it Moderated by Regulatory Focus? *Applied Psychology*, *53*(1), 113–135. https://doi.org/10.1111/j.1464-0597.2004.00163.x

Voss, M. D., Calantone, R. J., & Keller, S. B. (2005). Internal service quality. *International Journal of Physical Distribution & Logistics Management*, *35*(3), 161–176. https://doi.org/10.1108/09600030510594558

Vries, J., Koster, R., & Stam, D. (2016). Aligning Order Picking Methods, Incentive Systems, and Regulatory Focus to Increase Performance. *Production & Operations Management*, *25*(8), 1363–1376. Business Source Complete.

Vroom, V. H. (1964). *Work and motivation.*

Wallace, J. C., Johnson, P. D., & Frazier, M. L. (2009). An examination of the factorial, construct, and predictive validity and utility of the regulatory focus at work scale. *Journal of Organizational Behavior*, *30*(6), 805–831. https://doi.org/10.1002/job.572

Wang, X., Liao, J., Xia, D., & Chang, T. (2010). The impact of organizational justice on work performance: Mediating effects of organizational commitment and leader-member exchange. *International Journal of Manpower*, *31*(6), 660–677. https://doi.org/10.1108/01437721011073364

Watling, C., Driessen, E., van der Vleuten, C. P. M., Vanstone, M., & Lingard, L. (2012). Understanding responses to feedback: The potential and limitations of regulatory

focus theory. *Medical Education*, *46*(6), 593–603. https://doi.org/10.1111/j.1365-2923.2012.04209.x

Webb, R. A., Williamson, M. G., & Yue (May) Zhang. (2013). Productivity-Target Difficulty, Target-Based Pay, and Outside-the-Box Thinking. *Accounting Review*, *88*(4), 1433–1457. Business Source Complete.

Wright, T. A., & Bonett, D. G. (1997). The contribution of burnout to work performance. *Journal of Organizational Behavior*, *18*(5), 491–499. https://doi.org/10.1002/(SICI)1099-1379(199709)18:5<491::AID-JOB804>3.0.CO;2-I

Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., & Schreurs, P. J. G. (2007). When do job demands particularly predict burnout?: The moderating role of job resources. *Journal of Managerial Psychology*, *22*(8), 766–786. https://doi.org/10.1108/02683940710837714

Yean, T. F., & Yusof, A. A. (2016). Organizational Justice: A Conceptual Discussion. *Procedia - Social and Behavioral Sciences*, *219*, 798–803. https://doi.org/10.1016/j.sbspro.2016.05.082

Zhang, L., & Farndale, E. (2021). Workforce age profile effects on job resources, work engagement and organizational citizenship behavior. *Personnel Review*, *51*(1), 194–209. https://doi.org/10.1108/PR-02-2020-0095

Zhang, Y., Zhang, Y., Ng, T. W. H., & Lam, S. S. K. (2019). Promotion- and prevention-focused coping: A meta-analytic examination of regulatory strategies in the work stress process. *Journal of Applied Psychology*, *104*(10), 1296. https://doi.org/10.1037/apl0000404

APPENDICES

Appendix I. Survey Instrument

#	Item_Code	Questions	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	JD_CD_1	The job requires me to monitor a great deal of information.	1	2	3	4	5
2	JD_CD_2	The job requires that I engage in a large amount of thinking.	1	2	3	4	5
3	JD_CD_3	The job requires me to keep track of more than one thing at a time.	1	2	3	4	5
4	JD_CD_4	The job requires me to analyze a lot of information.	1	2	3	4	5
			Never	Seldom	Sometimes	Frequently	Always
5	JD_WL_1	The job requires working very hard.	1	2	3	4	5
6	JD_WL_2	The job requires that I work very fast.	1	2	3	4	5
7	JD_WL_3	The job involves excessive work.	1	2	3	4	5
8	JD_WL_4r	The job allows enough time for tasks to be completed (reverse scored).	1	2	3	4	5
			Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
9	JD_WC_1	The work place is excessively noisy.	1	2	3	4	5
10	JD_WC_2	The climate at the work place is uncomfortable in terms of temperature and humidity.	1	2	3	4	5
11	JD_WC_3	The job has high risk of accident.	1	2	3	4	5
12	JD_WC_4	The job takes place in an environment containing health hazards (i.e., chemicals, fumes, etc.)	1	2	3	4	5
13	JD_WC_5	The job occurs in an unclean environment.	1	2	3	4	5
14	JR_AU_1	The job requires me to keep track of more than one thing at a time.	1	2	3	4	5

15	JR_AU_2	I am able to choose the way to go about my job.	1	2	3	4	5
16	JR_AU_3	I am free to choose the method (s) to use in carrying out my work.	1	2	3	4	5
17	JR_AU_4	I am able to decide how to execute my work.	1	2	3	4	5
18	JR_AU_5	I have the opportunity to decide myself the order of my work.	1	2	3	4	5
19	JR_AU_6	I have a lot of freedom to execute my job.	1	2	3	4	5
20	JR_DO_1	My job allows me to be promoted.	1	2	3	4	5
21	JR_DO_2	My job offers me opportunities for personal growth and development.	1	2	3	4	5
22	JR_DO_3	I have sufficient possibilities to develop myself at work.	1	2	3	4	5
23	JR_DO_4	My work offers me the opportunity to learn new things.	1	2	3	4	5
24	JR_DO_5	My job gives me the feeling that I can achieve something.	1	2	3	4	5
25	JR_SC_1	My supervisor uses their influence to help me solve my problems at work.	1	2	3	4	5
26	JR_SC_2	My supervisor lets me know how satisfied they are with my work.	1	2	3	4	5
27	JR_SC_3	My supervisor understands the problems and needs of my job.	1	2	3	4	5
28	JR_SC_4	My supervisor recognizes my potential.	1	2	3	4	5
29	JR_SC_5	In case of problem, my supervisor sticks up for me at their expense.	1	2	3	4	5

