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# Moderating Effect of Work Self-Efficacy in the Relationship Between Job Resources and Work Engagement of Vocational Business Lecturers

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**Abstract**

While job resources, work self-efficacy, and work engagement have been investigated extensively, they have not been studied together in the context of vocational business lecturers, despite the low work engagement experienced and the importance of highly resourced and efficacious employees. Therefore, research on the interactive impact of job resources and work self-efficacy on work engagement will fill a gap in the existing literature. The aims of the study were twofold: (1) to investigate the relationships between job resources, work self-efficacy and work engagement, and (2) to investigate the moderating effect of work self-efficacy in the relationship between job resources and work engagement. A quantitative research design was used to achieve the objective of the study. A convenience sampling method was used to select 142 participants, consisting of 12 Heads of Department and 130 lecturers, because they were the available participants as at the time the study was carried out. The correlation statistic was used to answer the research questions. The regression statistic was used to test the direct relationship. The moderation analysis was used to test the indirect relationship. Work engagement positively correlates with job resources and work self-efficacy. Vocational business lecturers who exert high work self-efficacy will likely be engaged on the job. The findings indicate that when job resources and work self-efficacy increase, engagement increases. The study's findings may provide insights for educational administrators and policymakers on how work engagement will positively impact the job performance of vocational business lecturers and, more broadly, their intention to stay on the job.

## 1. Introduction

Vocational business lecturers need to be engaged fully on the job in order to effectively perform their job activities and achieve the goals of vocational business programme in the 21st century. They need to be engaged fully in structured, organized and compulsory job activities, such as teaching, research and administrative tasks, and other job responsibilities, which have great implications for career development (Agbionu et al., 2018; Nordin & Hamzah, 2021). Engaged vocational business lecturers exert higher levels of cognitive, emotional, and physical efforts while performing job activities, which assist in achieving the set goals of a vocational business programme in the 21st century. Therefore, if vocational business lecturers were involved and expressed themselves fully in the three different components of work engagement, namely: physically, cognitively, and emotionally, while performing job activities, it would help in achieving the set goals of vocational business programme in the 21st century. That is, the different levels whereby the vocational business lecturers can involve and express themselves fully while performing job activities could range from disengagement (i.e., low level) to full engagement (i.e., high level), making work engagement a unipolar construct that exists in three dimensions. However, devising a means to ensure that the vocational business lecturers are engaged fully and perform well on the job is one of the greatest challenges faced by the vocational business programme in the 21st century (Ogbuanya & Chukwuedo, 2017). Some studies, especially those carried out in Nigeria have attempted to examine the level of work engagement and its association with the job performance of vocational business lecturers (Chukwuedo & Egbri, 2020; Sonna & Nkechi, 2021). These studies have confirmed that vocational business lecturers experience low work engagement, resulting in a significant but low relationship between work engagement and job performance. To overcome the situation, there is a need to identify salient factors that would make vocational business lecturers to experience engagement fully at work.

Vocational business lecturers may find themselves experiencing low work engagement because of their exposure to the unresourceful and unmotivated working environments. With the performance of the complex and numerous job responsibilities of the vocational business lecturers, the need for the creation of a resourceful and motivated working environment plays a salient role in activating engagement at work (Riyanto et al., 2021). Low resources and a demotivated working environment will negatively associate work engagement and, more broadly, with vocational business lecturers' job performance and their intentions to stay on the job. Thus, it is critical for vocational business lecturers to be exposed to adequate job resources.

Job resource is one of the most studied variables in work and organizational psychology because of its positive role in predicting work engagement and job performance in general. Job resources pertain to the use of different skills, provision of freedom to make job decisions, seizing opportunities for skills upgrades, provision of feedback on the job done and receiving help from colleagues and organizations (University of Minnesota, 2015). Research indicates that employees who experience adequate job resources are likely to exert higher levels of work self-efficacy as well resulting in increased behavioural outcomes such as work engagement (Bakker et al., 2014a). In the human resource management and work and organizational psychology literature, work self-efficacy is defined as the exertion of employee's belief in their own ability to carry out a given job activity, which forms the basis of their motivation (Bakker & van Woerkom, 2017). Higher self-efficacy beliefs help to reduce work-induced anxiety and increase positive attitude to work. For instance, employees who exert higher levels of self-efficacy could be assertive and believe their self-efforts will produce work success. Higher levels of self-efficacy may also help to reduce job demands and the related costs which enhance growth, learning, and development as well as facilitate the achievement of work goals (Ojapinwa, 2020; Badri & Panatik, 2020; Abun et al., 2021; Bakker & de Vries, 2021; Bakker & Mostert, 2024). Thus, work self-efficacy and job resources can interact to predict work-related outcomes. Therefore, we feel that vocational business lecturers who exert higher levels of work self-efficacy can be described as experiencing adequate job resources.

In a defective working environment, it is important to ensure that vocational business lecturers are exposed to adequate job resources and exert higher levels of work self-efficacy because of the level of work engagement required to perform job activities. Thus, in Nigeria, the vocational business sector is currently faced with the issues of inadequate provision of huge financial resources, inadequate supply of qualified teaching staff, inadequate provision of state-of-the-art facilities, and inadequate students-teacher ratio (Onwusa, 2021; Ladan, 2023; Uko, 2024). Vocational business lecturers are also currently performing complex and multiple jobs in defective (i.e., high job demands and low job resources) working environments. These unpleasant work conditions have exposed the vocational business lecturers to a working environment characterized by some risk factors leading to consistent experiences of burnout or decreased resources. The implications are that vocational business lecturers who performed complex and multiple job activities are highly burned out, suffer decrements in task and contextual performances (Suck & Reio, 2014; Bang & Reio, 2017) and are less likely to engage in citizenship and prosocial behaviours (Demerouti et al., 2014; Bang & Reio, 2017). These negative work situations may hinder vocational business students from acquiring the requisite knowledge and skills required to start and run a new business, despite the significance of entrepreneurial activities in the development of the nation's economy. There is therefore an urgent need for managers and administrators of higher educational institutions to identify the

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motivational factors that would provide the possibilities for vocational business lecturers to engage fully in their job activities. Although ways to overcome the low experiences of work engagement have been made by organizational researchers via such recommendations as creating a resourceful and motivated working environment for higher education lecturers (e.g., Bakker et al., 2023a; Bakker et al., 2023b; Bakker et al., 2023c). However, the motivational factors that could influence the full engagement of vocational business lecturers at work seem to attract further research. A search through the primary managerial, work and organizational psychology journals showed that little research has been carried out on the work engagement of vocational business lecturers, especially in the higher educational institutions in Nigeria (e.g., Ogbuanya & Chukwuedo, 2017). Thus, several scholars and researchers have studied the work engagement of lecturers tailored to the higher educational institutions in the United States of America and Europe (e.g., Bakker et al., 2023a; Bakker et at., 2023b; Bakker et al., 2023c; Lesener et al., 2019; Lesener et al., 2020).

