International Journal of Global Optimization and Its Application
Vol. 1, No. 4, December 2022, pp.236-248.
e-ISSN: 2948-4030
https://doi.org/10.56225/ijgoia.v1i4.102

Article

Review of Conservation of Resources Theory in Job Demands and Resources Model

Abdul Talib Bon [1,*], and Abdirahman Mohamud Shire [1]

[1] Department of Production and Operations Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Parit Raja, 86400, Malaysia; abdirahman@gmail.com
* Correspondence: talib@uthm.edu.my

Citations: Bon, A.T. & Shire, A.M. (2022). Review of Conservation of Resources Theory in Job Demands and Resources Model. *International Journal of Global Optimization and Its Application, 1*(4), 236-248.

Academic Editor: Aswin Nasution.

Received: 12 September 2022 Accepted: 18 November 2022 Published: 31 December 2022

Abstract: This paper provides background information about the underpinning theory of the model of job demands-resources model (JD-R model), which is the conservation of resources theory. The Conservation of resources (COR) theory became highly popular among researchers. Conservation of resources (COR) theory postulates the link between job demands-resources, personal resources, organizational commitment, work engagement, turnover intentions, and job performance. This paper discusses COR theory, which is the main theory that underpins the present research. This paper reviews the assumptions and development of the theory and presents an overview of important findings obtained with the theory and its association with JD-R model. The paper concludes with an agenda for future research and a brief discussion of the practical application of the theory in JD-R model.

Keywords: mathematical model; surgical scheduling; multi-period; capacity constraint; minimization.

1. Introduction

Conservation of resources (COR) theory postulates the link between job demands-resources, personal resources, organizational commitment, work engagement, turnover intentions, and job performance. "This section discusses COR theory, which is the main theory that underpins the present research. Figure 1 illustrates the major postulates of COR theory. The first three groups of postulates, namely the definitions of stress and motivation, the four kinds of resources, and the predictions of behaviour. A fourth group comprises three further principles of COR theory: (1) the primacy of loss, (2) loss and gain spirals, and (3) resource caravans. COR theory is defined as a general principle of minimization of loss and maximization of gain. According to the theory, individuals seek to acquire and maintain resources, including objects, personal characteristics, conditions, and energies. A loss of resources, or a threat of loss of resources causes stress, which in turn leads to job dissatisfaction, anxiety, and thoughts about quitting one's job (Chen & Huang, 2016). In first place, Hobfoll published COR theory in 1989, as an attempt to improve the existing stress theory es. Since then, COR theory has developed into one of the most frequently cited resource theories (Hobfoll, 2011; Madden et al., 2017). The two basic elements of COR theory are (a) resources and (b) operations or impacts on this resource (Kim et al., 2016). Taken together, resources and impacts on resources form the basis upon which COR theory explains and predicts human behaviour.

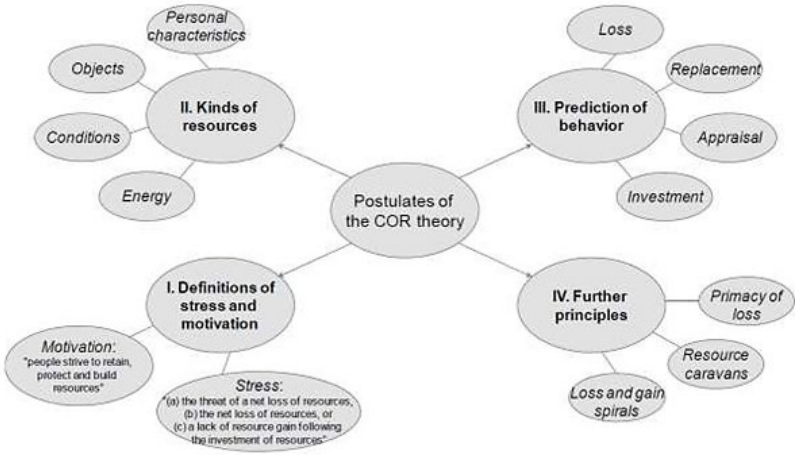

Figure 1. Postulates of COR Theory.

Source: Kim et al. (2016)

The theory posits that when an individual is confronted with the loss of resources, he/she will act in a way to minimize the loss, or to produce gain in an order of magnitude similar or greater to the loss (Kim et al., 2016). Individuals perceive losses differently and gains are always seen from the personal perspective of the individual (Chen & Huang, 2016). An important premise of COR theory is that in order to prevent stressful loss cycles of resources and to enhance motivating resource gain spirals, people need to invest resources. The more resourceful people are, the better they can do so. While increasingly common in the job stress and burnout literature, COR theory also has broad implications for the literature on motivation, work engagement, commitment, decision-making, and other psychological constructs (Hobfoll, 2011).

2. Understanding COR Theory as Stress and Motivation Theory

COR theory was originally developed by Hobfoll; with the intention of advancing traditional thinking on stress. Hobfoll (1989) and Spielberger (1994) even subtitled his first publication on COR ″a new attempt at conceptualizing stress″. Claiming that most of the stress theories existing at that time were tautological. He argued that the COR theory ″is more directly testable, comprehensive, and parsimonious than previous theories and that it provides a clearer direction for future research on stress and stress resistance″. However, COR theory is understood as a stress theory and as motivation and conceptualized as two sides of the same coin (Bakker et al., 2003; Hobfoll & Ford, 2007; Kim et al., 2016; Madden et al., 2017). The basic tenets of motivation (which leads to work engagement, affective commitment and higher job performance) cannot be understood without understanding stress (which leads to turnover intentions and lower job performance) (Chen & Huang, 2016). For this reason, it is essential to consider both aspects in this theory."

Stress theory based on COR theory: COR theory describes stress as a response to the environment in which there is (a) a danger of a net loss of resources, (b) the net loss of resources, or (c) a lack of resource gain following the investment of resources (Hobfoll, 1989; Spielberger, 1994). Three aspects of this definition are noteworthy. Stress can be rooted not only by actual stress (part (b) of the definition), but also by anticipated or feared stress (part (a)). Stress is not necessarily rooted externally but may be rooted by the very person who is experiencing it if he or she is unsuccessfully investing resources, according to part (c) of the definition. Most remarkably, Madden et al. (2017) and Hobfoll (1989) stated that net loss or lack of gain is not only a sufficient condition to explaining stress, but also a necessary situation. This means that ″loss would have to be central to all psychological stressors″ (Hobfoll, 2011; Kim et al., 2016). Similarly, according to Hobfoll, (2011), stress completely takes the form of a resource loss, and any event which cannot be interpreted as a resource loss for example a change, transition and challenge is not in itself stressful. When (Treadway et al., 2005) originally developed COR theory he criticized most of the stress theories existing at the time. "A succinct summary of Hobfoll (1989) and Treadway et al. (2005) criticism of these theories should help to understand the legitimacy and novelty of COR theory as a stress theory. One view of stress at the time was the response perspective propagated by Clausen & Borg (2011), Selye (1950) and Saari et al. (2017) who understand stress as an orchestrated defence reaction of the physiological system to environmental challenges (Chen & Huang, 2016; Treadway et al., 2005).

