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The Mechanism of an Individual's Internal Process of Work Engagement, Active Learning and Adaptive Performance

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Abstract: This paper aims to investigate the mechanism linking an individual's internal processes, work engagement, active learning, and adaptive performance in three of Indonesia's digital technology-based companies. The research uses a mixed-method approach. The first study used a quantitative research method in which the data is based on a survey of 185 employees and the collected survey data is then analyzed using the Structural Equation Modeling technique. The second study used a qualitative research method where the data is gathered from 17 managers through semi-structured interviews. We found from the quantitative research that work engagement fully mediates the relationship between self-efficacy and a growth mindset toward active learning. Meanwhile, a partial mediating effect of active learning between work engagement and adaptive performance was also discovered. Based on our literature study, previous research has shown inconsistent findings on the relationship between growth mindset and work engagement. Our findings contribute to the existing literature by clarifying the direct relationship between growth mindset and work engagement. Meanwhile, the qualitative findings emphasized that there are two mechanisms underlies individual adaptive performance (i.e., work engagement and active learning). Additionally, the active learning process promotes continuous new knowledge accumulation to produce new innovation inside an organization.

Keywords: active learning; growth mindset; self-efficacy; engagement of employees; adaptive performance; innovation management

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1. Introduction

The global economic situation and digital technology advancement have produced massive changes in markets and societies. In response, organizations require a mechanism that helps their employees to adapt by becoming more agile and efficient in all work processes (van den Heuvel et al. 2020). The construct used to measure individual capabilities to adapt is that of adaptive performance, which consists of five criteria: creative problem solving, handling emergencies and work stress, interpersonal adaptability and training effort (Charbonnier-Voirin and Roussel 2012). On the other hand, one of the most well-known factors affecting individual adaptive performance is work engagement. However, no significant impact of work engagement on adaptive performance in a change organizational context has been found. The insignificant result is explained as being caused by the different impact of work engagement in each dimension of adaptive performance (van den Heuvel et al. 2020). This indicates that our existing understanding of work engagement-related adaptivity requires further investigation.

Employee capabilities are also cited as a main factor in innovation processes, becoming the source of ideas and creativity underpinning a company's competitive advantage through a learning process (De Spiegelaere et al. 2015). Meanwhile, employee learning is also beneficial in supporting the skill acquisition process necessary to meeting organizational needs in adopting digital technological advancements (Richels et al. 2020). These

authors also stated that the learning process constitutes a switching-driven behavior within an individual adaptive mechanism. Bäckström and Bengtsson (2019) emphasized that studies of employee-driven innovation through a learning process are limited in number. Moreover, the role of knowledge exploitation is also essential to identifying the company's unlimited potential in terms of competitive advantage within a digital business context (Di Vaio et al. 2021). Significantly, the uniqueness of the innovation process in digital-based companies lies in knowledge exploitation based on the knowledge combination process. Furthermore, effective intervention in knowledge exploitation results from double-loop learning and knowledge sharing with external parties such as clients (Kohli and Melville 2019).

One of the optimal learning methods that promotes switching behavior within adaptive performance and involves a double-loop process is that of active learning. This learning approach features self-initiative, self-regulated learning behavior, and a resulting mastery of new skills (Bakker et al. 2012). Bell and Kozlowski (2008) previously argued that this method provides the opportunity for employees to explore, with continual feedback being provided by their superiors. During this double-loop mechanism, employees can adapt their behavior according to the problem-solving needs of their workplace, thereby enabling them to maximize their adaptive performance. Moreover, Bell and Kozlowski's (2008) analysis emphasized the need for future studies to explore the internal process underpinning the adaptive mechanism.

Thus, the explanation above shows that the optimal skill acquisition process will determine the success of the individual adaptation process in the workplace. Moreover, the current concept of adaptive performance is closely related to the changing needs of the market and digital-tech development. The research gap proposed by van den Heuvel et al. (2020) and Bell and Kozlowski (2008) explains that adaptive performance may form through a double-loop learning process. The double-loop learning will lead individuals to a better problem-solving scheme in response to the rapid changes in their workplaces. In addition, double-loop learning may optimize the product innovation process along with the new potential in the market. Therefore, we conclude that the learning process is critical in changing individual behavior to adapt to the external environment, such as supervisors and market demand.

Besides the learning process, individual internal processes, namely growth mindset and self-efficacy, are considered essential factors affecting work engagement and adaptive mechanisms. This is because individual internal processes, like personal resources, may optimize individual adaptive performance (Demerouti et al. 2010). Likewise, work engagement drives individuals to voluntarily invest more of their personal resources to fulfill their job demands (Hakanen and Roodt 2010). However, research on the empirical relations between growth mindset and work engagement is still limited (Caniëls et al. 2018). Bakker and van Wingerden (2021) explain that only a few studies of this mechanism have been conducted. Hence, the existing studies have not explicitly explained the relation between individuals' internal processes—such as growth mindset and self-efficacy—and adaptive performance, especially through work engagement and active learning mechanisms.

The previous research from van den Heuvel et al. (2020) explored the meaning-making factor which focuses on individual mechanisms based on the Conservation of Resources (COR) theory. COR theory emphasizes that the inherent personal resources of employees need to be retained and protected (Hobfoll et al. 2018). This theory then highlights that high job demand will lead individuals to higher emotional exhaustion. Meanwhile, based on the Job Demand-Resources (JD-R) theory, individuals with high job demands will retain good job outcomes through the role of work engagement. Therefore, our research aims to explore the perspective of personal resources such as self-efficacy and growth mindset through the perspective of the JD-R theory. The JD-R theory highlights the importance of organizations in disseminating personal resources through learning processes to generate higher adaptive performance and innovation inside organizations. Hence, our research

highlighted that these personal resources need both to be maintained and disseminated among other employees to maximize innovative ideas within a company's learning context.

Furthermore, we also underlined the optimal learning method of creating digital innovation within companies through double-loop and knowledge exploitation, namely the active learning approach. Our research is then expected to contribute to the literature by identifying that the learning process approach suitable for digital technology-based companies is the one that prioritizes a learner-centered mechanism. Therefore, we aim to explore the relationship between and mechanisms of an individual's internal processes (i.e., growth mindset, self-efficacy), work engagement, active learning, and adaptive performance. Thus, our research aims to fill the missing link between an individual's internal processes and adaptive performance through two mechanisms, work engagement and the active learning process.

