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# TECHNOLOGY READINESS INDEX (TRI) AND ADAPTIVE PERFORMANCE (AP) AMONG MYSTEP EMPLOYEES: THE MEDIATING EFFECT OF WORK ENGAGEMENT (WE)

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**Abstract:**

Malaysia's Short-Term Employment Programme (MySTEP) is one of the government initiatives designed to offer short-term employment opportunities and enhancing the marketability of its citizens across various sectors. One of the goals of the MySTEP program is to help members acquire professional skills and find employment in digital fields. The transformation toward digitalization requires employees' readiness to adapt faster in performing their new tasks, which is one of the Adaptive Performances (AP) dimensions. AP can measure employees' performance in uncertain work environments and their readiness to adopt digital technology using the Technology Readiness Index measurement scale. However, an individual's tendency to utilize technology in this era depends on their work engagement level. Therefore, this study examines the relationship between the Technology Readiness Index (TRI), Work Engagement (WE), and AP among MySTEP employees in Malaysia. 297 out of 331 questionnaires were collected online and assisted by the branch manager in each region. The data was analysed using PLS-SEM. Results reveals a significant relationship between the TRI and AP. The four variables of TRI influence AP among MySTEP employees. The study confirmed that TRI generally could influence WE. The study also confirmed the mediating effect of WE on the relationship between TRI and AP. These

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findings can drive organizations to provide more exposure to technological advancement within their organization.

**Keywords:**

Technology Readiness Index, Work Engagement, Adaptive Performance, PLS-SEM

## Introduction

The Malaysian government has introduced a series of initiatives to encourage digitalization among companies, including the MySTEP program. Malaysian Minister of Human Resources, V. Sivakumar (2023) states that if training and skill improvement are not executed, 4.5 million Malaysians will probably lose their jobs by 2030. In this regard, Malaysia's Short-Term Employment Programme (MySTEP) is one of the government initiatives designed to offer short-term employment opportunities (contracts), providing work experience and enhancing the marketability of its citizens across various Ministries, Government Agencies, Government Linked Companies, Government Linked Investment Companies, and Strategic Partners.

One of the goals of the MySTEP program is to help members concentrate on acquiring professional skills, gaining digital skills, and finding employment, including in the fields of digital marketing, data analytics, software engineering, and more. For instance, 28 initiatives teamed with 237 local tech companies, such as network providers, e-commerce platforms, and technological service providers, and offered discounts to encourage SME digitalization. Programs run by the government will establish the benchmarks and support businesses in expediting their shift away from online media. As a result, following the MySTEP program, members can optimize their use of technology and make meaningful adjustments to their schedules. The well-engaged workers will be hired permanently in MySTEP or will be promoted to work with other established SME companies.

The biggest challenge for SMEs to cope with digitalization is the level of employee readiness and their knowledge, skills, and ability to adapt fast to technological advancement (Kane, 2019). Technology advancement deals with dynamic changes in the workplace and simultaneously has to improve their employee's performance (Rozak et al., 2023). Hence, digitalization challenges in organizations impact each employee's performance. However, there is a limited study found in technology readiness studies that examine individual and personal factors on technology readiness, especially individual technology readiness level (Bagiran, 2022).

Mixed findings were found on the impact of technology utilization on the organizational level (Teng et al., 2022) based on different types of organizations, which most of the studies conducted among IT organizations and heavy industries (Alyoubi et al., 2019). Technology readiness measures employees' readiness towards utilizing technology (Parasuraman & Colby, 2015), comprising four components: optimism, innovativeness, discomfort, and insecurity. It falls into motivators (hopefulness, inventiveness) and inhibitors (uncertainty, discomfort). Motivator aspects encourage people to feel more creative and upbeat in the face of technology. In the meantime, feelings of discomfort and insecurity when utilizing technology are inhibitory dimensions (Alyoubi et al., 2019). Numerous approved theories, including TAT, UTAUT, and SET, have supported this framework in earlier studies. However, because the relationship

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between TRI and AP depends on resources, the underpinning theory to support the whole framework is based on the Conservation of Resources (COR) which includes condition, energy, and personal characteristics.