There are fundamentally three assessments of this analysis, all of which have been explained by COR theory. “First, the response analysis proposes that people react uniformly to stressors, all following a common response. on the other hand, ″how people act in response to challenges from their environment can be seen as a function of their personality, constitution, perceptions, and the context in which the stressor occurs″ (Kim et al., 2016; Treadway et al., 2005). Hence, COR theory understands stress and the stress reaction as relative to the level and nature of the individual's resources at a given point in time. Consequently, COR theory allows for different types of resistance reactions: individuals may choose between replacing or re-evaluating lost resources, shifting the focus away from lost resources, or investing other resources to regain lost resources. Second, defining stress exclusively based on the stress response implies that stressors can only be identified retrospectively, i.e., only after the stress response has occurred (Treadway et al., 2005). COR theory, on the other hand, defines stress based on both actual and anticipated loss, allowing for an anterior identification of stressors. Third, the response view is limited to a physiological operationalization of stress (Treadway et al., 2005). COR theory, as well as most other stress theories, incorporates both physiological and psychological views of stress; in fact, most modern stressors are of a psychological, rather than physiological, nature.”

A second analysis of stress popular at the time, also an environmental perspective, sought to identify normative stressors, for example, the stimulus causing stress (Treadway et al., 2005). The basic idea was to develop and categorize a finite list of events generally known for causing stress (Chen & Huang, 2016; Hobfoll, 2011; Kim et al., 2016). Generally, Treadway et al. (2005) agrees with the existence of normative stressors and acknowledges the importance of creating a taxonomy of these, since (1) it limits the world of events that one would otherwise have to observe; in order to study the stress process and (2) it provides the division between normal stress responding and neurotic symptoms (Bakker et al., 2003). Nevertheless he points out that the stimulus-view represents only one aspect of the stress phenomenon (Bakker et al., 2003). In some respects, the stimulus perspective and COR theory can be considered complementary. While the stimulus perspective does not look beyond the stressors, COR theory entirely disregards the nature of the stressor (understanding a stressor as any event that potentially causes loss) and focuses on the processes following the identification of a potential resource loss.”

The proposed third analysis of stress assumes a more cognitive approach, integrating the role of appraisal and the perspective of homeostasis. Folkman (2013) and Smith & Dyal (2016) proposed that stress results from an imbalance between the demands of the environment and the resources or coping capabilities of an individual. Specifically, they emphasized that the imbalance results from the individual's appraisal of demands and capabilities. Hobfoll (1989) and Treadway et al. (2005) critic here is three-fold, discarding the ″balance model″ for being ″tautological, overly complex, and not given to rejection″. The first critique, tautology, is grounded in a circular definition of demand and coping capacity: ″demand is that which is offset by coping capacity. Yet, coping capacity is that which offsets threat or demand″, which in addition is only based in perceptions. Hence, he calls for an anchoring point that would make these demands and coping capacities tangible; in COR theory, he provides such an anchor by offering the concept of resources.” In the second analysis, Hobfoll (1989) points out that Smith & Dyal (2016) balance theory requires two units for understanding stress, for example demands and coping capabilities. However, COR theory, in contrast, considerably reduces complexity by requiring only a single unit to understand stress, i.e. resources. Third, Hobfoll (1989) claims that it remains unclear how to measure the two concepts of demands and coping capabilities, and as a result the theory withdraws itself from the opportunity of testing and hence from rejection. COR theory, on the other hand, offers the COR evaluation scale as a meaningful measure of resources and has supported several empirical studies testing the theory's propositions (Torrente et al., 2012).”

Other than these three items of analysis, Treadway et al. (2005) and Hobfoll (1989) disagreed with the completely subjective definition of stress, as a result of which there is no stress without the perception of it. Instead, they suggested a definition that acknowledges both objective and subjective stress. In a later publication, Hobfoll (2011) specifically refers to Kaplan & Talbot (1983) definition of stress as the internal state that: ″reflects the subject’s inability to forestall or diminish perception, recall, anticipation, or imagination of disvalued circumstances, those that in reality or fantasy signify great and/or increased distance from desired (valued) experiential states, and consequently, evoke a need to approximate the valued states″ (Hobfoll, 2011).” The above mentioned definition connects subjectivity and objectivity in that ″the perceptions that are referred to are primarily reality-based and socially common within a culture, even if there is also an important additional individual component to such perceptions″ (Hobfoll, 2011). “Lastly, it can be observed that the balance theory is limited to the explanation of behaviour in stressful situations and does not offer insights into behaviour in stress-free situations. The balance theory does not

propose a satisfying rationale for why people should try to achieve more coping capabilities than are required to balance their demands. COR theory, on the other hand, also embraces a motivational theory and as such predicts behaviour even in non-stressful circumstances."

A fourth analysis represents a three-part approach that combines a differential perspective, the cognitive appraisal perspective and the environmental stimulus perspective, (Treadway et al., 2005). "Specifically, the role of an individuals' characteristics, such as his or her response disposition, is considered to interact with the particular stimulus and hence to influence the nature and intensity of the individual's response (Spielberger, 1994). This thinking has been particularly fruitful in research on text anxiety (Kim et al., 2016; Paulman & Kennelly, 1984). Notably, this fourth view is the approach that Treadway et al. (2005) and Hobfoll (1989) most agrees with. He emphasizes two advantages of the perspective: First, it illustrates both that certain events are commonly viewed as (Hobfoll, 1989; Treadway et al., 2005)." Second, it combines the environmental, appraisal, and personality views in a very balanced fashion and without overemphasizing one single view, a circumstance that Treadway et al. (2005) and Hobfoll (1989) calls a conceptual leap for stress researchers.