2. Literature Review

2.1. Self-Efficacy and Work Engagement

Human resource management capability constitutes a key factor in maximizing a company's internal resources, particularly that of an individual's attitude towards his/her own abilities and strengths as indicated in their level of work engagement within the workplace (Bakker and van Wingerden 2021). According to Hakanen and Roodt (2010), work engagement can be portrayed in three dimensions of behavior, namely: Vigor, or high mental resilience at the workplace; Dedication, or high levels of enthusiasm in the workplace; and Absorption, which refers to high levels of long-term concentration on work. One determining factor of employee work engagement levels is the self-efficacy that emerges from individuals' internal processes. Del Libano et al. (2012) explain that those with high self-efficacy tend to be more resilient in facing changes, conflicts, and failure since they have considerable confidence in their self-ability. This positive mental condition subsequently provides greater energy for individuals to engage in their work, despite the new problems inherent in their job demands (Knight et al. 2021).

Studies that examine psychological processes within the context of work engagement from the point of Job Demand-Resources (JD-R) Theory remain limited in number. This is supported by the meta-analysis contained in the previous research by Lupșa et al. (2020), which found that personal resource intervention, particularly self-efficacy, remains inadequate in explaining its relationship with work engagement within the context of the Job Demand-Resources Theory. In addition, Bandura (2012) regards study of the self-efficacy concept within the realm of work as essential.

According to Bakker and Demerouti (2007), JD-R Theory is the main foundation of an understanding of an individual's level of work engagement within the workplace. They explain that the work engagement mechanism is activated according to the job demands of the organization balanced with the job resources available to individuals. Job demands usually take the form of time pressure, workloads, and emotional demands within the workplace (Knight et al. 2021). Meanwhile, one underlying factor of job resources is that of personal traits such as self-efficacy and a growth mindset. Del Libano et al. (2012) explain that high job demand will decrease when the individual has significant job resources, which leads him/her to higher work engagement. Moreover, Caesens and Stinglhamber (2014) state that individuals with significant self-efficacy tend to feel less frustrated by their work, despite being subject to huge job demands. Therefore, self-efficacy can be defined as an improvement process for individuals in which they view their high job resources positively. The pragmatic traits of individuals, namely their self-efficacy, will reduce their job demands, thereby enabling them to maintain persistence, dedication, and a high level of engagement in relation to their job (Schaufeli and Bakker 2004; Koyuncu et al. 2006; Halbesleben 2010; Christian et al. 2011; Bakker and Xanthopoulou 2013).

2.2. Growth Mindset and Work Engagement

The main goal of optimal human resource management is to enhance a company's competitive advantage in terms of innovation and creativity (Han and Stieha 2020). These authors explain that innovation is achieved through trial and error during the work process and market exploration. One internal individual factor that encourages a company's innovation is that of a growth mindset which constitutes an individual's way of thinking that perceives personal traits and abilities as properties that can be developed and changed (Dweck 2006).

A growth mindset is known to increase individual enthusiasm, focus, and effort and, in turn, an employee's work engagement. However, existing studies have not consistently provided empirical supporting data confirming the relationship between growth mindset and work engagement. A study conducted by Caniëls et al. (2018) found no direct relationship between a growth mindset and work engagement. In their analysis, they argue that a growth mindset restrained individual work engagement, which indirectly reduces individual performance. They recommended further study of the relationship between work engagement and a growth mindset using five mechanisms: enthusiasm for development, positive belief, effort, attention, and personal interaction (Keating and Heslin 2015). In our research, these concepts are studied within the variable of adaptive performance (Charbonnier-Voirin and Roussel 2012). Therefore, the concept of mindset within the context of human resource development needs to be studied more broadly, not only in traditional educational settings, but also in workplace learning (Han and Stieha 2020).

2.3. Work Engagement and Active Learning

As recommended by Han and Stieha (2020), further study of mindset within the context of workplace learning is required. Therefore, one of the concepts to be analyzed in our study is that of active learning, which is known as a medium for developing employees' skills and capabilities (Simmering et al. 2003). Bakker et al. (2012) explained that active learning has three main characteristics: the motivation to learn on one's own initiative, control over the learning process, and a high sense of mastery and self-efficacy. It can, therefore, be understood that the process of active learning focuses on the processes of control by the individual.

One theory that lays the foundation for active learning and work engagement is the job demand-control model. De Spiegelaere et al. (2015) explained that a higher level of job control fosters a more optimal active learning process despite high job demand. With this high level of job control, individuals would invest more effort in their labors, resulting in higher work engagement (Bakker et al. 2012). Additionally, those who are engaged in their work tend to be more willing to seek additional knowledge and develop their own capabilities (Fredrickson and Losada 2005).

2.4. Work Engagement and Individual Adaptive Performance

Employees' failure in adapting to organizational change is caused by a lack of the required behavioral intervention (Oreg et al. 2011; Vakola 2013). One behavior known to optimally support an individual's workplace adaptation process is work engagement. According to the job demand-resources theory, high job resources, such as high self-efficacy and a growth mindset, can balance the dynamic changes in job demands, resulting in higher adaptive performance (Christian et al. 2011). Moreover, Park et al. (2020) point out that studies of adaptive performance through the prism of the job demand-resource model remain extremely limited. They also explain that individuals with higher work engagement are more focused on expending their energy on their work and are more prepared for dynamic changes in the market.

Charbonnier-Voirin and Roussel (2012) defined adaptive performance as consisting of five dimensions: creativity, reactivity to emergencies, interpersonal adaptability, training effort, and handling work stress. These play an important role in maintaining an opti-

mal work process within organizational change as well as market demand fluctuations (Frese 2008).

2.5. Active Learning and Individual Adaptive Performance

Employee's adaptivity helps companies to build a sustained performance and seize new opportunities in the market (Babeľová et al. 2015; Babeľová and Stareček 2021). Moreover, there is an increasing body of research on the determinants of individual adaptive performance (Richels et al. 2020). In detail, Baard et al. (2014) reported a growth of current research interest in individual characteristics and learning processes that boost individual adaptive performance. Currently, the recent research conducted by Park et al. (2020) suggests that future research may explore the learning approach effective in enhancing individual adaptive performance. One of the learning approaches that is beneficial for individual adaptive mechanisms is active learning. The active learning approach enables higher control of employees' learning processes and the use of trial-error processes in exploring the market, gaining new knowledge, and developing new capabilities (Keith and Wolff 2014). This process allows individuals to employ positive behavior to deal with changes in the workplace and results in higher adaptive performance. Therefore, we propose that the concept of active learning can enhance adaptive performance.