Although COR theory holds the potential for studying employee adaptation to change, not many studies have done so (Van et al.,2020). The principles of COR theory seem conducive to being applied to any organizational setting in any uncertainty. In the current study, we focus on how a valued and limited energy employee resource, work engagement, can be protected and may be related to subsequent adaptive performance. Therefore, the relationship between TRI and AP and the mediating effect of WE will be investigated in this study using the COR theory.

The current study examines the factors influencing adaptive performance among MySTEP employees in SMEs. By reviewing previous research and the findings of recent studies, the researcher contributed to the body of research on adaptive performance. The researchers combined several variables, specifically the Technology Readiness Index and its four variables. Therefore, these components are believed to influence adaptive performance in the context of MySTEP employees in SMEs, based on one underpinning theory of Conservation of Resources (COR) that supports all the variables and their influence on adaptive performance through the mediating role of work engagement. This study examines the mediating role of work engagement about the variables under the Technology Readiness Index. Furthermore, the current research model contributes to existing literature knowledge with the help of the Conservation of Resources (COR) theory.

This study seeks to answer thirteen hypotheses as follows:

H1: There is a significant relationship between TRI (Optimism) and AP
H2: There is a significant relationship between TRI (Innovativeness) and AP
H3: There is a significant relationship between TRI (Discomfort) and AP
H4: There is a significant relationship between TRI (Insecurity) and AP
H5: There is a significant relationship between TRI (Optimism) and WE
H6: There is a significant relationship between TRI (Innovativeness) and WE
H7: There is a significant relationship between TRI (Discomfort) and WE
H8: There is a significant relationship between TRI (Insecurity) and WE
H9: There is a significant relationship between WE and AP
H10: Work engagement mediates the relationship between TRI (Optimism) and AP
H11: Work engagement mediates the relationship between TRI (Innovativeness) and AP
H12: Work engagement mediates the relationship between TRI (Discomfort) and AP
H13: Work engagement mediates the relationship between the TRI (Insecurity) and AP

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## Literature Review

This study uses a dependent variable called Adaptive Performance (AP), a mediating variable called Work Engagement (WE), and independent variables categorized under the Technology Readiness Index (TRI).

### *Adaptive Performance*

Individual's adaptive performance refers to an individual's capacity for adaptation to dynamic work situations (Pulakos et al., 2000). More recently, changes in the environment and their effects on the nature of work (e.g., teamwork, project management, empowerment practices, and customer-oriented practices) have resulted in models that include adaptive performance (Silva et al., 2020). Hence, it become among the prominent behaviours underlined as necessary for an organization to function effectively (Bieńkowska & Tworek, 2020).

The shift towards digitalization dictates that workers be prepared to adapt to their new work environment. Employee technology readiness refers to their willingness to use new technology to achieve personal and professional goals (Abdul, 2022). The success of such initiatives is highly dependent on employees' attitudinal and behavioural adaptation (Kim et al., 2022). In addition, employees' success in adapting to digital technology in business dealings can be measured through adaptive performance (Park & Park, 2019). It means employees with adaptive performance can solve problems creatively, manage volatile situations, handle pressure effectively, and adapt fast to technological advancement (Kane, 2019). This is similar to the finding by Abdul (2022), that adaptive performance can be enhanced when employees are ready to utilize digital technology or technology readiness.

Studies of adaptive performance in Malaysia have been conducted as comprehensively as possible by several respective researchers. To be precise, several academicians and field experts (e.g., Iskandar & Burhan, 2018; Nawawi & Halim, 2013; Shahidan et al., 2021) have acknowledged the significance of identifying its predicting factors based on specific context. Thus, by considering some factors like adaptive performance as a separate dimension of individual work performance, the development of its construct, and its application that has gained attention from local scholars, it is worth the effort for current researchers to validate the multidimensional scale of adaptive performance usage in Malaysia, specifically among employees in SMEs.