Therefore, COR theory divulges a very similar understanding of the stress mechanisms, offering some room for the influence of individual appraisal, but simultaneously stressing the role of normative stressors. "The third aspect, personality, is included in the resources offered by the COR evaluation scale. Hence, the individually perceived stress of a normative stressor is impacted by the availability of personal resources such as, optimism′. Finally, Spielberger (1994) stated that the stressful events can be reconciled with COR theory's definition of stress as the actual or perceived loss of resources. He suggests that events are stressful if they are perceived as threats to either the physical self (physical threats) or the phenomenological self (ego-threats). Adding to Spielberger (1994) definition the assumptions that (1) threats are caused foremost by losses and (2) the phenomenological self encompasses all resources that are valued by the individual, including material resources, energy resources, and social resources, then this definition is congruent with COR theory."

To sum up, "it has been shown how COR theory draws on the limitations of the response view, the stimulus view, and the balance theory to propose an enhanced stress concept. By focusing on resources as the single unit required understanding stress, it is more parsimonious than the discussed approaches. By additionally offering the COR evaluation scale as a means of measuring these resources, it is as well testable and avoids being tautological. By embracing both subjective and objective stress, and by following the three-part approach that balances the impact of stressor, appraisal, and personality, COR theory also bridges across the gap between environmental and cognitive perspectives (Hobfoll, 1989; Treadway et al., 2005). Finally, by furthermore predicting behaviour in stress free situations, it proves more comprehensive than prior approaches."

COR theory as a motivational theory: Notably, COR theory does not only conceptualize stress, but it is both a stress and motivational theory (Hobfoll, 2011; Madden et al., 2017). It also constitutes a motivational theory, since its basic tenet states that people strive to retain, protect, and build resources″ (Hobfoll, 1989; Spielberger, 1994). There are two motivational aspects: first, individuals seek to gain resources, and second, individuals seek to protect them from loss. The first aspect explains individuals' behaviour under stressful circumstances; that is, individuals are predicted to protect their resources from loss in order to avoid feelings of stress. When individuals cannot entirely prevent resource loss, they attempt to minimize the loss. This is achieved by either a resource replacement or a resource reappraisal. Both strategies, however, have the following limitations: (1) resource replacement involves a resource investment and, as such, must result in a net gain in order to be successful, while (2) resource reappraisal is not beneficial if it concerns resources which are basic to an individual's sense of self (Hobfoll, 1989; Spielberger, 1994). The second aspect explains individuals' behaviour when they are not confronted with stress; as such, it is a relative novelty within what was labelled as a stress theory. Specifically, people are thought to strive to develop resource surpluses in order to offset the possibility of future loss (Hobfoll, 1989; Spielberger, 1994). In order to achieve resource surpluses, people are predicted to actively invest their resources with the intention of earning a return on investment. An example: Investment in resources may be observed in good marriages. In such marriages, both partners are constantly contributing from what they have to each other and to the relationship. There is a long-term expectation, however, that their investment will produce a payoff in terms of returned love, esteem, affection, and security (Hobfoll, 1989; Treadway et al., 2005).

As well as sheltering people from future stressors, resource surpluses have a second function. Resource surpluses result in eustress, for example, psychological wellbeing: surplus of resources is a desired condition; it may act in ways that beget eustress, a sense of control and positive association with the environment″ (Madden et al., 2017). This view is shared by positive psychology and current wellbeing

research, which has sought to establish to what extent different resources contribute to psychological well-being (Chen & Huang, 2016). It needs to be remembered, however, that the motivation to protect resources from loss is stronger than the motivation to create resources surpluses for the sake of well-being (Hobfoll, 1989; Spielberger, 1994). Based on these two aspects, COR theory can be classified among the hedonic theories of motivation (Hobfoll, 2011; Madden et al., 2017). Hedonic theories have been described to (1) postulate a universal egoism according to which all human behaviour is motivated by self-interest, which (2) may take the form of a universal hedonism. The latter infers that the postulated self-interest consists of an optimized hedonic balance: it assumes that people are foremost motivated to remedy or prevent negative feelings and to retain or induce positive feelings (Kim et al., 2016).

According to Kim et al. (2016), prominent theories that fall into this class of hedonistic motivation theories are; dissonance theory (Yahya & Sukmayadi, 2020), self-discrepancy theory (Higgins, 1987) and equity theory (Walster et al., 1973). Freud (1970) pleasure principle, McLeod (2007) hierarchy of needs and Bandura (1977) social learning theory are associated with this category of theories. Hobfoll explicitly places COR theory in the tradition of Freud, Maslow, and Bandura, and COR theory indeed fulfils the definition of a hedonic motivation theory (Treadway et al., 2005). Universal hedonism is the basic motivation in COR theory, since resources are gained (a) for the sake of positive feelings of eustress created by resource surpluses and (b) in order to hedge resources losses, which would otherwise elicit the aversive feeling of stress. Notably, though, COR theory does not specify whether there is a homeostatic maximum for resource gains or whether individuals are motivated to gain resources indefinitely. Nor does it, on a resource level, distinguish between resources that follow a deficiency motivation and resources that follow a growth motivation—a meaningful differentiation offered by Treadway et al. (2005) and Maslow (1954).

However, Hobfoll (1989) predicts that people behave like good financial investors, who invest greater resources for greater payoff or for increased odds of payoff (for example, low risk). This would imply a mere growth motivation and hence an infinite process of resources maximization—only limited by the number of available investment opportunities that guarantee greater return than investment. Nevertheless, COR theory proposes a parsimonious, comprehensive, and testable motivation theory. On the down side, no substantial empirical research on COR theory as a motivation theory is known; COR theory as a stress theory, however, has widely been tested (An overview of studies in the domain of organizational stress is provided by Madden et al., (2017) and Hobfoll (2011).

To come to the point, stress and motivation in COR theory may be interpreted as two sides of the same coin. “On the one side of the coin, there is stress, which is caused by the actual or anticipated net loss of resources and huge demands (like job demands). Stress is mostly caused by external events but may also be self-caused through unsuccessful resource investments.” On the other side of the coin, there is the motivation to protect and gain resources. The existence of this motivation, however, is interdependent with the general existence of stress: it serves the purpose of replenishing resource levels after stressful events respectively creating a resource buffer for future stressful events. Stress in turn can also be viewed as interdependent with motivation. “The fundamental assumption that resource loss creates stress can be explained on the basis that possessing resources creates psychological well-being, and losing resources reduces well-being. Consequently, stress and motivation in COR theory (as the two sides of the coin) are both cantered on employees’ resources, share the common goal to maximize resource levels, and are to some extent interdependent. The latter circumstance is underlined by the postulate that resource gains are weighted higher in the light of resource loss (Freund & Riediger, 2001).