Overall, this study aims to examine the relationship and mechanisms that have been built between the growth mindset and self-efficacy as personal resources with work engagement, active learning, and adaptive performance through the Job Demand-Resources Theory mechanism. Personal resources here refer to positive internal factors within the individual. Among them are a growth mindset and self-efficacy. Van Wingerden et al. (2017) explained that personal resources play an essential role in optimizing the level of individual work engagement through the job demand buffering mechanism and the job resources owned by employees. In addition, the Job Demand concept can maximize the active learning process as an intrinsic motivational factor. Personal resources also act as an intrinsic motivational process to enhance individual learning effort and adaptability in the workplace (Taris and Schaufeli 2015; Park et al. 2020).

3. Methods

This research investigates the mechanism between an individual's internal process, work engagement, active learning, and adaptive performance in digital technology-based companies. Details of the research questions are provided below:

RQ1: *What is the relationship between an individual's internal processes (i.e., growth mindset, self-efficacy), work engagement, active learning, and adaptive performance?*

RQ2: *What is the mechanism linking an individual's internal processes (i.e., growth mindset, self-efficacy), work engagement, active learning, and adaptive performance?*

This approach employs pragmatic understanding to gain a new and deeper appreciation of the underlying mechanism (Yvonne Feilzer 2010). Melão and Reis (2020) also emphasized that a qualitatively-driven explanatory sequential mixed method enables researchers to apply in-depth information mechanisms in obtaining quantitative results. Qualitative research produces an in-depth and detailed understanding of the mechanism, yet can be biased due to the limited number of participants. Therefore, through the mixed-method design, quantitative research offers a comprehensive understanding of the relationship between variables through more generalized results (Nunfam 2021).

In detail, based on the research aim outlined above, the question "What is the relationship between an individual's internal processes, work engagement, active learning, and adaptive performance" is examined using a quantitative method. Meanwhile, the question "What is the mechanism linking an individual's internal process, work engagement, active learning, and adaptive performance" is explored using a qualitative method. This sequence is known as the mixed method with an explanatory design. Thus, the explanatory mixed-

method approach can uncover deeper findings and clarify the mechanism and relationships in this research.

Regarding the data collection process, we implemented quota sampling techniques. This sampling allows researchers to select a certain characteristic representing the population (Acharya et al. 2013). The quota sampling method can also reduce bias during the selection step. The quota in this study is represented by a minimum of 2 years of work experience in the industry. Moreover, the use of quota sampling ensures the representation of different work experiences in the current company, which is the case study in our research.

The representation was divided into respondents with less than one year experience, one to three years' experience, and more than three years' experience inside those three companies. In detail, the survey respondents in our research were composed of 185 employees selected through quota sampling. On the other hand, the semi-structured interview includes 17 interviewees drawn from the top management of three digital startups in Indonesia employing purposive sampling. The purposive sampling is drawn from the amount of work experience of the managers in the industry, i.e., more than five years. Lastly, this research was conducted during a pandemic, so the data collection process was carried out using online forms for the survey and online interviews for the semi-structured interviews.

The measurement used in the survey of active learning utilizes four items from Taris et al. (2003) and Bakker et al. (2003). Self-efficacy is quantified based on four items proposed by Bandura (2006). The growth mindset is measured using three items from Dweck (2006). Work engagement is quantified using five items from Schaufeli et al. (2006), which include vigor, dedication, and absorption dimensions. Finally, individual adaptive performance employs five items from Charbonnier-Voirin and Roussel (2012): creativity, reactivity towards emergencies, interpersonal adaptability, training effort, and handling work stress.

This research used Smart-PLS designed by Ringle et al. (2015) and calculated the reliability, validity of path coefficients, and model fit, as well as the result of the indicator loading convergent validity, and composite reliability. To test validity, this research employs the standard AVE value of at least 0.5 (Fornell and Larcker 1981). Meanwhile, for the reliability test, the Cronbach Alpha value of more than 0.5 was adopted (Hair et al. 2010). This research analyzed 5000 bootstrap samples with a 95% confidence interval. To maintain the validity of the qualitative data, data and theoretical triangulation was employed (Oevermann 1979; Fielding and Fielding 1986). In detail, we collected the qualitative data to enrich the quantitative findings by exploring the mechanism between variables (see Figure 1).

As conducted by (Babeľová and Stareček 2021), the triangulation of this study is performed as follows. In the first research phase, we tested the relationships between variables such as self-efficacy, growth mindset, active learning, work engagement, and adaptive performance. In the second research phase, we clarified the underlying mechanism between those variables in the next phase using a qualitative approach. Our paper presents and compares both results.

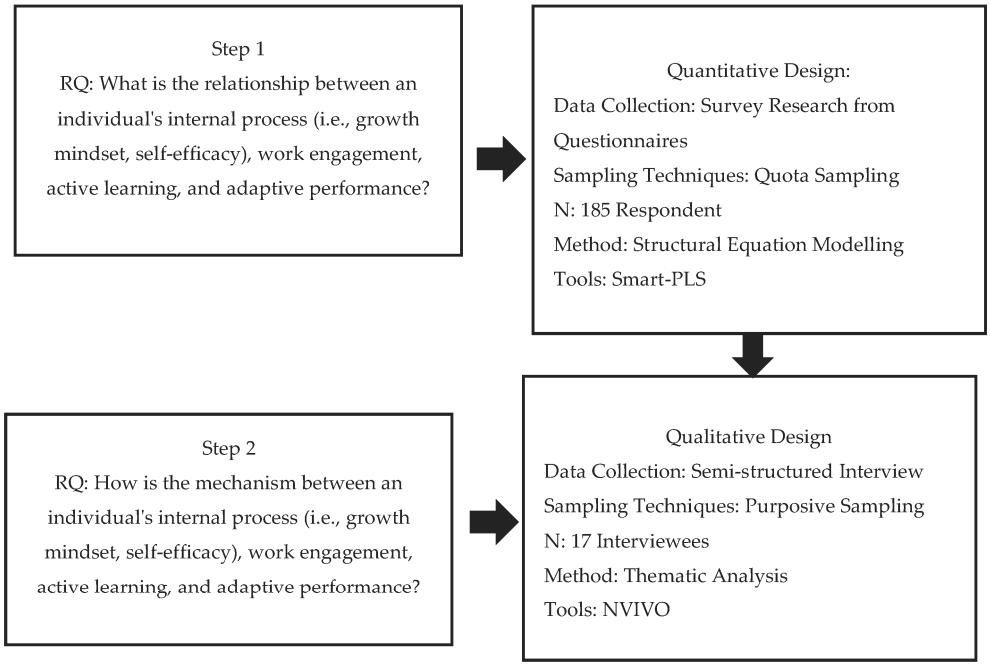

Figure 1. Research design.