Concerning the importance of a resourceful and motivated working environment to the vocational business workforce, there is a need to examine job resources and work self-efficacy and the impact this may have on work engagement. While job resources, work self-efficacy, and work engagement have been researched extensively, they have not been investigated together in the context of vocational business lecturers in higher educational institutions, especially in the developing countries, despite the urgency of work engagement. Ideally, researchers and scholars need to employ convincing methodologies and procedures for testing preconceived assumptions using quantitative survey research designs, correlation, regression, and moderation analyses. A descriptive survey research design is not likely to provide credible or reliable evidence that work engagement can be influenced by job resources and work self-efficacy independently or when work self-efficacy interacts with job resources. This is a great opportunity to investigate what has not been relatively tested and contribute new knowledge to existing literature. The research findings on the interactive impact of job resources and work self-efficacy on work engagement will fill a gap in the existing literature. It will provide useful insight into higher education administrators and policymakers in managing and making informed decisions on where and when to allocate resources such that staff can work in a resourceful and motivated working environment. The aims of the study are twofold: (1) to assess the relationships between job resources, work self-efficacy and work engagement of vocational business lecturers, and (2) to investigate the moderating effect of work self-efficacy in the relationship between job resources and work engagement of vocational business lecturers. Based on these aims, the study provides answers to the following research questions:

- What is the relationship between job resources and work engagement of vocational business lecturers?
- What is the relationship between job resources and work self-efficacy of vocational business lecturers?
- What is the relationship between work self-efficacy and work engagement of vocational business lecturers?
- Does work self-efficacy moderate the relationship between job resources and work engagement of vocational business lecturers?

The study's findings may provide significant insight into the work engagement of vocational business lecturers. Work engagement will positively influence the effective performance of the job activities of vocational business lecturers and, more broadly, their intentions to stay on the job. The following sections provided specific discussions on theoretical frameworks, pertinent reviews of literature, research methods, results, implications, limitations, and conclusions.

## 2. Theoretical Framework

### 2.1 The Job Demands-Resources (JD-R) Theory

A newer version of the JD-R theory of work engagement (e.g., Lesener et al., 2020; Salmela-Aro et al., 2022; Bakker et al., 2023a; Demerouti & Bakker, 2023; Jagodics & Szabó, 2023; Bakker & Demerouti, 2024) is currently used to explain the activation of work engagement dimensions, which postulates that every organization have motivational factors such as job resources. The JD-R theory emerged from a work and organizational context and portrays precisely the various motivational processes, mechanisms and behaviours that influence job resources, which helps individuals to feel engaged and perform well on the job (Bakker et al., 2023a). The JD-R theory depicted that job resources that is too high is expected to be experienced as positive because its functioning and motivational role is increased as a consequence (Bakker et al., 2014b; Schaufeli, 2017). Scholars and researchers have made a significant modification of the JD–R model by including the construct of work self-efficacy in the model and theory (Xanthopoulou et al., 2007), which makes the concept of work self-efficacy to be studied by numerous scholars and researchers either as a moderator or as a mediator. They theorized that work self-efficacy has the potential to influence work engagement beyond the place of job resources. The aim of their study was to expand the JD-R theory by explaining how work self-efficacy can interact with job resources, which may influence work engagement. Work self-efficacy involves the belief in employees' abilities to accomplish a task. Since work

self-efficacy involves the belief employees hold pertaining to the amount of control they have over their working environment, it is presumed in this study that the extent to which job resources can predict work engagement can be strengthened by work self-efficacy. This is to say that when work self-efficacy is high, the extent to which job resources can predict work engagement will also be high. In contrast, when work self-efficacy is low, the extent to which job resources can predict work engagement will be low as well. For instance, an employee who exerts the belief that he or she can perform a task will add strength to job resources which, in turn, may lead to work engagement that is high in nature.

## 2.2 The Conservation of Resources (COR) Theory

A recent version of the COR theory (e.g., Hobfoll et al., 2018) defined resources as those entities that either are centrally valued in their own right, or act as means to obtain centrally valued ends. Hobfoll (1989) enumerated four types of resources, which include objects, conditions, personal characteristics, and energies. He argued that individuals invest their resources in order to deal with threatening conditions and prevent themselves from negative outcomes. He also argued that individuals do not only strive to protect these resources, but also to accumulate them. Example of the personal resources (also referred to as psychological capital) employed for this study is work self-efficacy (Luthans et al., 2013). Hobfoll (1989) also argued that some resources (e.g., job resources) tend to generate other resources (e.g., work self-efficacy), thus creating resource caravans, which may result in positive work outcomes, such as better subjective well-being (e.g., work engagement).

Based on the above assumptions, the authors identify some similarities between the COR and the JD-R theories. More importantly, both theories assume a moderating role of resources in the relationship between job demands and work burnout an antipode of work engagement. In addition, if the authors implement the second assumption of the COR theory in the motivational process of the JD-R theory, they expect that the abundance of job resources would lead to an accumulation of more resources (e.g., self-efficacy), and thus to more positive outcomes (e.g., work engagement). Indeed, Xanthopoulou et al., (2007) found that job resources foster efficacy beliefs, which, in turn, increase the level of work engagement. In short, based on these two basic presumptions of the COR theory, it can be suggested that work self-efficacy (a major component of personal resources or psychological capital) may play different roles in the JD-R model.