3. Resources of COR Theory

The central concept of COR theory is the resource. Hobfoll defines resources as the “objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies (Treadway et al., 2005). This means that the resources are categorized resources into four types: (a) objects, (b) conditions, (c) personal characteristics, and (d) energies. The classifications were validated by recent studies such as Kalpachidou et al. (2016) and Wilson et al. (2011). According to this self-referential definition, resources are important to the individual either (1) in a direct or primary sense (because of their very inherent value) or (2) in an indirect or secondary sense (because they may enable to acquire direct/primary resources). As Hobfoll, Madden et al. (2017) also pointed out, the four kinds of resources may differ in the degree that they represent direct/primary or indirect/secondary purposes. The first category of resources distinguished by Hobfoll, Madden et al. (2017) describes objects. Object resources are mainly direct resources and are valued because of some aspect of their physical nature or because of their acquiring secondary status value based on their

rarity and expense (Madden et al., 2017). As an example, a home is an object resource that is valued for providing shelter, while a mansion is an object resource that may be valued for indicating status (Madden et al., 2017). Hobfoll reasons that although objects have rarely been considered in stress research, they should be included in the resource category because they are linked to socioeconomic status, which in turn has proven to be an important factor in stress resistance (Madden et al., 2017).

As a second category of resources, Madden et al. (2017) speaks of conditions. Examples of condition resources are marriage or tenure, in the sense that ′being married to someone′ or ′being employed′ represent conditions. While conditions appear to be mainly direct resources, valued for their inherent qualities, they may also serve as secondary resources, e.g. when they hedge other resources from being lost. In the latter sense, several empirical research designs have substantiated the stress mediating effects of conditions, e.g. finding that living with someone resulted in decreased mortality rates for women with cancer, and that being married is a resistance resource (Madden et al., 2017). This notion is also largely supported by the findings of subjective well-being research and hedonic psychology (Hobfoll, 2011). However, Madden et al. (2017) qualifies that ″conditions are resources to the extent that they are valued or sought after″, which implies that the subjective value of a condition needs to be determined before its actual stress-resistance potential can be deducted.

The third category of resources refers to personal characteristics. According to Madden et al. (2017), these are ″resources to the extent that they generally aid stress resistance″, which suggests that they are primarily considered indirect resources. Personal characteristics fall into the category of general resistance resources as suggested by Kim et al., (2016), implying that one's personal orientation toward the world is the key″ (Madden et al., 2017). In this sense, the personal characteristics resource category takes a differential approach; this is in accordance with various research studies substantiating that certain personality traits and skills offer stress resistance (Madden et al., 2017). Examples of mediating personal characteristics are seeing events as predictable and generally occurring in one's best interest and a positive sense of self and a view that one can master or at least see through stressful circumstance (Madden et al., 2017).

The fourth and final category of resources consists of energies. Examples of energy resources include time, money, and knowledge. These resources are largely considered indirect/secondary resources, which serve the purpose of facilitating the acquisition of other resources (Madden et al., 2017). For example, (Kim et al., 2016) argues that in the course of goal-directed behaviour, individuals draw on energy resources such as money and social credit and evaluate the efficiency of their behaviour based on the consumption of these resources (amongst other factors). Others have suggested more specific energy resources, such as social capital, ″the goodwill that is engendered by the fabric of social relations and that can be mobilized to facilitate action″ (Kim et al., 2016), or cognitive energy, which takes the form of attention span and conscious control (Kim et al., 2016). Regarding cognitive energy, (Kim et al., 2016) contend that it is finite, unstable, rapidly consumed, and slow to recover, requiring timely replenishment before delay further undermines regulation efficiency. Equally, other energy resources, such as time, money, and social capital, are characteristically consumed when invested. In contrast, more ″structural″ Zohar (2003) energy resources such as knowledge and information are generally retained despite their investment. Overall, energy resources have scarcely been studied (Hobfoll, 1989; Madden et al., 2017).

Quite notably, social support is not included—or intended to fit—in any of the four kinds of resources. Spielberger (1994) argued that social support could play both a supporting and a detracting role: ″social relations are a resource to the extent that they provide or facilitate the preservation of valued resources, but they also can detract from individual's resources″. Nonetheless, only one year later Hobfoll et al. (1990) put forward their ″Conservation of social resources: social support resource theory,″ which is intended to extend COR theory by acknowledging the previously underestimated importance of social support. However, the handling of social resources by COR theory remains disputable for two reasons. First, the nature of several claims made in Hobfoll et al. (1990) conservation of social resources theory raise some challenges regarding social resources. Second, to date, the successional COR theory-related publications by Hobfoll and colleagues (Bakker et al., 2003; Chen & Huang, 2016; Hobfoll, 2011; Kim et al., 2016). have never explicitly integrated social resources into the original COR theory. Rather, they have maintained the original division of resources into objects, conditions, personal characteristics, and energies and continued to refer to issues of social support and social resources in an unstructured fashion.

4. How the COR Theory Predicts Behaviour?

One relatively unique aspect of COR theory is that its prediction of employees' behaviour extends beyond purely stressful circumstances to also include predictions of psychological or behavioural action

when employees are not confronted with stressors (Treadway et al., 2005). The four different types of resources identified above can be affected by four different types of impacts. Specifically, resources can be (1) lost, (2) replaced, (3) re-appraised, or (4) invested. As it will be shown, these four impacts are drawn upon to explain and predict stress, coping, prevention and motivation (they refer to both stressful and stress-free circumstances). Figure 2 offers a graphic depiction of the four resource categories as well as the four possible impacts (depicted as arrows). Notably, these impacts are either passive/exogenous or active/endogenous. By including active impacts, COR theory relocates people from the space of passively reacting to outside stressors to the space of actively managing and building their resources in order to hedge potential losses (Kim et al., 2016). The first impact type is exogenous and is the most prominent impact of COR theory: resources can be lost.

The actual or potential loss of resources is defined as (psychological) stress, where both perceived and actual loss or lack of gain are envies aged as sufficient for producing stress (Kim et al., 2016). Based on this loss-based definition of stress, human behaviour is predicted to minimize loss: when confronted with stress, individuals (employees) are predicted by the model to strive to minimize net loss of resources (Kim et al., 2016). The second impact is endogenous and reveals that lost resources can be replaced. A replacement of resources is adopted in order to offset net loss (Hobfoll, 2011); as such, it can be interpreted as a coping mechanism. When a direct replacement of the loss is not possible, a more symbolic or indirect replacement may be an alternative. Any resource replacement, however, is also stressful in itself as it often depletes the employed resources (Hobfoll, 2011) While the intention of resource replacement is to offset net loss, it implies the risk that resources expended in coping outstrip the resultant benefits, where the outcome of coping is likely to be negative (Hobfoll, 2011). Hence, it is important that people realistically judge a resource replacement in terms of potential losses versus gains.