4. Results

4.1. Survey Result

The results showed that the indicator for reliability, internal consistency reliability, and convergent validity were valid and reliable. The five variables had indicator loadings above 0.6 L, and Cronbach Alpha above 0.6. Active learning, work engagement, adaptive performance, self-efficacy, and a growth mindset were shown to be valid and reliable items (see Figure 2 and Table 1).

In order to produce an adequate goodness of fit model, path analysis was performed as shown in Figure 1 and Table 2. The Standardized Root Mean Square calculation result was 0.076. This number is below 0.10, thus fulfilling the criterion for the existing fit model (Cangur and Ercan 2015).

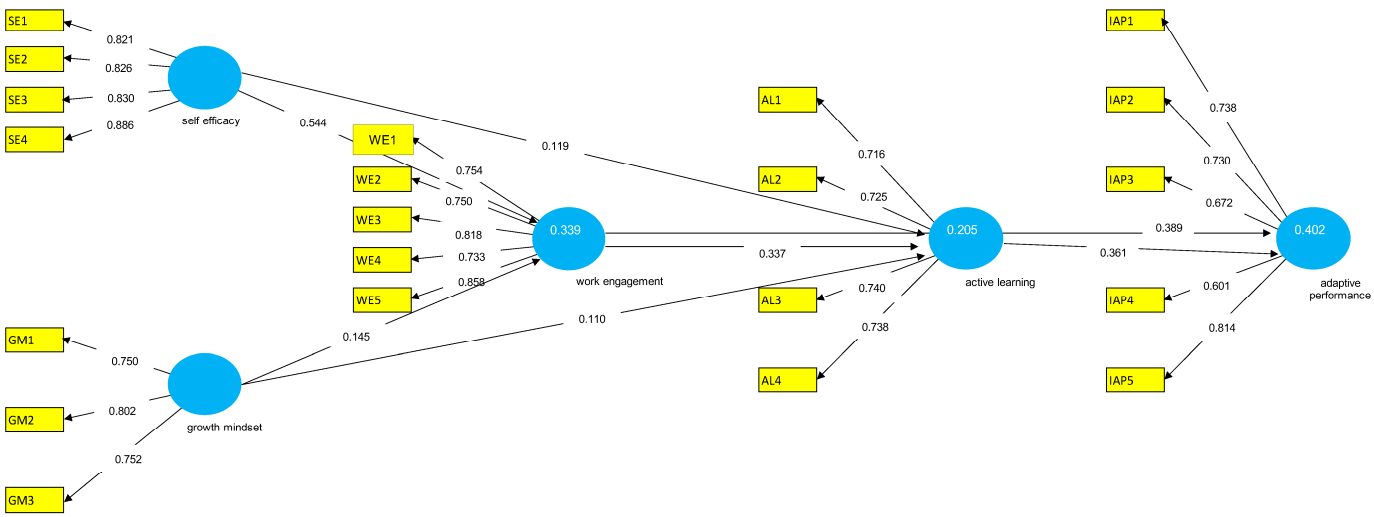

Figure 2. Smart-PLS result.

Table 1. Indicator reliability and convergent validity.

Construct	Items	Loadings	Cronbach's Alpha
Active Learning	AL1	0.716	
	AL2	0.725	
	AL3	0.740	
	AL4	0.738	0.708
Work Engagement	WE1	0.754	
	WE2	0.750	
	WE3	0.818	
	WE4	0.733	
	WE5	0.858	0.841
Individual Adaptive Performance	IAP1	0.738	
	IAP2	0.730	
	IAP3	0.672	
	IAP4	0.601	
	IAP5	0.804	0.758
Self-Efficacy	SE1	0.823	
	SE2	0.823	
	SE3	0.828	
	SE4	0.887	0.862
Growth Mindset	GM1	0.750	
	GM2	0.802	
	GM3	0.752	0.657

Table 2. Testing the significance of path coefficient relationships.

Relationships	Beta	S.D.	T-Stat	*p*-Value	Decision
Self-Efficacy → Work Engagement	0.537	0.066	8.083	0.000	Supported
Growth Mindset → Work Engagement	0.183	0.064	2.838	0.005	Supported
Work Engagement → Active Learning	0.418	0.074	5.549	0.000	Supported
Self-Efficacy → Active Learning	0.058	0.074	0.791	0.429	Not Supported
Growth Mindset → Active Learning	0.097	0.069	1.416	0.157	Not Supported
Work Engagement → Adaptive Performance	0.367	0.064	5.759	0.000	Supported
Active Learning → Adaptive Performance	0.454	0.060	7.624	0.000	Supported

The regression testing results in Table 2 indicate five direct relationships. The significant ones are those displaying T-stat results above 1.96 and *p*-value results below 0.05. Based on this standard, there are five significant direct relationships: the effect of self-efficacy and growth mindset on work engagement, the effect of work engagement on active learning and adaptive performance, and the significant influence of active learning on adaptive performance. The results above also indicated that work engagement fully mediates the relationship between self-efficacy and growth mindset and active learning. This is shown by the insignificant effect of self-efficacy and growth mindset on active learning together with the partial mediating effect of active learning on the relationship between work engagement and adaptive performance. This is shown by the direct significant relationship between work engagement and adaptive performance.

4.2. Interview Result

From the content analysis of the interviews, this research identified the detailed process underpinning the mechanism between self-efficacy, growth mindset, work engagement, active learning, and adaptive performance. The following sections explain the findings and insights from the process, involving the following variables (See Appendix A).

4.2.1. The Mechanism between an Individual's Internal Processes, Work Engagement, and Active Learning

The internal processes of an individual can optimally promote initiative on the part of each employee. Therefore, a growth mindset in individuals accompanied by high self-efficacy directly increases work effort, with specific regard to work engagement such as high enthusiasm at work (vigor), dedication toward new job demands, and enjoyment of long working hours (absorption). These positive internal processes also encourage individuals to be more open to new knowledge and dynamic changes in their external environment which encourages their self-initiative and trial-error learning that are defined as the constructs of active learning. Consequently, they can immediately adapt to the dynamic changes that exist at that time and demonstrate high work engagement within the context of digitally-based companies.