			Very Rarely	Quite Rare	Occasionally	Quiet Often	Very Often or Always
30	JSI_JDI_1	How often do you have to do things you think should have been done differently?	1	2	3	4	5
31	JSI_JDI_2	How often do you get job tasks without sufficient resources?	1	2	3	4	5
32	JSI_JDI_3	How often do you get contradictory requests from two or more people?	1	2	3	4	5
			Never	A few days a month	Once a week	A few days a week	Daily
33	JSI_JDI_4	How often do you have to skip lunch due to a heavy workload?	1	2	3	4	5
			To a very little degree	To a little degree	To some degree	To a high degree	To a very high degree
34	JSI_JCI_1	Can you decide yourself how to go about doing your work?	1	2	3	4	5
35	JSI_JCI_2	To what extent can you decide your own work pace?	1	2	3	4	5
36	JSI_JCI_3	Can you influence decisions that are important to your work?	1	2	3	4	5
			Very Bad	Bad	Good	Very Good	
37	JSI_JCI_4	What are the opportunities in your job to utilize the skills, knowledge and experience you have gained through education and work?	1	2	3	4	
38	JSI_JCI_5	How are the opportunities in your job to further develop skills in the areas you desire?	1	2	3	4	
			Never	25% of the time	Half the time	75% of the time	Almost all the time
39	JSI_JCI_6	Does your work consist of constantly repeated work tasks? (r)	1	2	3	4	5

		Indicate how certain or clear you are about each of the following aspects of your work…	Extremely unclear	Somewhat unclear	Neither clear nor unclear	Somewhat clear	Extremely clear
40	GC_1	My duties and responsibilities	1	2	3	4	5
41	GC_2	The goals and objectives for my job.	1	2	3	4	5
42	GC_3	How my work relates to the overall objectives of my work unit.	1	2	3	4	5
43	GC_4	The expected results of my work.	1	2	3	4	5
44	GC_5	What aspects of my work will lead to positive evaluations.	1	2	3	4	5
		Rate how often you focus on these thoughts and activities when you are working...	Never	Seldom	Sometimes	Regularly	Always
45	PF_1	Following rules and regulations	1	2	3	4	5
46	PF_2	Completing work tasks correctly	1	2	3	4	5
47	PF_3	Doing my duty at work	1	2	3	4	5
48	PF_4	My work responsibilities	1	2	3	4	5
49	PF_5	Fulfilling my work obligations	1	2	3	4	5
50	PF_6	On the details of my work	1	2	3	4	5
			Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
51	OJ_1	Overall, I'm treated fairly by my organization	1	2	3	4	5
52	OJ_2	In general, I can count on this organization to be fair	1	2	3	4	5
53	OJ_3	In general, the treatment I receive around here is fair	1	2	3	4	5
54	OJ_4	Usually, the way things work in this organization are not fair (r)	1	2	3	4	5
55	OJ_5	For the most part, this organization treats its employees fairly	1	2	3	4	5
56	OJ_6	Most of the people who work here would say they are often treated unfairly (r)	1	2	3	4	5

			Never	Seldom	Sometimes	Regularly	Often
57	TP_1	I am able to plan my work so that I finished it on time.	1	2	3	4	5
58	TP_2	I keep in mind the work result I needed to achieve.	1	2	3	4	5
59	TP_3	I am able to set priorities.	1	2	3	4	5
60	TP_4	I am able to carry out my work efficiently.	1	2	3	4	5
61	TP_5	I manage my time well.	1	2	3	4	5
62	CP_1	On my own initiative, I start new tasks when my old tasks were completed.	1	2	3	4	5
63	CP_2	I take on challenging tasks when they were available.	1	2	3	4	5
64	CP_3	I work on keeping my job-related knowledge up-to-date.	1	2	3	4	5
65	CP_4	I work on keeping my work skill up-to-date.	1	2	3	4	5
66	CP_5	I come up with creative solutions for new problems.	1	2	3	4	5
67	CP_6	I take on extra responsibilities.	1	2	3	4	5
68	CP_7	I continually seek new challenges in my work.	1	2	3	4	5
69	CP_8	I actively participate in meetings and/or consultations.	1	2	3	4	5
70	CW_1	I complain about minor work-related issues at work.	1	2	3	4	5
71	CW_2	I make problems at work bigger than they were.	1	2	3	4	5
72	CW_3	I focus on the negative aspects of situation at work instead of the positive aspects.	1	2	3	4	5
73	CW_4	I talk to colleagues about the negative aspects of my work.	1	2	3	4	5
74	CW_5	I talk to people outside the organization about the negative aspects of my work.	1	2	3	4	5

		Control Variables						
75	Ctrl.Age	Please select your current age.		18-24	25-34	35-44	45-54	55-64
76	Ctrl.Gender	Please select your gender.		Male	Female			
77	Ctrl.Edu	Please select the highest level of education completed.	High School	Some college	2 year degree	4 year degree	Masters	Doctorate
78	Ctrl.Exp	Indicate the total years of experience in a same or similar role working within a warehousing operation prior to role of reference used to answer questions for this study.		<1 year	1 to <5 years	5 to <10 years	10 to <15 years	15+ years

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