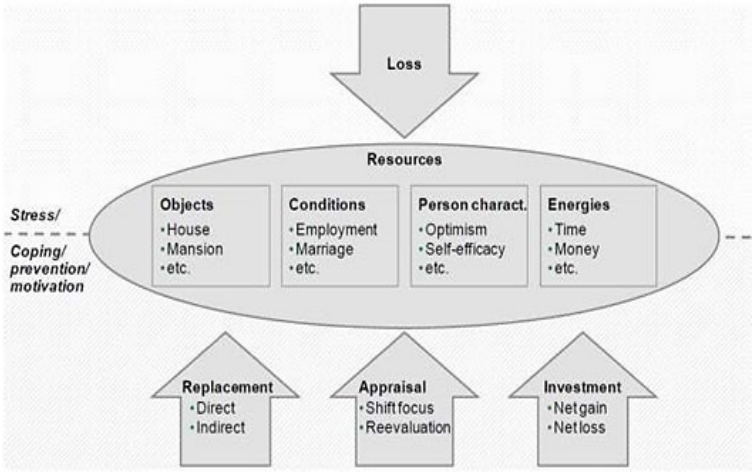

Figure 2. Resources and Impacts on Resources in the COR Model.
Source: Stevan E. Hobfoll (2011)

As a third impact, resources can be re-appraised. This endogenous aspect acknowledges that, in addition to objective measures or shared social definitions of loss, subjective perceptions of loss are critical (Chen & Huang, 2016). As such it maintains the tradition of Lazarus′ stress theory, which ultimately evolved into an appraisal theory. Chen & Huang (2016) specified two mechanisms of reappraisal of resources. The first mechanism describes a shift of the focus of attention, for example, focusing on what one might gain, instead of what one might lose, thus reinterpreting the threat as a challenge. Although this mechanism is unsuitable for tragic stressors, it may be beneficial for everyday stressors such as appraising ″the takeover of one's employer by a larger corporation as an opportunity for a quick rise in the executive ranks (Kim et al., 2016). The second mechanism describes a reevalua tion of resources, or more precisely a devaluation of the lost resources (whether potentially or actually lost). As an example, the stress of school failure can be mitigated by lowering the value placed on education (Kim et al., 2016). Both mechanisms can be interpreted as types of prevention or coping behavior, since the reappraisal allows the individual to prevent or reduce the perceptions of loss.

The fourth impact describes how resources can be invested to gain new resources; this is an endogenous impact, as well. The fourth impact claims to explain human (e.g; employees) behavior when individuals are not confronted with stressors; as such, it represents the motivational aspect of COR theory.

Hobfoll describes two examples of resource investments: individuals may invest their love and affection to receive a return of the same or invest their time and energy in attempts to translate them to other more highly prized resources, for example, power and money (Kim et al., 2016). However, any investment of resources has two possible outcomes: it may either result in a net gain of resources (the prospect of which is what motivates people to invest resources in the first place) or, if unsuccessful, it may result in a net loss of resources (Kim et al., 2016). According to Kim et al. (2016) a successful outcome results in positive well-being (eustress), while an unsuccessful outcome is sufficient to produce stress, since a lack of resource gain following a resource investment is perceived as loss. However, uncertainties remain regarding the process by which people ponder the anticipated losses and gains of a resource investment. An additional distinction needs to be made between resources that are expended when used and resources that are put at risk when used (Kim et al., 2016). Sense of mastery is an example of the latter type of resource: it is put at risk when people attempt a difficult task since if they fail this may detract from their sense of mastery, and if they succeed their sense of mastery may be further enhanced (Hobfoll, 2011).

4.1. The Primacy of Loss

The first advancing principle of the COR theory, the primacy of loss, is defined via two constituting qualities: (a) given equal amounts of loss and gain, loss will have significantly greater impact″ and (b) resource gains are seen as acquiring their saliency in light of loss; that is, in the context of resource loss, resource gains become more important (Stevan E Hobfoll et al., 2003). This notion is in line with several theories and with empirical research from several domains within psychology, suggesting that assessments of losses and gains follow very different rules. Particularly relevant here are the conclusions of prospect theory, which postulates that when evaluating potential (monetary) losses and gains of equal size, people ascribe more weight to losses than to gains. Thus, negative utility curves are steeper than positive utility curves (Kim et al., 2016). While prospect theory primarily focuses on monetary losses and gains, the theory of immune neglect finds a similar bias towards overestimation of negative events in the context of affective forecasting (Chen & Huang, 2016). Negativity bias theory likewise suggests that negative information influences evaluations more strongly than comparably extreme positive information (Kim et al., 2016), (Hobfoll, 2011) reasons that a possible (although unprovable) explanation for the primacy of loss may be found in evolutionism. His reasoning is that biological, attentional, psychological, and cultural systems find it adaptive to place more emphasis on losses than on gains, since losses potentially threaten an individual's existence and hence require immediate attention and response (Stevan E Hobfoll, 2011).

First empirical studies related to COR theory support primacy of loss. Taylor (1991) and Hobfoll (2011) finds evidence indicating that negative events evoke strong and rapid physiological, cognitive, emotional and social responses, and that these responses are greater for negative than for neutral or positive events. Hence there seems to be an asymmetry in the effects of positive and negative events. Similarly, Madden et al. (2017) and Hobfoll (2011) find that recent negative life events are better predictors of both positive and negative affect than are recent positive life events. In two studies, one with a student sample and one with a community sample, Ross & Heath (2002) find that recent resource losses were significantly related to psychological distress, while resource gains were in no case significantly related to psychological distress. Ross & Heath (2002) have additionally investigated the second quality of primacy of loss, namely that resource gains are more important in the context of resource loss. Similarly, Ennis et al. (1988) studied the buffering effects of resource gains for single and low-income inner-city women. They largely confirm their hypothesis that resource gains, such as mastery and social support, are more beneficial in offsetting the negative consequences of acute resource loss than chronic economic lack because acute loss is more likely to create identifiable demands against which resources can be mobilized (Ennis et al., 1988). In two studies, Kim et al. (2016) and Chen & Huang (2016) examined the effects of resource gains on employee's experiences of resource losses. They find that resource gains were most salient when resource losses co-occurred, for example, when they could buffer the negative impact of resource losses.