To maximize the digital innovation process, employees tend to be willing to learn new things and implement the exploration process unaided. Not only do they learn independently in creating digital innovation, but also implement a continuous knowledge-sharing process through an active learning mechanism. More specifically, this market exploration, new knowledge, and novel technologies encourage a knowledge combination process useful in introducing digital innovations to address problems or needs in the market.

4.2.2. The Mechanism between Work Engagement, Active Learning, and Adaptive Performance

Based on the foregoing analysis, work engagement plays a vital role in supporting employees in their adaptive mechanisms. In other words, work engagement allows an individual to quickly adapt to the dynamic changes in the market or in client demands through the three dimensions of behavior in work engagement. First, vigorous behavior leads individuals to willingly take the initiative in implementing a trial-error learning process as a means of obtaining new knowledge and satisfying higher job demands. Second, this dedicated behavior enables them to be more responsible and encourages an active learning process which helps them become more adaptive in the workplace. Finally, individuals with absorbing behavior tend to have highly self-regulated learning and explore problems in their job as an opportunity for further learning.

This behavior also allows them to optimally adapt their product features by following the changes in digital technologies. Work engagement also leads to higher interpersonal adaptation to different teams. These dynamic changes in team projects enable them to acquire additional new accumulative knowledge. These processes lead individuals to generate more innovative ideas. The accumulated knowledge process in the research is based on the active learning mechanism. Individuals with high engagement tend to implement independent and explorative learning processes, allowing them to fulfill client or market demands by making digital innovations to their products. This ultimately leads to more optimal active learning and helps individuals become more effective at creative problem-solving and applying interpersonal skills.

4.3. Triangulation of the Findings

This section explains the triangulation process, which is carried out by juxtaposing the findings of the quantitative and qualitative research. First, quantitative results showed an insignificant relationship between self-efficacy and a growth mindset toward active learning. Based on the transcript result in Appendix A Table A1, such as: "When he (employee) is engaged with his work, he will willingly learn and commit new knowledge related to product features or product development process. However, if they are not, they will know the information, but no new knowledge". It can be concluded that the mechanism of internal processes such as self-efficacy and growth mindset toward positive behavior such as active learning is indirect. It is shown that the switching behavior of employees is built through a positive psychological and mental state such as work engagement

before it directly affects their decision to act in the active learning process. Therefore, this finding emphasized the significant evidence of the Job Demand-Resources Theory that personal resources positively enhance work engagement and adaptive performance, as well as buffering the work stress or job demand. It also indicates that employees' personal resources in the active learning process create two different kinds of employee. The first are those with high self-efficacy and growth mindset but low work engagement. This group will become aware of, yet take no action to carry out the active learning process needed to seize new market opportunities. The second group consists of those with high self-efficacy and a growth mindset, along with high work engagement. They tend to directly take action to carry the active learning process. This emphasizes the importance of an organization maintaining their work engagement and a policy that allows optimal active learning inside the organization.

Strengthening those findings, the second mechanism among work engagement, active learning, and adaptive performance showed the missing link between work engagement and adaptive performance. The quantitative result significantly impacted work engagement toward active learning and adaptive performance. Meanwhile, the interview result revealed that employees with high work engagement would have an active learning process, resulting in new skill enhancement that allowed them to have high adaptive performance in dynamic market conditions. They are shown to have adaptive performance that is directly beneficial for product innovation; the organization needs to maintain employee work engagement and optimally facilitate employees' active learning processes.

5. Discussion

In this section, we intend to explain and discuss our findings. The result of this research shows that there are two distinct mechanisms in the relationship between growth mindset, self-efficacy, work engagement, active learning, and adaptive performance. The first is that between self-efficacy, a growth mindset, work engagement, and active learning. Along with the theories of Job Demand Resource and Job Demand-Control, personal resources such as growth mindset and self-efficacy significantly affect work engagement levels and represent the active learning of individuals (Caesens and Stinglhamber 2014; Keating and Heslin 2015). In line with the qualitative data findings, a growth mindset and self-efficacy directly increase the initiative and efforts of individuals, thereby enabling them to improve their work engagement under dynamic job-demand conditions (Del Libano et al. 2012). Enthusiasm, dedication, and higher employee focus on solving the novel problems of new job demands will encourage them to engage in active learning behavior.

Moreover, according to the quantitative data, work engagement fully mediates the relations between a growth mindset and self-efficacy. Therefore, optimizing the active learning process not only depends on individual self-regulation such as growth mindset and self-efficacy, but also on individuals' level of engagement at their workplace. Therefore, employees will explore new knowledge in adapting to advances in digital technology with the result that their active learning mechanism may produce more effective innovation in the company (Han and Stieha 2020). Therefore, employees will explore new knowledge in adapting to advances in digital technology with the result that their active learning mechanism may produce more beneficial innovation in the company (Han and Stieha 2020).

Our qualitative findings indicate that active learning behavior involves employees in knowledge sharing and results in new innovative ideas in product development. Based on the previous literature, this phenomenon is known as a knowledge combination process (Zheng et al. 2011). More specifically, active learning behavior enables knowledge exploitation and exploration beneficial for developing organizational capabilities to generate digital innovation (Dezi et al. 2019). In short, the active learning processes of each individual can create a variety of knowledge within the company, followed by digital innovation based on a combination of that knowledge (Tortora et al. 2021).

The second mechanism is the relationship developed between work engagement, active learning, and adaptive performance. Our findings emphasize the role of work engagement in enhancing employees' active learning and higher adaptive performance (Frese 2008; Fredrickson and Losada 2005). Based on the quantitative data, a partial mediation of active learning between work engagement and adaptive performance was found. Both work engagement and active learning help employees to apply more effective adaptive mechanisms in the workplace (Bakker et al. 2012; van den Heuvel et al. 2020). Our findings also indicate that interpersonal capabilities play an important role in the digital innovation process (Boeker et al. 2021), while emphasizing that the learning intervention that aligns with digital technological advancement and optimizes innovation within an organization is active learning.