# 3. Hypotheses Development

## 3.1 Job Resources

Job resources refer to those physical, psychological, social, or organizational aspects of the job that are (1) functional in achieving work goals, (2) reduce job demands and the associated physiological and psychological costs, and/or (3) stimulate personal growth, learning, and development (Bakker & Demerouti, 2017). This definition aligns with the job characteristics theory (Hackman & Oldham, 1980), depicting the motivational role of job resources at the task level, such as autonomy, feedback, and task significance. In addition, this definition agrees with the COR theory (Hobfoll et al., 2018) on a more general level, which proposes that the prime employees' motivation is directed towards the maintenance and accumulation of resources. Accordingly, resources are required because they are a means to achieve or protect other salient resources. Job resources can be classified at the organizational level at large (e.g. pay, career advancement opportunities, and job security), the interpersonal and social relations level (e.g. support from colleagues and supervisor, team climate), the organization of job performance level (e.g. role clarity, participation in decision making), and at the level of the task performance level (e.g. variety of skills utilization, task identity, task significance, job autonomy, performance feedback). These job resources can interact with work self-efficacy and could be predicted to significantly and positively influence employees' to work engagement.

From the above definition, job resources may either foster an intrinsic motivational role because they influence employees' growth, learning and development or an extrinsic motivational role because they are instrumental in achieving work goals. For instance, the extended version of the JD-R theory (Bakker & Demerouti, 2017, 2024) postulated that job resources may reinforce employees' engagement by increasing their intrinsic motivation (i.e. by fostering growth, learning and development) as well as their extrinsic motivation (i.e., by offering instrumental assistance to employees to help them achieve their work goals). The place of job resources as it may play an intrinsic motivational role fulfils basic human needs, such as the needs for autonomy, competence, and relatedness. For instance, adequate provision of feedback fosters learning, thereby increasing job competence, while decision latitude and support from colleagues satisfy the need for autonomy and the need to belong. Job resources may also play an extrinsic motivational role, because, according to the effort-recovery model (Meijman & Mulder, 1998), working environments that offer an abundance of job resources foster the willingness to dedicate one's efforts and abilities to the work task. In that case it is likely that the task will be completed successfully and that the work goal will be accomplished. For instance, supportive colleagues and proper feedback from one's superior would increase the likelihood of being successful in accomplishing one's

work goals. In either case, be it through the satisfaction of basic needs or through the achievement of work goals, the experience of job resources leads to more accumulation of resources (e.g., work self-efficacy) and better work well-being (e.g., work engagement). Furthermore, the different resources experienced at work according to social cognitive theory constitute the factors influencing work self-efficacy in the following ways: actively, through past performance achievements; indirectly, by following role models and observing others to achieve work goals; and socially, through persuasion, career learning, and feedback on the job done (Bandura, 2009, 2014).

## 3.2 Work Self-Efficacy

Self-efficacy is a construct that has been widely researched as an important predictor of various behaviours (e.g., Ghasemi et al., 2019; Yu et al., 2022; Calabro et al., 2023; Zhu et al., 2023). It influences the choice of situations in which people engage themselves, the amount of effort they put into a situation, the length of time they invest in performing a certain task, and overcoming obstacles and resistance to difficulties, emotional reactions during anticipation of the situation or involvement in the situation (Bandura, 1986). Self-efficacy has become a strong antecedent of individuals' levels of performance, due to various influencing behaviours, such as selection, motivation, thought, and affection (Davidescu, 2019). As enumerated, Bandura emphasized the value of self-efficacy as a mediator or moderator of an action. When analyzing and engaging in an action, individuals make their judgments that are in line with their abilities to cope with the different demands associated with a task (Turda, 2024). Self-efficacy for a certain task can be influenced primarily by past performance accomplishments and expectations from future work goals, encouragement from others, emotional reactions, and observing others. For instance, employees with higher levels of self-efficacy tend to set achievable goals and feel efficacious in achieving the same goals. Also, employees who exert higher levels of specific tasks performing ability seem to work more than those who exert low tasks performing ability. Employees with higher levels of self-efficacy expect better outcomes from their persistence of efforts and perceive weaknesses as matters to be conquered through the persistence of efforts, tenacity, and resilience. On the other hand, employees with low self-efficacy expect their self-efforts to fail (Bradley et al., 2017).

Self-efficacy involves how capable one believes he or she can handle a certain kind of task that significantly impacts his or her personal life (Hsu et al., 2019; Marsh et al., 2019). It is defined as individuals' beliefs in their abilities that guide their behaviour and enable them to successfully attain a particular task or behaviour that strongly impacts their personal life (Bandura, 2009, 2015). It is about individuals' willingness to engage in specific tasks and the persistence of efforts they are willing to exhibit as they encounter difficulties in the performance of a particular task (Bradley et al., 2017). Furthermore, self-efficacy requires individuals to believe firmly in themselves of what they are capable of doing and the expected outcomes that are anticipated from certain tasks (Bandura, 2014; Lyons & Bandura, 2018) and to make decisions relating to the degree of effort and time they are capable and willing to invest in a particular task (Bandura, 2009; Fida et al., 2022). Self-efficacy is different from self-confidence and/or self-esteem because the latter are somewhat general in nature, and not necessarily related to specific task milieu or persistence of effort in spite of difficulty. In a triangular model, Bandura depicts an interplay between environmental factors, personal characteristics, and behavioural outcomes, referring to it as the triadic reciprocal causality (Bandura, 1997). The model holds that self-efficacy is a significant mediating or moderating construct in the relationships between environmental factors and behavioural outcomes (Bandura, 1989).

Self-efficacy can be separated into two major constructs, namely: general self-efficacy and specific self-efficacy (Azizli et al., 2015). General self-efficacy is relatively stable over time and is conceived as a trait construct that can be applicable to a wide areas of human endeavour, while specific self-efficacy involves differentiated beliefs in particular work domains (Bandura, 2019). When differentiated with general self-efficacy, specific self-efficacy is a better predictor of employee's behaviuors in specific work domains (Grether et al., 2018). However, one of the specific domains of self-efficacy that is firmly embedded in the literature is work self-efficacy (e.g., Zimmerman & Kulikowich, 2016; Morris et al., 2017; Guarnaccia et al., 2018; Van Hootegem et al., 2021; Peng et al., 2021; Santa-Cruz-Espinoza et al., 2024), i.e., employees' beliefs in their capabilities to successfully engage in the performance of specific job activities, such as teaching, research and administration. Work self-efficacy could potentially impact employees' thoughts, motivation, actions, and performance. For instance, scholars and researchers have argued that work self-efficacy is a significant positive predictor of job performance, job satisfaction or work commitment (Tramontano et al., 2021). This implied that behavioural outcomes such as job satisfaction, work engagement, and work commitment can be governed by peoples' beliefs in their causal capacities, especially with respect to work self-efficacy. Therefore, the evidence seems to support an existing theoretical assumption that when employees with higher levels of work self-efficacy are more confident in what they are capable of handling (Bandura, 2014), they are perceived to be self-motivated, which explains the expected interplay with job satisfaction, work engagement and work commitment. Based on the major tenets of the COR theory, Chan et al. (2017) proposed that a higher level of work self-efficacy can contribute to the attainment of balance among different demands on the employees' career, social and family life. Due to this conservation and balance result, work self-efficacy helps