Resource loss has also repeatedly been studied in the context of burnout. Losses associated with burnout are characterized by gradually increasing stress caused by a sequence of minor losses. Hence, burnout studies have investigated the effects of chronic, minor losses on both self-reported burnout symptoms (Kim et al., 2016) identify several aspects of the working environment which contribute to resource losses or resource gains. They find that only one gain correlate was related to lower burnout, but five out of eight loss correlates were strongly related to greater burnout (Hobfoll, 2011; Madden et al., 2017).

4.2. Resource Caravans

COR theory states that resources generally exist in caravans, for example, the existence of one resource is a strong predictor for the existence of other resources, while the absence of one resource increases the probability that other resources are also absent. Hobfoll provides the example that having a sense of self-efficacy is likely to be linked with optimism and the availability of social support, while the opposite is true for low self-efficacy (Ross & Heath, 2002). This concept implies that resources cannot be considered independent from one another, but rather are related through a protective influence (Hobfoll, 2011; Ross & Heath, 2002). Additionally, COR theory suggests that this concept of resource caravans applies both in the immediate term, as in the example above, and over the course of the life-span (Stevan E Hobfoll, 2011), (Madden et al., 2017). This implies that strong resource levels at one point in time are a strong predictor for high resource levels in the future, while resource lack at one point makes resource lack in the future more likely (Hobfoll, 2011; Madden et al., 2017). Hence, there tends to be a continuity of resources over the life span: consistent with a caravan concept, the retinue of resources tends to travel together over time (Ross & Heath, 2002), (Stevan E Hobfoll, 2011). Basic empirical support for resource caravans is proposed by Kim et al., (2016), who find in their prospective study that employees with stronger personal resources had higher job performance levels. Likewise, Kim et al. (2016) established the personal resources predict ability to cope with huge job demands. In addition, Ross & Heath (2002) and Hobfoll (2011) suggested how the concept of resource caravans can be applied in organizational settings in order to increase employee engagement.

4.3. Loss and Gain Spirals

COR theory not only thinks of resources as occurring in caravans, but also proposes the development of cycles or spirals for both resource losses and gains. According to the concept of loss spirals, employees who experience a loss of resources will experience a further loss of resources, and in an increasing fashion (Salanova et al., 2012). At each lower level of resources they are in an even weaker position to protect the remaining resources and to offset additional losses (Hobfoll, 2011; Ross & Heath, 2002). Gain spirals work accordingly: employees who experience resource gains will be in a better position to gain even more resources and hence are likely to experience increasing levels of resource gains (Salanova et al., 2013). The supporting rationale is that with greater resources it is easier to offset resource loss and to orchestrate additional resource gains (Hobfoll, 2011; Ross & Heath, 2002).

By definition, loss spirals and gain spirals constitute amplifying loops in which cyclic relationships among constructs build on each other positively over time (Salanova et al., 2013). These spirals must meet two conditions. First, they must represent a reciprocal relationship, defined as the coexistence of normal and reversed causation between different resources. Second, absolute levels of the respective resources have to decrease (in case of loss spirals) respectively increase (in case of gain spirals) over time (Salanova et al., 2013). Notably, for a relationship to be reciprocal it is also necessary that the two causal relations are not independent, for example, only when the size of influence in one direction has an effect upon the size of the influence in the other direction and is in turn affected by it, is there a mutual causation (Kim et al., 2016). Both loss and gain spirals thus create positive (self-reinforcing) feedback loops (Kim et al., 2016). This supports the concept of deviation-amplifying mutual causal processes. This concept stems from cybernetics (the science of self-regulating and equilibrating systems) and finds supportive evidence in a vast range of domains, such as accumulation of capital in industry, evolution of living organisms, the rise of cultures of various types, interpersonal processes which produce mental illness, international conflicts (Kim et al., 2016). It seems only natural to apply the idea of amplifying deviations to resources of individuals, as suggested by Kim et al., (2016) mutual amplification may occur within a person, for example, between loss of self-confidence and poor performance in a neurotic person. Based on this work by Kim et al., (2016) developed the deviation amplification model of stress and coping, suggesting that coping is a process which has the potential to change coping resources such as management skills, which in turn also affect personal resources such as mastery and self-esteem. Although this model is reduced to the aspects of mastery and coping, it is clearly in the same line of thought as COR theory's loss and gain spirals. Hence its conceptual model, depicted in Figure 3, may serve as an exemplary illustration of a loss respectively gain spiral.

Although the notion of loss spirals is appealing and intuitive, there has been little empirical testing to support it (Brummelhuis & Bakker, 2012). This may be attributed to the fact that testing reciprocal causal relationships is challenging in terms of research design and raises many methodological issues (ten Brummelhuis & Bakker, 2012). Early empirical research on loss spirals established, for example, that resource loss in employees with a huge job demands increased employees′ anger and in

turn their turnover intentions (ten Brummelhuis & Bakker, 2012), which made them increasingly vulnerable to additional resource loss in an expanding cycle (Hobfoll, 2011; Ross & Heath, 2002).

Conservation of resources (COR) theory is a burnout and motivational theory that has been useful broadly in the organizational literature (Hobfoll, 2011; Ross & Heath, 2002). Conservation of resources theory has been used as an explanatory model for employees' turnover intentions and other organizations (Westman et al., 2004). Halbesleben & Wheeler (2011) tested a model based on conservation of resources theory to predict organizational commitment and task performance. Witt & Carlson (2006) conducted a study based on conservation of resources theory to test the effect of two aspects of the work-family interface family to work conflict and family to work enrichment on job performance. According to Sun & Pan (2008), the conservation-of-resources theory provided the theoretical underpinning for the relationship among HR practices perceived by employees, emotional exhaustion, and work outcomes (work engagement and job performance). Earlier study has used the conservation of resources theory as an explanation for organizational commitment–job performance relationship (Babalola, 2016; Treadway et al., 2005). Based on the main proposition of COR and the broad empirical support it receives, the application of COR as one of the main underpinning theories in the present study is justified.