The active learning process allows dynamic new knowledge accumulation on the part of employees and creates digital innovation through problem-solving processes (De Spiegelaere et al. 2015; Di Vaio et al. 2021). Our findings point out that the theory supporting the relationship between personal resources and adaptive performance using work engagement is the JD-R model. Our findings are shown to counteract the COR theory explaining the phenomenon of work engagement within an organizational change context. The model employed reveals that the indirect effect of an individual's internal processes on adaptive performance is counterbalanced by work engagement and active learning. In detail, this research underlined the role of work engagement as an intervention between individuals' internal processes such as a growth mindset toward positive behavior (i.e., active learning) and job outcomes (adaptive performance). These findings also highlighted the mechanism of a positive psychological state that leads individuals to positive behavior in the workplace, resulting in optimal adaptive performance. To produce employees with higher adaptive performance, the company needs to implement policy and facilitate employees to improve their work engagement and optimal active learning processes. Our findings also pointed out the importance of job resources as a buffering mechanism toward high job demand and allowing employees to employ more positive behavior in the workplace.

6. Conclusions

Our study found that there are two main mechanisms (i.e., behavior and learning process) in optimizing individual adaptive performance within the context of digital technology based companies. The first mechanism is through individual internal processes (i.e., growth mindset; self-efficacy) which affect the level of work engagement and the active learning processes of employees. Based on these findings, it can be concluded that the underlying mechanism as the mediator between individual internal process (i.e., self-efficacy, growth mindset) and active learning is a positive psychological state, such as work engagement. Meanwhile, the second mechanism is built upon the individual's level of engagement with their work and active learning process that manifests itself in employees' adaptive performance. These findings emphasized that personal resources optimized individual adaptive mechanisms through active learning behavior for the skill enhancement process. It also revealed the importance of new knowledge acquisition through an active learning process among employees in promoting greater digital innovation within organizations. Companies also need an active learning process as an effective and efficient learning approach for skill enhancement. This process is also pivotal to optimizing the innovation process inside the organization through employees' high adaptive performance. Therefore, the organization needs to create and maintain a policy and an organizational climate.

Moreover, we also note that sufficient learning intervention to maintain employees' adaptive performance constitutes the active learning process. According to our qualitative findings, we found an emergent phenomenon that active learning is beneficial for knowledge combination effectiveness in optimizing digital innovation within organizations. Therefore, we contribute to the significant empirical findings on the direct relations between a growth mindset and work engagement. Our research also highlights the importance of the JD-R Model within an organizational change context. However, our research includes only a com-

paratively limited number of respondents. Hence, future research should employ a broader respondent base to test the consistency of the relationships outlined in this investigation. Last but not least, our research is limited to the explanation of individual's internal processes. Future research may also explore the impact of external factors from individuals, such as job resources, organizational climate, structure, culture, and policy, that can boost individual's work engagement and facilitate an active learning behavior to increase the effectiveness and efficiency of new skill enhancement (Van Woerkom et al. 2016).

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Appendix A

Table A1. Coding Structure Result.

Significant Example Quotes	Coding	Themes
"Individuals growth mindset are very needed in our company to face the rapid advancement of digital technology. The growth mindset leads people who are enthusiastic and willing to work more with dynamic job demands and constantly changing knowledge"	Growth Mindset leads individuals to have high self-initiative and enthusiasm regarding their job demand or market (dedication)	The Mechanism between Growth-Mindset and Work Engagement
"Individuals with a growth mindset tend to have more open to knowledge and change based on the dynamic market/tech advancement. This encourages them to work more and seek solutions for new job demands or new opportunities in the market"	Growth Mindset leads individuals to be resilient to change and stay engaged with their job even though the job demand is high (vigor)	
"This growth mindset is very necessary because our product requires individuals to continue to learn new knowledge or skills, so from that, they will immediately explore in-depth even outside their working hours to be able to complete the new job demand"	Growth Mindset leads individuals to explore new knowledge or skills even though it takes more energy and time out from their working time (absorption)	
"When they have high confidence in their own capabilities, they will want to work more even with new jobs or challenges at work"	Self-Efficacy enhances individuals' work effort (dedication)	The Mechanism between Self-Efficacy and Work Engagement
"This sense of belief in one's own capabilities will give confidence that can boost new innovative ideas. This makes employees enjoy it more and more deeply to explore their work"	Self-Efficacy allows individuals to easily initiate new ideas through their confidence (absorption)	
"Self-Efficacy is very influential in doing exploration in their production process. This individual belief gives more strength to their mentality to face changes or new challenges in the workplace"	Self-Efficacy provides more mental energy to deal with split work (vigor)	
"When he (employee) is engaged with his work, he will willingly learn and commit new knowledge related to product features or product development process. But if they are not, they will just know the information but no new knowledge"	Work engagement's vigor behavior drives individuals to learn more and absorb new knowledge effectively through active learning	The Mechanism between Work Engagement and Active Learning
"Employees who are engaged with their work tend to be responsible and explore and reflect deeply on new knowledge so that they can find new innovative ideas for products"	Absorption allows individuals to explore and learn independently, reflect on their new knowledge and build new ideas	
"Employees who are engaged with their work will be enthusiastic and willing to work longer at the desk. It directs them to share knowledge with colleagues from other divisions and combine different perspectives and knowledge into one new product innovation idea"	Dedication toward their work allows individuals to have effective knowledge sharing in building new innovative ideas in products resulting from the knowledge combination process	

Table A1. *Cont.*

Significant Example Quotes	Coding	Themes
"Individuals who want to take the initiative to learn the latest new things will have new knowledge that comes from new digital technology advancements, various perspectives from their colleagues or customers. This makes him more creative in building ideas in solving new challenges or problems in the workplace"	Self-Initiative in learning and mastery of new knowledge leads individuals to solve problems more creatively	The Mechanism between Active Learning and Adaptive Performance
"In our place, people who are actively learning tend to have no problem with changes from clients or superiors, and when there are changes, they will have more creative problem solving than their learning process"	Individuals who have active learning tend to be open to change and capable of solving emergencies effectively	
"Our employees who are actively learning are used to managing their time and energy well, so they can also easily manage the existing work stress"	Individuals who like to develop themselves and actively learn tend to be able to manage work stress well	
"Basically, the production process in our company consists of combining several ideas or knowledge from different divisions, so employees who are actively learning will usually be active in exploring knowledge from their colleagues. So, usually, he does have a good enough training effort and interpersonal skills"	Individuals who have active learning will actively seek new knowledge from their colleagues so that they will have good interpersonal skills and high training effort	
"My employees who are engaged with their work are usually easy to adapt to new knowledge or changing client requests. Even so, they can still be enthusiastic, like and explore deeply so that they can perform well"	Individuals who are engaged had a better adaptive mechanism	The Mechanism between Work Engagement and Adaptive Performance