create a self-fulfilling cycle as employees achieve what they believe they can accomplish, and at the same time build other skills and personal resources to manage work and family challenges. This implies that work self-efficacy is the most important psychological mechanism for producing positive work well-being. For instance, self-efficacious employees would experience a higher level of work engagement. Moreover, this speculation had suggested that work self-efficacy could predict better quality of work life (Jaguaco et al., 2022) and contributes to a greater sense of work well-being (Lee et al., 2024). Furthermore, employees may likely be more efficacious with their job activities when they feel capable of performing a task or accomplishing work goals. Employees with higher levels of work self-efficacy could often be characterized as having tenacity and self-determination that are driven by their belief in future success. Several studies have associated work engagement with work self-efficacy, arguing that work self-efficacy potentially predict work engagement even beyond the role of job resources. However, self-doubts that are related to low work self-efficacy may interfere with work engagement process and provide the opportunity for employees to be prone to distractions from their work environment; hence workers with low self-efficacy may find it difficult to become absorbed and perform job activities with their minds and full dedication. Thus, low self-efficacy is expected to frequently be associated with low work engagement.

## 3.3 Work Engagement

Work engagement has been examined for many years by researchers and practitioners because of its importance in activating behavioural outcomes of employees. Organizations are highly productive when they have employees who are engaged and make efforts to execute their job activities (Musgrove, et al., 2014). In addition, studies have confirmed that employees who are engaged perform well on demanding tasks because they focus all their attention to the task (Hopstaken et al., 2015; Hopstaken et al., 2016). Work engagement is defined as the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during the performance of job activities (Khan, 1990). Thus, work engagement involves a situation whereby people involve and express their personal selves in three different ways, physically, cognitively, and emotionally, at different levels when performing their jobs. Cognitive work engagement is defined as the intentional and actively focused awareness of one's tasks, objectives, or organizational activities that are characterized by willingly calling one's attention to and having positive thoughts about one's work, with the purpose of improving one's effectiveness at those tasks, objectives, or activities (Kuok & Taormina, 2017). Emotional work engagement is the willing attachment to tasks, objectives, or organizational activities characterized by having positive feelings, such as pride, enthusiasm, and excitement, about actively executing and completing those tasks, objectives, or activities (Kuok & Taormina, 2017). Physical work engagement is defined as the bodily involvement in tasks, objectives, or organizational activities by intentionally and voluntarily utilizing one's energy and effort to execute and complete those tasks, objectives, or activities (Kuok & Taormina, 2017).

It is established from the foregoing that job resources and work self-efficacy are salient predictors of work engagement. An employee who has experienced low job resources and exerts low work self-efficacy may likely be disengaged. Contrarily, employees who have experienced high job resources and exerted high work self-efficacy may likely be engaged. Job resources and work self-efficacy are examined in this study since they are considered as salient predictors of work engagement. Having resourceful and motivated employees is a salient requirement in every organization because they may find it difficult to be disengaged since they will receive support from colleagues, use a variety of skills, make job decisions freely, seize the opportunity for career development, and receive awareness on the extent of their job performance.

## 3.4 The Moderating Effect of Work-Self-Efficacy

A significant modification made after the earlier version of the JD–R model emerged was to include the construct of work self-efficacy to the model and theory by Xanthopoulou et al. (2007), which provides an opportunity for scholars and researchers to study the concept of work self-efficacy either as a moderator or as a mediator. Theoretically speaking, personal resources (e.g., work self-efficacy) have been depicted as construct(s) that can act as a moderator or a mediator between environmental factors (e.g., job resources) and behavioural outcomes (e.g. work engagement) (Bandura, 1997). The triadic reciprocal causality model developed by Albert Bandura holds that an individual's behaviour, such as work engagement, is always the outcome or the result of the interactions between environmental factors, such as job resources and personal resources, such as work self-efficacy (Bandura, 1989). This theoretical assumption has suggested that personal characteristics such as work self-efficacy may function better either as a moderator or as a mediator in the relationships between environmental factors such as job resources and behavioural outcomes such as work engagement when subjected to empirical testing. In relation to the moderating and mediating effects of work self-efficacy, an empirical study by Xanthopoulou et al., (2007) have specifically examined the effect of work self-efficacy as a major predictive construct of work engagement. The SEM analysis confirmed that work self-efficacy did not moderate the relationships between job demands as an antipode of job resources and work burnout as an antipode of work

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engagement. By contrast, their results of SEM analyses also confirmed that the relationships between job resources and work engagement is partially caused by work self-efficacy, suggesting that job resources foster the development of work self-efficacy. They concluded in their study that work self-efficacy interacts with job resources, thus activating work engagement. A study by Xanthopoulou et al., (2009a) also confirmed that work self-efficacy was always reciprocal with job resources and work engagement. Thus, job resources were found to predict work self-efficacy and work engagement, which, in turn, predicted job resources. Their results also validate the recent study of Sulistyo and Suhartin (2019), who found that job resources and work self-efficacy significantly affected work engagement. These recent and earlier results suggest that employees (e.g., vocational business lecturers) who experience higher levels of support from colleagues, various skills utilization, freedom in making job decisions, feedback on performance accomplishments, as well as opportunities for career development believe in their capabilities to successfully execute the specific job activities, such as teaching, research and administration, in turn, pave the way for the experiences of work engagement. Therefore, vocational business lecturers must be capable of successfully handling job activities, which calls for assessing the moderating effect of work self-efficacy in the relationships between job resources and work engagement.

Based on the literature review, we developed a direct and indirect model (Figures 1, 2, 3, and 4) on which all the hypothetical assumptions in the study were formed. Model 1 illustrated that when vocational business lecturers are exposed to a resourceful work environment, they will exert a higher level of work self-efficacy. Model 2 also illustrated that when vocational business lecturers are exposed to resourceful work environments, they will experience higher levels of work engagement. Model 3 also illustrated that when vocational business lecturers exert a higher level of work self-efficacy, they will experience higher levels of work engagement. Model 4 also illustrated that when the vocational business lecturers exert a higher level of work self-efficacy, it will help strengthen the relationships between job resources and work engagement. These underlying assumptions were supported by the earlier version of the JD-R model and the recent version of the JD-R theory.