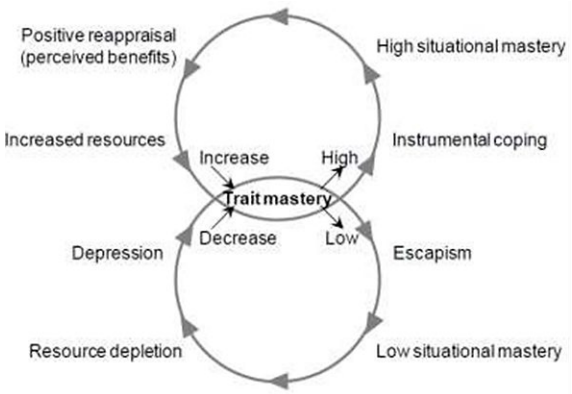

Figure 3. Loss and Gain Spiral as Conceptualized in the Deviation Amplification Model
Source: Kim et al. (2016)

5. Job Demands - Resources (JD-R) Model

The job demands-resources model or (JD-R) model is an occupational stress model that suggests strain is a response to imbalance between demands on the individual and the resources he or she has to deal with those demands (Henderson et al., 2014). The JD-R model became highly popular among researchers (Henderson et al., 2014). The current version of the model proposes that high job demand s lead to strain and health impairment (the health impairment process), and that high resources lead to increased motivation and higher productivity (the motivational process). The JD-R model developed by Demerouti and his associates (Bakker et al., 2013), the JD- R model can be used as a tool to manage human resources in organizations because it can be applied to a wide range of occupations to improve employee wellbeing and job performance (Bakker et al., 2013).

JD-R model argues that the factors or characteristics salient in a work environment determine the performance of employees at work (Henderson et al., 2014). According to this model, there are two general categories of work environment i.e. job demands and job resources study by Henderson et al. (2014) and Bakker et al. (2013). Job demands are the physical, psychological, social and organizational factors which require constant physical and psychological efforts or skills and are therefore linked to physical and psychological costs whereas job resources are the physical, psychological, psychological, social and organizational aspects of a job which enable the achievement of goals and objectives while at the work place, reduce the negative effects associated with job demands to encourage personal growth, learning and development (Bakker & Demerouti, 2007).

The model also proposes two psychological processes that take place as a result of the existence of perceived job demands and resources (Lynn et al., 2013). These processes relate to health deficiency and motivation. The health impairment process occurs when jobs are designed badly or those whose demands chronically deplete a worker's mental and physical resources which reduce energy and degrade health situation (Lynn et al., 2013). The motivational process is where job resources brings forth their motivating potential and cause the workers to show high levels of work engagement, low levels of cynicism and above

performance (Lynn et al., 2013; Sun & Pan, 2008). Therefore, in the present study, the negative psychological process or the health impairment process is turnover intentions while the motivational processes are work engagement and affective commitment.

6. Conclusion

This paper describes the background information about conservation of resources theory and its implementation in job demands and resources (JD-R) model. In addition, the theories that impact the conservation theory are also highlighted. The relationship between variables in JD-R model based on COR are explained

Author Contributions: Conceptualization, A.T.B. and A.M.S.; methodology, A.T.B.; software, A.M.S.; validation, A.T.B. and A.M.S.; formal analysis, A.T.B.; investigation, A.T.B.; resources, A.T.B.; data curation, A.T.B.; writing—original draft preparation, A.T.B. and A.M.S.; writing—review and editing, A.T.B. and A.M.S.; visualization, A.T.B.; supervision, A.T.B.; project administration, A.T.B.; funding acquisition, A.T.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgments: The author would like to thank Universiti Tun Hussein Onn Malaysia, for supporting this research and publication. We would also like to thank the reviewers for their constructive comments and suggestions.

Conflicts of Interest: The authors declare no conflict of interest.

References

Babalola, S. S. (2016). The Effect Of Leadership Style, Job Satisfaction And Employee-Supervisor Relationship On Job Performance And Organizational Commitment. *Journal of Applied Business Research (JABR)*, *32*(3), 935–946. https://doi.org/10.19030/jabr.v32i3.9667

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., de Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, *62*(2), 341–356. https://doi.org/10.1016/S0001-8791(02)00030-1

Bakker, A. B., Demerouti, E., Oerlemans, W., & Sonnentag, S. (2013). Workaholism and daily recovery: A day reconstruction study of leisure activities. *Journal of Organizational Behavior*, *34*(1), 87–107. https://doi.org/10.1002/job.1796

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Chen, Y.-S., & Huang, S. Y. B. (2016). A conservation of resources view of personal engagement in the development of innovative behavior and work-family conflict. *Journal of Organizational Change Management*, *29*(6), 1030–1040. https://doi.org/10.1108/JOCM-11-2015-0213

Clausen, T., & Borg, V. (2011). Job demands, job resources and meaning at work. *Journal of Managerial Psychology*, *26*(8), 665–681. https://doi.org/10.1108/02683941111181761

Ennis, D. M., Palen, J. J., & Mullen, K. (1988). A multidimensional stochastic theory of similarity. *Journal of Mathematical Psychology*, *32*(4), 449–465. https://doi.org/10.1016/0022-2496(88)90023-5

Folkman, S. (2013). Stress: Appraisal and Coping. In *Encyclopedia of Behavioral Medicine* (pp. 1913–1915). Springer New York. https://doi.org/10.1007/978-1-4419-1005-9_215

Freud, S. (1970). Letter from Sigmund Freud to Arnold Zweig, November 26, 1930. In *The Letters of Sigmund Freud and Arnold Zweig* (pp. 20–21). London: The Hogarth Press and the Institute of Psycho-Analysis.

Freund, A. M., & Riediger, M. (2001). Commentaries. *Applied Psychology*, *50*(3), 370–408. https://doi.org/10.1111/1464-0597.00063

Halbesleben, J. R. B., & Wheeler, A. R. (2011). I owe you one: Coworker reciprocity as a moderator of the day-level exhaustion-performance relationship. *Journal of Organizational Behavior*, *32*(4), 608–626. https://doi.org/10.1002/job.748

Henderson, R. J., Johnson, A., & Moodie, S. (2014). Parent-to-Parent Support for Parents With Children Who Are Deaf or Hard of Hearing: A Conceptual Framework. *American Journal of Audiology*, *23*(4), 437–448. https://doi.org/10.1044/2014_AJA-14-0029

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, *94*(3), 319–340. https://doi.org/10.1037/0033-295X.94.3.319

Hobfoll, S.E., & Ford, J. S. (2007). Conservation of Resources Theory. In *Encyclopedia of Stress* (Vol. 51, Issue 4, pp. 562–567). Elsevier. https://doi.org/10.1016/B978-012373947-6.00093-3

Hobfoll, Stevan E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

Hobfoll, Stevan E. (2011). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology*, *84*(1), 116–122. https://doi.org/10.1111/j.2044-8325.2010.02016.x

Hobfoll, Stevan E, Freedy, J., Lane, C., & Geller, P. (1990). Conservation of social resources: Social support resource theory. *Journal of Social and Personal Relationships*, *7*(4), 465–478.