References

Acharya, Anita Shankar, Anupam Prakash, Pikee Saxena, and Aruna Nigam. 2013. Sampling: Why and how of it. *Indian Journal of Medical Specialties* 4: 330–33. [CrossRef]

Baard, Samantha K., Tara A. Rench, and Steeve W. J. Kozlowski. 2014. Performance adaptation: A theoretical integration and review. *Journal of Management* 40: 48–99. [CrossRef]

Babeľová, Zdenka Gyurak, and Augustin Stareček. 2021. Evaluation of industrial enterprises' performance by different generations of employees. *Entrepreneurship and Sustainability Issues* 9: 346. [CrossRef]

Babeľová, Zdenka Gyurak, Marta Kučerová, and Maria Homokyová. 2015. Enterprise performance and workforce performance measurements in industrial enterprises in Slovakia. *Procedia Economics and Finance* 34: 376–81. [CrossRef]

Bäckström, Izabelle, and Lars Bengtsson. 2019. A mapping study of employee innovation: Proposing a research agenda. *European Journal of Innovation Management* 22: 468–92. [CrossRef]

Bakker, Arnold B., and Despoina Xanthopoulou. 2013. Creativity and charisma among female leaders: The role of resources and work engagement. *The International Journal of Human Resource Management* 24: 2760–79. [CrossRef]

Bakker, Arnold B., and Evangelia Demerouti. 2007. The job demands-resources model: State of the art. *Journal of Managerial Psychology* 22: 309–28. [CrossRef]

Bakker, Arnold B., Evangelia Demerouti, Toon W. Taris, Wilmar B. Schaufeli, and Paul J. Schreurs. 2003. A multigroup analysis of the job demands-resources model in four home care organizations. *International Journal of Stress Management* 10: 16–38. [CrossRef]

Bakker, Arnold B., Evangelia Demerouti, and L. ten Brummelhuis Lieke. 2012. Work engagement, performance, and active learning: The role of conscientiousness. *Journal of Vocational Behavior* 80: 555–64. [CrossRef]

Bakker, Arnold B., and Jessica van Wingerden. 2021. Do personal resources and strengths use increase work engagement? The effects of a training intervention. *Journal of Occupational Health Psychology* 26: 20–30. [CrossRef]

Bandura, Albert. 2006. Guide for constructing self-efficacy scales. *Self-Efficacy Beliefs of Adolescents* 5: 307–37.

Bandura, Albert. 2012. On the functional properties of perceived self-efficacy revisited. *Journal of Management* 38: 9–44. [CrossRef]

Bell, Bradford S., and Steve W. J. Kozlowski. 2008. Active learning: Effects of core training design elements on self-regulatory processes, learning, and adaptability. *Journal of Applied Psychology* 93: 296–316. [CrossRef]

Boeker, Warren, Michael D. Howard, Sandip Basu, and Arvin Sahaym. 2021. Interpersonal relationships, digital technologies, and innovation in entrepreneurial ventures. *Journal of Business Research* 125: 495–507. [CrossRef]

Caesens, Gaetane, and Florence Stinglhamber. 2014. The relationship between perceived organizational support and work engagement: The role of self-efficacy and its outcomes. *European Review of Applied Psychology* 64: 259–67. [CrossRef]

Cangur, Sengul, and Ilker Ercan. 2015. Comparison of model fit indices used in structural equation modeling under multivariate normality. *Journal of Modern Applied Statistical Methods* 14: 152–67. [CrossRef]

Caniëls, Marjolein C. J., Judith H. Semeijn, and Irma H. M. Renders. 2018. Mind the mindset! The interaction of proactive personality, transformational leadership and growth mindset for engagement at work. *Career Development International* 23: 48–66. [CrossRef]

Charbonnier-Voirin, Audrey, and Patrice Roussel. 2012. Adaptive performance: A new scale to measure individual performance in organizations. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration* 29: 280–93. [CrossRef]

Christian, Michael S., Adela S. Garza, and Jerel E. Slaughter. 2011. Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology* 64: 89–136. [CrossRef]

De Spiegelaere, Stan, Guy Van Gyes, Hans De Witte, and Geert Van Hootegem. 2015. Job design, work engagement and innovative work behavior: A multi-level study on Karasek's learning hypothesis. *Management Revue* 26: 123–37. Available online: https://www.jstor.org/stable/24570254 (accessed on 10 April 2022). [CrossRef]

Del Libano, Mario, Susana Llorens, Marisa Salanova, and Wilmar B. Schaufeli. 2012. About the bright and dark sides of self-efficacy: Work engagement and workaholism. *The Spanish Journal of Psychology* 15: 688–701. [CrossRef] [PubMed]

Demerouti, Evangelia, Russell Cropanzano, Arnold B. Bakker, and Michael P. Leiter. 2010. From thought to action: Employee work engagement and job performance. In *Work Engagement: A Handbook of Essential Theory and Research*. East Sussex: Psychology Press, vol. 65, pp. 147–63.

Dezi, Luca, Alberto Ferraris, Armando Papa, and Demetris Vrontis. 2019. The role of external embeddedness and knowledge management as antecedents of ambidexterity and performances in Italian SMEs. *IEEE Transactions on Engineering Management* 68: 360–69. [CrossRef]

Di Vaio, Assunta, Rosa Palladino, Alberto Pezzi, and David E. Kalisz. 2021. The role of digital innovation in knowledge management systems: A systematic literature review. *Journal of Business Research* 123: 220–31. [CrossRef]

Dweck, Carol S. 2006. *Mindset: The New Psychology of Success*. New York: Random House.

Fielding, Nigel G., and Jane L. Fielding. 1986. *Linking Qualitative Data*. Linking Data: The Articulation of Qualitative and Quantitative Methods in Social Research. Beverly Hills: Sage, pp. 41–53. [CrossRef]

Fornell, Claes, and David F. Larcker. 1981. Structural equation models with unobservable variables and measurement error: Algebra and Statistics. *Journal of Marketing Research* 18: 382–88. [CrossRef]

Fredrickson, Barbara L., and Marcial F. Losada. 2005. Positive affect and the complex dynamics of human flourishing. *American Psychologist* 60: 678–86. [CrossRef]

Frese, M. 2008. The changing nature of work. In *An Introduction to Work and Organizational Psychology*. Malden: Blackwell Publishing, pp. 397–413.

Hair, Joseph F., William C. Black, Bill Black, Barry J. Babin, and Rolph E. Anderson. 2010. *Multivariate Data Analysis*, 7th ed. New Jersey: Pearson.