**Fig. 1** *Hypothesized model illustrating the relationship* between job resources and work self-efficacy


**Fig. 2** *Hypothesized model illustrating the relationship* between job resources and work engagement


**Fig. 3** *Hypothesized model illustrating the relationship* between work self-efficacy and work engagement

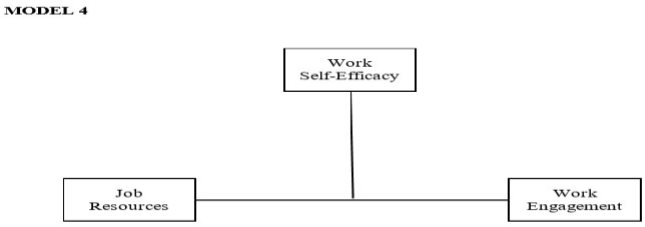


**Fig. 4** *Hypothesized model illustrating the moderator effect of self-efficacy in the relationships between job resources and work engagement*

Based on the pertinent literature review and the schematic model development, we formed our hypotheses as follows:

*H1:* Job resources will be positively related to work self-efficacy.
*H2:* Job resources will be positively related to work engagement.
*H3:* Work self-efficacy will be positively related to work engagement.
*H4:* Work self-efficacy will moderate the relationship between job resources and engagement.

## 4. Methodology

### 4.1 Research Design

A quantitative nonexperimental research design was used to accomplish the aim of the study. The design is suitable for the study because it has helped to determine the relationship between job resources and work engagement of vocational business lecturers with self-efficacy as a moderator. The extent of relationships between job resources, work self-efficacy, and work engagement among vocational business lecturers were determined with the Pearson (r) value.

### 4.2 Participants and Sampling Procedure

The participants comprised of 12 Heads of Department and 130 lecturers, given a total of 142 participants (Table, 1) from both Federal and State Universities in South-South Nigeria. A convenience sampling method was used to select 12 Heads of Department and 130 lecturers from the 12 public universities (Table 1). A convenience sampling is a non-probability sampling method used for the selection of participants to be included in the sample because they are the easiest for the authors to access as at the time the research was carried out (Creswell, 2012).

**Table 1** *Total number of respondents for each University in South-South, Nigeria*

| S/N | Federal Universities in South-South, Nigeria | Lecturers | HODs |
|---|---|---|---|
| 1. | University of Benin, Benin City: Edo State. | 14 | 01 |
| 2. | University of Calabar: Cross River State. | 20 | 01 |
| 3. | University of Port-Harcourt, Choba: Rivers State. | 07 | 01 |
| 4. | University of Uyo, Uyo: Akwa Ibom State. | 14 | 01 |
| 5. | Federal University, Otuoke: Bayelsa State. | 04 | 01 |
| | **Total** | **59** | **05** |
| **S/N** | **State Universities in South-South, Nigeria** | **Lecturers** | **HODs** |
| 6 | Ambrose Alli University, Ekpoma: Edo State. | 08 | 01 |
| 7. | Cross River State University of Technology: Cross River State. | 22 | 01 |
| 8. | Delta State University, Abraka: Delta State. | 11 | 01 |
| 9. | Edo University, Iyamho: Edo State. | 03 | 01 |
| 10. | Ignatius Ajuru University of Education: Rivers State. | 02 | 01 |
| 11. | Niger Delta University: Bayelsa State. | 14 | 01 |
| 12. | Rivers State University of Science and Technology: Rivers State. | 11 | 01 |
| | **Total** | **71** | **07** |
| | **Grand Total** | **130** | **12** |

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## 4.3 Data Collection Instrument

The data collection instrument was two structured questionnaires adapted from existing psychological scales (Table 2), one to be administered on lecturers and one to be administered on HODs. Participants (e.g., lecturers) rated their own experiences of job resources and work self-efficacy on a 4-point scale ranging from 4 = Always to 1 = Never. Participants (e.g., HODs) rated their own experiences of lecturers' work engagement on a 4-point scale ranging from 4 = Always to 1 = Never. The instrument for measuring HODs/colleagues support were adapted from the three item questionnaire constructed by Van Veldhoven and Meijman (1994), job autonomy were adapted from the job content questionnaire constructed by Karasek et al., (1998), performance feedback were adapted from the English JD-R questionnaire constructed by Bakker (2014b), career advancement possibilities were adapted from the three item questionnaire constructed by Bakker et al., (2003), variety of skills utilization and work self-efficacy were measured by the questionnaire constructed by the authors. The instrument for measuring cognitive, emotional, and physical work engagement were adapted from the scale developed by Rich et al., (2010), originally conceptualized by Kahn (1990). The Cronbach alpha reliability values for each of the constructs under study can be found in the diagonal of Table 3.

**Table 2** *Variables, items, and measurement scales*

| Variables | Items |
|---|---|
| Variety of Skills Utilization | My work requires me to utilize creativity/innovation skills.<br>My work requires me to utilize flexibility/adaptability skills.<br>My work requires me to utilize ICT literacy/numeracy skills.<br>My work requires me to utilize collaboration/teamwork skills. |
| HODs/Colleagues Support | I freely ask my colleagues for help on my job.<br>I count on my colleagues to support me when I encounter difficulties in my job.<br>I feel valued by my colleagues, and we collaborate effectively.<br>My HOD shows consideration for personal problems affecting my work.<br>My HOD values me and readily supports me.<br>My HOD uses his/her influence to help me solve problems at work. |
| Job Autonomy | I have control over how I carry out my work.<br>I can independently manage available resources for my work.<br>I am so hampered by guidelines and specifications that I hardly bring original ideas into my work. |
| Performance Feedback | My work offers me opportunities to check on how well I am performing.<br>Students' ratings inform me of how good or bad my performance is.<br>My HOD informs me whether he/she is satisfied with my performance. |
| Career Advancement Possibilities | My work offers me the opportunities to acquire (learn) new skills.<br>My work gives me opportunities to continually upgrade/update myself.<br>My work offers me the possibility of increased income. |
| Work Self-Efficacy | I believe that I am capable of performing teaching activities.<br>I believe that I am capable of performing research tasks.<br>I believe that I am capable of performing administrative responsibilities. |
| Work Engagement-Cognitive | My mind is often full of ideas about my work.<br>Wherever I am, things happen that often remind me of my work.<br>My mind is fully engaged with my work.<br>I rarely think about the time when I am working.<br>My thoughts are fully focused when thinking about my work.<br>I give a lot of mental attention to my work. |
| Work Engagement-Emotional | I feel very delighted about what I am doing whenever I am working.<br>I am very eager to do my work.<br>I feel very happy when I am carrying out my responsibilities at work.<br>I feel very good about the work that I do. |