Hobfoll, Stevan E, Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, *84*(3), 632–643. https://doi.org/10.1037/0022-3514.84.3.632

Kalpachidou, T., Raftogianni, A., Melissa, P., Kollia, A.-M., Stylianopoulou, F., & Stamatakis, A. (2016). Effects of a Neonatal Experience Involving Reward Through Maternal Contact on the Noradrenergic System of the Rat Prefrontal Cortex. *Cerebral Cortex*, *26*(9), 3866–3877. https://doi.org/10.1093/cercor/bhv192

Kaplan, S., & Talbot, J. F. (1983). Psychological Benefits of a Wilderness Experience. In *Behavior and the Natural Environment* (pp. 163–203). Springer US. https://doi.org/10.1007/978-1-4613-3539-9_6

Kim, S. L., Lee, S., & Yun, S. (2016). Abusive supervision, knowledge sharing, and individual factors. *Journal of Managerial Psychology*, *31*(6), 1106–1120. https://doi.org/10.1108/JMP-05-2015-0169

Lynn, K., Daigle, J., Hoffman, J., Lake, F., Michelle, N., Ranco, D., Viles, C., Voggesser, G., & Williams, P. (2013). The impacts of climate change on tribal traditional foods. In *Climate Change and Indigenous Peoples in the United States* (pp. 37–48). Springer International Publishing. https://doi.org/10.1007/978-3-319-05266-3_4

Madden, L., Kidder, D., Eddleston, K., Litzky, B., & Kellermanns, F. (2017). A conservation of resources study of standard and contingent employees. *Personnel Review*, *46*(3), 644–661. https://doi.org/10.1108/PR-08-2015-0228

Maslow, A. H. (1954). The Instinctoid Nature of Basic Needs1. *Journal of Personality*, *22*(3), 326–347. https://doi.org/10.1111/j.1467-6494.1954.tb01136.x

McLeod, S. (2007). Maslow's hierarchy of needs. *Simply Psychology*, *1*(1–18).

Paulman, R. G., & Kennelly, K. J. (1984). Test anxiety and ineffective test taking: Different names, same construct? *Journal of Educational Psychology*, *76*(2), 279–288. https://doi.org/10.1037/0022-0663.76.2.279

Ross, S., & Heath, N. (2002). A Study of the Frequency of Self-Mutilation in a Community Sample of Adolescents. *Journal of Youth and Adolescence*, *31*(1), 67–77. https://doi.org/10.1023/A:1014089117419

Saari, T., Melin, H., Balabanova, E., & Efendiev, A. (2017). The job demands and resources as antecedents of work engagement. *Baltic Journal of Management*, *12*(2), 240–254. https://doi.org/10.1108/BJM-05-2016-0112

Salanova, M., Llorens, S., Acosta, H., & Torrente, P. (2013). Positive interventions in positive organizations. *Terapia Psicológica*, *31*(1), 101–113.

Selye, H. (1950). Stress and the General Adaptation Syndrome. *BMJ*, *1*(4667), 1383–1392. https://doi.org/10.1136/bmj.1.4667.1383

Smith, T. D., & Dyal, M.-A. (2016). A conceptual safety-oriented job demands and resources model for the fire service. *International Journal of Workplace Health Management*.

Spielberger, C. D. (1994). Charles D. Spielberger. *American Psychologist*, *49*(4), 276–278. https://doi.org/10.1037/h0090758

Sun, L., & Pan, W. (2008). HR practices perceptions, emotional exhaustion, and work outcomes: A conservation-of-resources theory in the Chinese context. *Human Resource Development Quarterly*, *19*(1), 55–74. https://doi.org/10.1002/hrdq.1225

Taylor, S. E. (1991). Asymmetrical effects of positive and negative events: The mobilization-minimization hypothesis. *Psychological Bulletin*, *110*(1), 67–85. https://doi.org/10.1037/0033-2909.110.1.67

ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work–home interface: The work–home resources model. *American Psychologist*, *67*(7), 545–556. https://doi.org/10.1037/a0027974

Torrente, P., Salanova, M., Llorens, S., & Schaufeli, W. B. (2012). Teams make it work: How team work engagement mediates between social resources and performance in teams. *Psicothema*, *24*(1), 106–112.

Treadway, D. C., Ferris, G. R., Hochwarter, W., Perrewé, P., Witt, L. A., & Goodman, J. M. (2005). The Role of Age in the Perceptions of Politics--Job Performance Relationship: A Three-Study Constructive Replication. *Journal of Applied Psychology*, *90*(5), 872–881. https://doi.org/10.1037/0021-9010.90.5.872

Walster, E., Berscheid, E., & Walster, G. W. (1973). New directions in equity research. *Journal of Personality and Social Psychology*, *25*(2), 151–176. https://doi.org/10.1037/h0033967

Westman, M., Hobfoll, S. E., Chen, S., Davidson, O. B., & Laski, S. (2004). Organizational stress through the lens of conservation of resources (COR) theory. In *Exploring interpersonal dynamics* (Vol. 4, pp. 167–220). Emerald Group Publishing Limited. https://doi.org/10.1016/S1479-3555(04)04005-3

Wilson, T. M., Maric, I., Simakova, O., Bai, Y., Ching Chan, E., Olivares, N., Carter, M., Maric, D., Robyn, J., & Metcalfe, D. D. (2011). Clonal analysis of NRAS activating mutations in KIT-D816V systemic mastocytosis. *Haematologica*, *96*(3), 459–463. https://doi.org/10.3324/haematol.2010.031690

Witt, L. A., & Carlson, D. S. (2006). The work-family interface and job performance: moderating effects of conscientiousness and perceived organizational support. *Journal of Occupational Health Psychology*, *11*(4), 343.

Yahya, A. H., & Sukmayadi, V. (2020). A Review of Cognitive Dissonance Theory and Its Relevance to Current Social Issues. *MIMBAR : Jurnal Sosial Dan Pembangunan*, *36*(2). https://doi.org/10.29313/mimbar.v36i2.6652

Zohar, D. (2003). Safety climate: Conceptual and measurement issues. In *Handbook of occupational health psychology.* (pp. 123–142). American Psychological Association. https://doi.org/10.1037/10474-006