### *Technology Readiness Index*

Parasuraman and Colby (2015) define technology readiness as people's propensity to embrace and use new technologies to accomplish their goals at home and in the workplace. The Technology Acceptance Model gives attention to individual-level factors, focusing on perception as the basis for deciding the adoption of information technology. Readiness can also be measured using the Technology Readiness Index (TRI) developed by Parasuraman and Colby (2015). In their view, technology readiness comprises four dimensions: optimism, innovativeness, discomfort, and insecurity. Optimism and innovativeness contribute positively to technology readiness. At the same time, discomfort and insecurity inhibit technology readiness, and individuals can simultaneously express positive and negative feelings toward technology. Regardless of the mechanism used for its measurement, readiness in digital technologies would be an important element that drives a digital transformation based on two

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key factors: the availability of the technology and the ability of individuals to use it for improved performance. A high score on these dimensions will increase overall technology readiness.

***Optimism***

Optimism is a central concept in positive psychology that focuses on people's expectations about the results of their future events. Another researcher defined optimism as a positive view of technology and a belief that offers people increased control, flexibility, and efficiency (Parasuraman, 2000). It captures positive feelings about technology. In the medical field, optimism has been proven to have a beneficial effect on clinical health outcomes. Optimism contributes significantly to the mental health of adolescents, functioning as a predictor of good mental health, a buffer against the impact of stress, and a protector against pathological symptoms and risk behaviours. Lack of optimism could relate to higher rates of clinical depression, which is ultimately related to poorer cardiovascular health (Craig et al., 2021). A strong level of optimism to increase Information Technology (IT) knowledge and skills is a promising foundation for human thriving in this global-digitalisation era (Mykhailenko et al., 2022). Additionally, technology optimism can impact people's attitudes remarkably (Jeng et al., 2022). People ready to explore new technologies are more willing to accept the Internet of Things (Tun et al., 2021). New technologies rarely seem complicated or beyond the understanding of technology pioneers. Moreover, users who are denied the opportunity to experiment with new technologies will likely regret it later (Almaiah et al., 2022). Optimism towards IT at work is well-aligned with general technology acceptance by Dwivedi et al. (2017) and increasing levels of human-machine interdependence in digitalized work environments (Blayone & Van Oostveen, 2020). Therefore, it is important to study the level of optimism towards technology among this group of employees in SMEs.

***Innovativeness***

Innovativeness is a multistage process in which operators convert ideas into new products, services, or processes to differentiate themselves from other market competitors (Demary, 2017). However, a second definition of innovativeness views the concept as a basic personality dimension relevant to the analysis of organizational change (Kirton, 1976). Kirton proposed that everyone can be positioned on a continuum ranging from an ability 'to do things better' to an ability 'to do things differently.' The ends of the continuum are labelled adaptive and innovative, respectively" (Kirton 1976). Innovativeness is an important strategic orientation for firms to achieve long-term success and significantly affects venture performance (Lintukangas et al., 2019). Research by Mack & Landau (2018) suggested that innovativeness is the initiation process of innovation, representing the notion of openness to new ideas. Research by Domi et al. (2019) found the effects of innovation and innovativeness on the performance of tourism SMEs. Innovativeness significantly affects innovative behaviour. While innovativeness does not directly affect SMEs' performance, its significant effects are indirect, as it is mediated by innovative behaviour. Data from 211 valid cases have been gathered from Albanian tourism SMEs using face- to-face techniques to investigate innovative behaviour. The results indicate that the more tourism SMEs innovate in terms of IT cooperation (associations, networks), the more their performance will positively increase.