Hakanen, Jari J., and Gert Roodt. 2010. Using the job demands-resources model to predict engagement: Analysing a conceptual model. In *Work Engagement: A Handbook of Essential Theory and Research*. East Sussex: Psychology Press, vol. 2.

Halbesleben, Jonathon R. B. 2010. A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. In *Work Engagement: A Handbook of Essential Theory and Research*. East Sussex: Psychology Press, vol. 8, pp. 102–17.

Han, Soo Jeoung, and Vicki Stieha. 2020. Growth mindset for human resource development: A scoping review of the literature with recommended interventions. *Human Resource Development Review* 19: 309–31. [CrossRef]

Hobfoll, Stevan E., Jonathon Halbesleben, Jean-Pierre Neveu, and Mina Westman. 2018. Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior* 5: 103–28. [CrossRef]

Keating, Lauren A., and Peter A. Heslin. 2015. The potential role of mindsets in unleashing employee engagement. *Human Resource Management Review* 25: 329–41. [CrossRef]

Keith, Nina, and Christian Wolff. 2014. Encouraging active learning. In *The Wiley Blackwell Handbook of the Psychology of Training, Development, and Performance Improvement*. Hoboken: John Wiley & Sons, Ltd., pp. 92–116. [CrossRef]

Knight, Caroline, Maria Tims, Jason Gawke, and Sharon K. Parker. 2021. When do job crafting interventions work? The moderating roles of workload, intervention intensity, and participation. *Journal of Vocational Behavior* 124: 103522. [CrossRef]

Kohli, Rajiv, and Nigel P. Melville. 2019. Digital innovation: A review and synthesis. *Information Systems Journal* 29: 200–23. [CrossRef]

Koyuncu, Mustafa, Ronald J. Burke, and Lisa Fiksenbaum. 2006. Work engagement among women managers and professionals in a Turkish bank: Potential antecedents and consequences. *Equal Opportunities International* 25: 299–310. [CrossRef]

Lupșa, Daria, Delia Vîrga, Laurentiu P. Maricuțoiu, and Andrei Rusu. 2020. Increasing psychological capital: A pre-registered meta-analysis of controlled interventions. *Applied Psychology* 69: 1506–56. [CrossRef]

Melão, Nuno, and Joao Reis. 2020. Selecting talent using social networks: A mixed-methods study. *Heliyon* 6: e03723. [CrossRef] [PubMed]

Nunfam, Victor Fannam. 2021. Mixed methods study into social impacts of work-related heat stress on Ghanaian mining workers: A pragmatic research approach. *Heliyon* 7: e06918. [CrossRef] [PubMed]

Oevermann, Ulrich. 1979. Sozialisationstheorie. In *Deutsche Soziologie Seit 1945*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 143–68.

Oreg, Shaul, Maria Vakola, and Achilles Armenakis. 2011. Change recipients' reactions to organizational change: A 60-year review of quantitative studies. *The Journal of Applied Behavioral Science* 47: 461–524. [CrossRef]

Park, Yoonhee, Doo Hun Lim, Woocheol Kim, and Hana Kang. 2020. Organizational support and adaptive performance: The revolving structural relationships between job crafting, work engagement, and adaptive performance. *Sustainability* 12: 4872. [CrossRef]

Richels, Kelsey A., Eric Aanthony Day, Ashley G. Jorgensen, and Jonathan T. Huck. 2020. Keeping calm and carrying on: Relating affect spin and pulse to complex skill acquisition and adaptive performance. *Frontiers in Psychology* 11: 377. [CrossRef]

Ringle, Christian, Dirceau da Silva, and Diogenes Bido. 2015. Structural equation modeling with the SmartPLS. Available online: https://ssrn.com/abstract=2676422 (accessed on 19 April 2022).

Schaufeli, Wilmar B., and Arnold B. Bakker. 2004. Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior* 25: 293–315. [CrossRef]

Schaufeli, Wilmar B., Arnold B. Bakker, and Marisa Salanova. 2006. The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement* 66: 701–16. [CrossRef]

Simmering, Marcia J., Jason A. Colquitt, Raymond A. Noe, and Christopher O. L. H. Porter. 2003. Conscientiousness, autonomy fit, and development: A longitudinal study. *Journal of Applied Psychology* 88: 954–63. [CrossRef]

Taris, Toon W., and Wilmar B. Schaufeli. 2015. The job demands-resources model. In *The Wiley Blackwell Handbook of the Psychology of Occupational Safety and Workplace Health*. West Sussex: John Wiley & Sons, Ltd., pp. 155–80.

Taris, Toon W., Michiel A. J. Kompier, Annet H. De Lange, Wilmar B. Schaufeli, and Paul J. G. Schreurs. 2003. Learning new behaviour patterns: A longitudinal test of Karasek's active learning hypothesis among Dutch teachers. *Work & Stress* 17: 1–20. [CrossRef]

Tortora, Debora, Roberto Chierici, Massimiliano Farina Briamonte, and Riccardo Tiscini. 2021. 'I digitize so I exist'. Searching for critical capabilities affecting firms' digital innovation. *Journal of Business Research* 129: 193–204. [CrossRef]

Vakola, Maria. 2013. Multilevel readiness to organizational change: A conceptual approach. *Journal of Change Management* 13: 96–109. [CrossRef]

van den Heuvel, Matchteld, Evangelia Demerouti, Arnold B. Bakker, Jorn Hetland, and Wilmar B. Schaufeli. 2020. How do employees adapt to organizational change? The role of meaning-making and work engagement. *The Spanish Journal of Psychology* 23: e56. [CrossRef] [PubMed]

Van Wingerden, Jessica, Arnold B. Bakker, and Daantje Derks. 2017. Fostering employee well-being via a job crafting intervention. *Journal of Vocational Behavior* 100: 164–74. [CrossRef]

Van Woerkom, Marianne, Arnold B. Bakker, and Lisa H. Nishii. 2016. Accumulative job demands and support for strength use: Fine-tuning the job demands-resources model using conservation of resources theory. *Journal of Applied Psychology* 101: 141. [CrossRef]

Yvonne Feilzer, Martina. 2010. Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research* 4: 6–16. [CrossRef]

Zheng, Suli, Wei Zhang, and Jian Du. 2011. Knowledge-based dynamic capabilities and innovation in networked environments. *Journal of Knowledge Management* 15: 1035–51. [CrossRef]