| | |
|---|---|
| | I feel strong enthusiasm about my work. |
| | I feel a sense of gratification with my work performance. |
| **Work Engagement-Physical** | I have a great deal of stamina for my work. |
| | I am often physically driven by my work. |
| | I am frequently energized by my work. |
| | I find my work to be physically invigorating. |

## 4.4 Data Collection Procedure

Data collection instruments were distributed personally to the respondents, with the help of six research assistants who were briefed on the procedure to follow. The participants were contacted via letters before the instrument was administered using a direct contact mode. The participants were allowed to complete the instrument and were given the chance to return it two weeks later. Copies of the instrument on job resources and work self-efficacy were administered to lecturers since the instruments measuring these variables were self-report measurement scales. Conversely, copies of the instrument on lecturers' work engagement were administered to HODs to respond to their experiences of the subject matter since the instrument measuring this variable was an alternate measurement scale. To establish approximate matching, the instrument for measuring lecturers' work engagement was assigned a code. Such a code in a particular instrument for measuring lecturers' work engagement must correspond with the instrument administered to the HODs to respond to their experiences of lecturers' level of work engagement. For instance, coding for a particular instrument for measuring job resources and work self-efficacy must be the same for the instrument for measuring work engagement. The reason for the coding process was to ensure that the instrument for a particular lecturer corresponded with the instrument to be filled by the HODs for proper data analysis. The coding process was done by working closely with the respective HODs using the staff list of the department.

## 4.5 Data Analysis

The IBM SPSS Version 23.0 and PROCESS Macro for SPSS Version 3.4.1 by Hayes (2018) were used as statistical packages for data analysis. Descriptive (e.g., mean and standard deviation) and inferential (e.g., Pearson's correlation) statistics were performed to answer the research questions raised in the study. Inferential (e.g., linear regression) statistics were performed to test the direct hypothetical assumptions formulated in the study. Moderated (e.g., model 2 of bias-corrected and accelerated regression) statistics were performed to test the indirect hypothesis. The criteria for testing the direct hypotheses on whether job resources are positively related to work self-efficacy (model 1) and work engagement (Model 2) and whether work self-efficacy is positively related to work engagement (Model 3) is based on a range of a probability value less than or equal to .05, which implied significant, i.e., the hypotheses formulated are accepted. In contrast, when a range of probability value is greater than .05, it implies that it is not significant, i.e., the hypotheses formulated are rejected. Furthermore, the criteria for testing the indirect hypothesis on whether work self-efficacy moderates the relationships between job resources and work engagement (Model 4) is based on a range of the confidence interval values (i.e., lower and upper limit) that exist within the same axis (i.e., excluding zero value), implied significant, i.e., the hypothesis formulated is accepted. In contrast, when a range of the confidence interval values (i.e., lower and upper limit) cut across the same axis (i.e., including zero value), it implied significance, i.e., the hypothesis formulated is rejected.

# 5. Results

## 5.1 Descriptive and Inferential Statistics

To assess the levels of the study variables and the strengths of the associations between and among the study variables, mean, standard deviation, and correlation were performed.

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**Table 3** *Mean, standard deviation and correlation between the study variables*

| | Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | VSU | (.728) | | | | | | | | |
| 2. | COS | .240** | (.842) | | | | | | | |
| 3. | JOA | .339** | .599** | (.844) | | | | | | |
| 4. | PEF | .266** | .642** | .655** | (.755) | | | | | |
| 5. | CDO | .303** | .674** | .671** | .749** | (.868) | | | | |
| 6. | WSE | .309** | .552** | .444** | .567** | .513** | (.765) | | | |
| 7. | WEC | .213* | .311** | .285** | .381** | .305** | .204* | (.877) | | |
| 8. | WEE | .335** | .475** | .399** | .443** | .422** | .323** | .663** | (.948) | |
| 9. | WEP | .253** | .571** | .458** | .503** | .478** | .387** | .565** | .848** | (.902) |
| | *M* | 1.97 | 1.91 | 1.93 | 1.98 | 1.92 | 2.06 | 2.26 | 2.11 | 2.04 |
| | *SD* | 0.49 | 0.37 | 0.34 | 0.35 | 0.37 | 0.56 | 0.62 | 0.56 | 0.57 |

Note. $^{*}p < 0.01$, $^{**}p < 0.05$, $N = 142$, VSU = Variety of Skills Utilization, COS = Colleagues Support, JOA = Job Autonomy, PEF = Performance Feedback, CDO = Career Development Opportunities, WSE = Work Self-Efficacy, WEC = Work Engagement-Cognitive, WEE = Work Engagement-Emotional, WEP = Work Engagement-Physical.

Table 3 presented the correlation analysis between the study variables. Job resources and work self-efficacy positively correlated with work engagement (cognitive, emotional, and physical). The correlation among these variables varied from r=.204 to .381, .323 to .663 and .253 to .848. For example, performance feedback (*r*=.381) positively correlated with cognitive work engagement. The vocational business lecturer who exerts work self-efficacy (*r*=.204) towards his/her work will be more likely to engage cognitively at work. All in all, the correlation coefficient *r* values indicated that as job resources and work self-efficacy increases, work engagement decreases. These results supported research hypotheses and questions 1, 2, and 3.

Cronbach's alpha was used to ascertain the reliability of all the measurement scales. The reliability coefficient values for all the measurement scales fall within the acceptable range as recommended by Fornell and Larcker (1981) and Nunnally and Bernstein (1994). Coefficient alpha values for all the measurement scales ranged from 0.728 to 0.948 as shown in Table 3.