***Discomfort***

In regards to the use of technology, it is important to understand the physical and emotional comfort of users. Technology discomfort (TD) is defined as experiencing a lack of control over

International Journal of Entrepreneurship and Management Practices
IJEMP
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technology and feeling overwhelmed by it (Parasuraman, 2000). While another researcher found that technology discomfort refers to a fear of using technology that might affect usage and behaviour Jeng et al. (2022). It is the feeling of hesitation, fear, or unwanted risk when trying something new (Blut & Wang, 2020). The complexity of using a new system, such as a mobile payment system, could result in discomfort for the consumer and affect his/her usage of the system (Upadhyay & Chattopadhyay, 2015). The diffusion of innovation means that people now come across new technologies every day. However, the factors that create reluctance to embrace innovative technologies have received little attention (Chen et al., 2022). Understanding TD will give practitioners and researchers new insights into how TD impacts technology usage.

***Insecurity***

Insecurity regarding technology is the uncertainty related to security and privacy or a lack of trust. Individuals tend to avoid using technology because of the fear and distrust of unknown circumstances. Insecurity arises from the need for assurance that the product or service will function as expected. However, feelings of insecurity are peculiar to the individual's behavioural disposition towards technology (Wiese & Humbani, 2020). However, when people eventually believe they will benefit from using new technologies and be willing to take the risk of using them. Consequently, people also believe that technology lowers the quality of relationships by reducing personal interaction. For example, research by Koo et al. (2021) found that AI-related revolution and concerns related to replacing human jobs could evoke employees' perception of job insecurity. Job insecurity is the primary stressor for current employees during this environmental change by AI. This stress is related to the number of positions available for a particular job title and the continuance of the position itself (Nam, 2019). In this vein, AI enables businesses in various fields to provide their customers with unique experiences.

***Work Engagement***

Work engagement reflects how serious a person's involvement in carrying out the tasks that he or she needs to fulfil, and this is closely related to job performance (Bakker & Oerlemans, 2019). Work engagement also refers to an employee's relationship with the work he or she does at the individual level, while employee engagement is about the relationship between the employees and their organization (Tisu et al., 2020). Even though they use different terms to conceptualize the engagement meaning, the core concept of engagement is still the same as it involves how energetic, enthusiastic, and emotionally attached an individual is to his or her work toward completing the task given (Bakker & Demerouti, 2008). Thus, this study adopts the term WE used by Schaufeli et al. (2002) since it can straightforwardly explain the concept concerning work tasks. The most widespread and commonly used definition of work engagement would be a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002). Vigour refers to "a high level of energy, an exhibition of mental resilience and high investment of effort" while working dedication refers to "feeling strongly involved in one's work and experiencing a sense of prioritization as well as enthusiasm. On the other hand, absorption refers to "being fully concentrated, easily engaged, and happily engrossed in one's work" (Schaufeli et al., 2002). Thus, to assess the level of WE, each individual must have these three main criteria. In other words, measuring a single or two dimensions of WE would not represent the meaning of WE as a whole.

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## Theoretical Framework

Figure 1 classifies the mediating effect of WE with TRI and AP among MySTEP employees. This framework is designed based on three main aspects that have been carefully reviewed. The first one involves independent variables, namely the TRI, which consists of four variables: Optimism, Innovativeness, Discomfort, and Insecurity. Another aspect involves a mediating variable, namely WE. The last aspect is AP, a dependent variable.

## Methodology

This study uses a quantitative method to examine possible causes and effects of behaviour and attitude (Mohajan, 2020). The research framework was developed to investigate the links between TRI, WE and AP. In this framework, TRI is viewed as independent variable; WE as mediator; and AP is the is the dependent variable. As for data collection techniques, the current study will use a set of questionnaires and statistical analysis. A cross-sectional strategy will be applied to determine the respondents' insights.