## 5.2 Regression Analysis

**Table 4** *Model summary of linear regression analyses on the relationship between the study variables*

| 10000 Resamples Bootstrap with BCa Estimates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | 95% CI | |
| Pathways | *SE (β)* | *t* | *Bias* | $R^2$ | *Adj.* $R^2$ | *p* | *LL* | *UL* |
| JR → WSE | .019 (.613) | 9.171 | -.001 | .375 | .371 | .000 | .142 | .219 |
| JR → WE | .073 (.548) | 7.744 | -.011 | .300 | .295 | .000 | .633 | .919 |
| WSE → WE | .575 (.327) | 4.094 | -.025 | .107 | .101 | .006 | .422 | 2.670 |

Note: *n*=142, a.) JR = Job Resources → WSE = Work Self-Efficacy (*F*=84.112), b.) JR = Job Resources → WE = Work Engagement (*F*=59.976), c.) WSE = Work Self-Efficacy → WE = Work Engagement (*F*=16.762), BCa = Bias-Corrected and Accelerated Estimates, CI = Confidence Interval.

Table 4 presents the model summary of the linear regression analysis used to analyze the relationship between job resources, work self-efficacy and work engagement. Model 1 was a job resource predicting work self-efficacy-only model. Model 1 was statistically significant [F (1, 141)] = 84.112, p < .001. Model 1 showed that job resources (e.g., variety of skills utilization, colleague support, job autonomy, performance feedback, and career advancement opportunities) explained 37.1% of the variance in work self-efficacy. Model 1 showed that job resources significantly predicted work self-efficacy. This result supported hypothesis 1.

Model 2 was a job resource predicting work engagement only model. Model 2 was statistically significant [F (1, 141)] = 59.976, p < .001. Model 2 showed that job resources (i.e., variety of skills utilization, colleague support, job autonomy, performance feedback and career advancement opportunities) explained 30% of the variance in

work engagement. Model 1 showed that job resources significantly predicted work engagement. This result supported hypothesis 2.

Model 3 was a work self-efficacy predicting work engagement-only model. Model 2 was statistically significant [F (1, 141)] = 16.762, p < .001. Model 2 showed that work self-efficacy explained 10.1% of the variance in work engagement. Model 1 showed that work self-efficacy significantly predicted work engagement. This result supported hypothesis 3.

## 5.3 Moderation Analysis

**Table 5** *Model summary of the indirect relationship between job resources and work engagement*

| 10000 Resample Bootstrap with BCa Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | 95% CI | |
| Predictor | Moderator | Pathways/Effects | Beta *(β)* | *SE* | *p* | *LL* | *UL* |
| JR | WSE | JR → WE | .820 | .250 | .001 | .326 | 1.314 |
| | | WSE → WE | -.966 | 1.701 | .571 | -4.329 | 2.397 |
| | | JR × WSE → WE | .006 | .034 | .852 | -.061 | .073 |

Note: *n*=142, LL = Lower Limit, UL = Upper Limit.

Table 5 presented the model summary of the moderation analysis. The first predictor variable: job resources ($\beta$ = .820, $p$ < .001, LLCI = .326 to LLCI = 1.314) examined in Model 1 had a positive relationship with work engagement. While the second predictor variable: work self-efficacy ($\beta$ = -.966, $p$ > .571, LLCI = -4.329 to LLCI = 2.397) examined in Model 2 had a negative relationship with work engagement. The moderation variable examined in Model 3 indicated no significant interaction effect of work self-efficacy with job resources on work engagement ($\beta$ = .006, $p$ > .852, LLCI = -.061 to LLCI = .073). Job resources accounted for a low percentage (26.7%) of variation in work engagement. The findings also showed that work self-efficacy does not moderate the relationship between job resources and work engagement. This result unsupported hypothesis 4.

## 6. Discussion

The goal of the study was to gain a more in-depth understanding of the impact of vocational business lecturers' job resources and work self-efficacy on their work engagement. Overall, there were positive and significant relationships between job resources (e.g., variety of skills utilization, colleagues support, job autonomy, performance feedback, and career advancement opportunities) and work self-efficacy. There were also positive and significant relationships between job resources (e.g., variety of skills utilization, colleagues support, job autonomy, performance feedback, and career advancement opportunities) and work engagement (cognitive, emotional and physical). There were also positive and significant relationships between work self-efficacy and work engagement (cognitive, emotional, and physical). These findings imply that the more resourceful and efficacious vocational business lecturers are, the more likely they will engage on the job.

This study supports the results of previous empirical studies and theoretical assumptions that there is a positive relationship between job resources and work engagement. Study also found that job resources are associated with work self-efficacy; emphasizing that when vocational business lecturers are exposed to a resourceful working environment, they exert self-efficacy at work. Overall, job resources (e.g., performance feedback) had a stronger positive correlation with work self-efficacy when compared to other job resources. Vogt et al., (2016) also found that employees who proactively built a resourceful and challenging working environment for themselves, increased their own as self-efficacy. The study of Trépanier et al., (2014) suggests that harmonious passion partly explain why job resources are associated with the work self-efficacy of employees. These results suggest that employees need to have a certain level of awareness on their past performance compliments. Job resources impact efficacy levels, thereby emphasizing the need for colleague support, a resourceful, working environment, and a job itself that is challenging.

Job resources and work self-efficacy positively correlated with work engagement, suggesting that work engagement increases as work self-efficacy and job resources increase. Previous studies have concurred with the underlying propositions of the JD-R theory, namely that personal resources (e.g., work self-efficacy) is the most salient predictors of work engagement (Schaufeli & Taris, 2014; Bakker & Van Wingerden, 2021). For instance, an employee is engaged at work when the employee is exposed to a resourceful working environment (Osborne & Hammoud, 2017). Research findings have shown that employees who proactively built a resourceful and challenging working environment for themselves, enhanced their own positive work well-being such as work engagement. Research have also shown that when job resources increases, employees engagement at work increases (Weigl et al., 2014; Hakanen et al., 2021; Sharma, 2021). Not surprisingly, job resources and work

engagement have been found to be related (Bakker, 2014a; Ilies et al., 2015). Research findings suggested that harmonious passion partly explain why job resources are related to work engagement (Trépanier et al., 2014). This finding implied that work self-efficacy will be hindered when employees experience high levels of job resources. Some studies have examined the level of work engagement among employees and found that exposure to a resourceful working environment is an important tool for increasing self-efficacy and engagement (Bakker & van Woerkom, 2017). A study of vocational and technical teachers found that high levels of work self-efficacy led teachers to a greater commitment to the school district (Song et al., 2018). When employees exert high levels of work self-efficacy, there is an increase in their work engagement (Liu & Huang, 2019). However, the interplay between job resources, work self-efficacy, and work engagement of vocational business lecturers have received a far less research attention despite the place of engaged employees in fostering organizational productivity.

## 7. Implications for Research, Theory and Practice

The findings of this study provided the implications for research. For instance, this study agrees with the previous studies by supporting the relationships between job resources, work self-efficacy and work engagement. Work engagement that is too low affects lecturers, students, parents, administrators, managers, and policymakers. Creating strategies to increase lecturers' work engagement is critical to lecturers' job performance and students' academic performance. Future research should focus on lecturers' job resources, work self-efficacy, and work engagement, which will benefit not only vocational business programmes but also other academic disciplines. Possible future research may focus on experimental, longitudinal and qualitative research, such as face-to-face interviews and rigorous intervention process with vocational business education lecturers to obtain richer perspectives. It was observed that the lecturers who participated in the study were from vocational business disciplines. For instance, interviewing lecturers from other vocational-oriented disciplines in the future would add the information or knowledge that is critical to lecturers' engagement and job performance in the vocational technology classroom. Future research that includes vocational business lecturers in other vocational-based institutions such as polytechnics, colleges, and innovation enterprises would help to build on the theories of job resources, self-efficacy, and engagement.

The findings of this study support previous research by showing that when employees experience adequate job resources and exert higher work self-efficacy, engagement at work increases (Xanthopoulou et al., 2007). Future research could broaden the findings of this study by introducing constructs or variables, such as motivation, conducive working environment, and other factors that may contribute to job resources and work self-efficacy to activate work engagement. This study found that work self-efficacy did not moderate the interplay between job resources and work engagement. Work self-efficacy has not been extensively studied as a moderating variable in the relationship between job resources and work engagement. Further studies should be carried out in the future to investigate work self-efficacy as a moderating variable. Because the management of human resources has become a global concern, it would also be value-adding to replicate the study in other geographical regions and countries to be able to compare similarities and differences in findings.

This study has increased the understanding of the importance of having resourceful and efficacious lecturers in vocational business disciplines. Estimating the levels of lecturers' work self-efficacy and job resources often and periodically increases the level of work engagement. Xanthopoulou et al. (2007) reported that job resources and work self-efficacy are variables or constructs that potentially increase the level of work engagement. It is imperative for university administrators and policymakers to be aware of the role of work self-efficacy and job resources on work engagement. Strategies, such as the increased use of various skills, career development initiatives and programmes, support from colleagues, challenging job responsibilities, and a certain level of job autonomy, should be encouraged to increase work engagement among lecturers. Some certain levels of job freedom or job autonomy are necessary for lecturers to be able to handle job responsibilities timely (Derby-Davis, 2014).

The findings of this study also provided implications for theory. The study focused on the moderating effect of work self-efficacy in the relationship between job resources and work engagement, which relatively has received a minimal empirical investigation, especially in the context of vocational-based disciplines. The study has indeed contributed to the JD-R theory and the COR theory by providing a framework that provided the understanding concerning the moderating effect of work self-efficacy in the relationship between job resources and work engagement. For instance, the JD-R theory assumes that the motivational process which constituted the abundance of job resources leads to work self-efficacy and work engagement (Xanthopoulou et al., 2007). Job resources were assumed to be part of the motivational process that increase work self-efficacy and engagement. Future studies should focus on this indirect interplay to investigate the different job resources, personal resources and positive well-being.

The findings of this study also provided implications for practice. The findings can provide university administrators and policymakers with great insight into how engagement at work can be activated via the interaction between job resources and self-efficacy. University administrators and policymakers can ensure the

availability and abundance of job resources and reinforce work self-efficacy by creating a working environment that supports a variety of skills utilization, help from colleagues, job autonomy, performance feedback and career advancement opportunities, in turn, will activate work self-efficacy and engagement of staff. Therefore, a resourceful working environment should be carefully created to foster work motivation and engagement of staff. Creating a resourceful working environment should be one of the core missions of university administrators and policymakers.

## 8. Limitations of the Study and Future Practical Recommendations

The study has limitations that should be considered when making recommendations for future practice. First, the study employed self and alternate-report measures, which implies that data were collected just once from two sets of participants, in a single (i.e. public) university working environment in the South-South Region of Nigeria, which implies that caution should be taken into cognizance not to generalize the findings beyond this study. Therefore, future studies should endeavour to accommodate a more proportionate sample, covering wider participants (e.g., vocational-technical lecturers, vocational agricultural science lecturers, and vocational home economics lecturers) as well as covering wider geographical locations (e.g., South-East, South-West, North-East, North-West, and North-Central) to have a more balanced result. Thus, the result should be used generally to improve the quality of vocational business programme. Second, the sample size for this study is small (n = 142) vocational business lecturers, not incorporating lecturers of other disciplines. Therefore, future studies should collect data from a larger sample and extend the study to lecturers from other disciplines. Future studies should also endeavour to utilize the research results on a large scale so as to benefit the improvement of the quality of vocational education. Third, data collection via self and alternate-reported questionnaires could result in a social bias. Thus, future studies should endeavour to employ a mixed method approach such as nonexperimental quantitative and qualitative survey research approaches for data collection.

## 9. Conclusions

Based on the findings of the study, it can be asserted categorically that the vocational business lecturers who are exposed to the availability and abundance of job resources will exert a higher level of work self-efficacy. The vocational business lecturers who are exposed to the abundance of job resources will activate a higher level of work engagement. It can also be asserted that the vocational business lecturers who exert a higher level of work self-efficacy, will activate a higher level of work engagement. It can also be asserted that the exertion of low self-efficacy towards work will not moderate the relationship between job resources and work engagement.

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## Conflict of Interest

The authors declare that there is no conflict of interest regarding the paper's publication.

## Author Contribution

*The authors confirm contribution to the paper as follows:* ***study conception and design:*** *James Edokpolor, Robinson Owenvbuigie;* ***data collection:*** *James Edokpolor;* ***analysis and interpretation of results:*** *James Edokpolor, Robinson Owenvbuigie, Vikrant Jaswal;* ***draft manuscript preparation:*** *James Edokpolor, Tee Tze Kiong. All authors reviewed the results and approved the final version of the manuscript.*

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