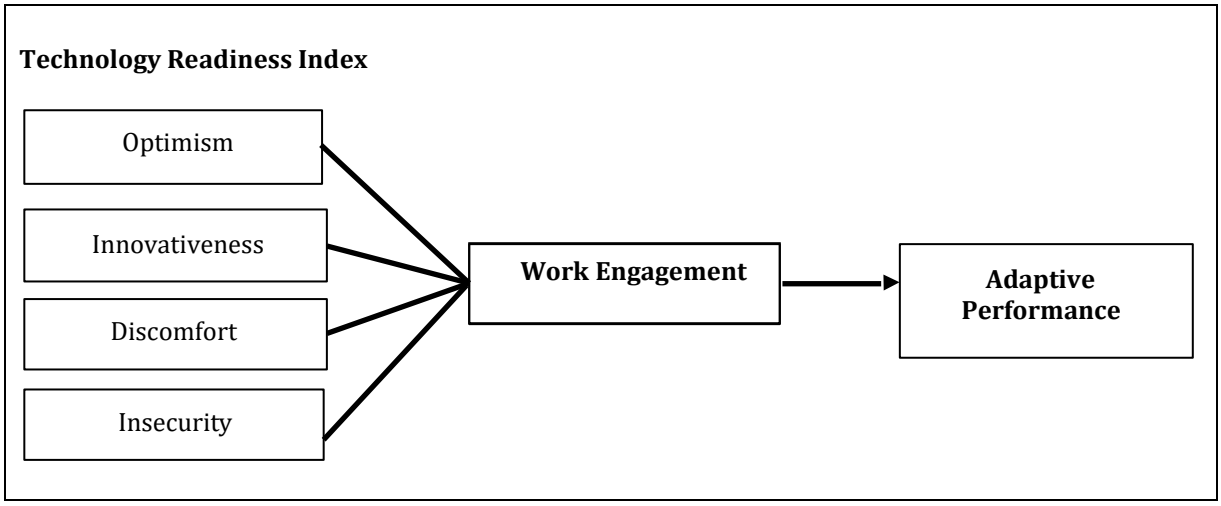


**Figure 1: Research Framework**

### *Population and Sampling Technique*

The target population of this study is the Malaysian MySTEP employees. MySTEP employees are categorized as technology adopters in who have to deal with uncertain work situations that are constantly changing. They must learn new tasks, manage work-related stress, and keep up with evolving technologies and procedures. Based on all these factors, they are regarded as the most appropriate respondents for studying individuals' adaptive performance concerning their technology readiness in SMEs. Exclusion will be imposed on employees from computer science backgrounds who are already recognized as being technology-ready.

### *Sample Size*

There are 2,546 participants have been successfully placed in SMEs through the MySTEP program, and several criteria have been carefully considered when taking them as respondents. Firstly, the samples are considered acceptable because of the nature of SME employees' jobs, which directly involve learning new tasks and work stress. Hence, it fits the concept of adaptive performance itself. Secondly, every single employee is a key person responsible for receiving changes in digitalization. This differs from other professions such as army, coach, and farmers. Thirdly, according to the former Malaysia Minister of Science and Technology, Malaysia is

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IJEMP
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Volume 8 Issue 29 (March 2025) PP. 432-451
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critically lacking technologically advanced employees to stay competitive with other countries. Selecting appropriate samples from the targeted population is important to ensure consistency and reliability of results in the study (Stratton, 2021). Hence, based on a table of determining sample sizes designed by Krejcie & Morgan (1970), the valid sample size for this current study's population has been calculated to be 331. MySTEP employees are 2546 placement ministries, SMEs, and strategic partners. However, only 331 are under Britay Asia Sdn Bhd, which is the placement in SMEs. The reason for choosing Britay Asia Sdn Bhd is that they provide on-the-job training in SMEs, which is very suitable for measuring technology readiness among employees since 80% of SMEs in Malaysia use social media platforms as their main platform for making a profit. Accordingly, nearly one-third (32.5%) of graduates of MySTEP personnel who graduated in 2019 reported MySTEP as their first job after graduation.

***Sampling Technique***

This study proposes using a cluster probability sampling technique. Thus, the total number of 2546 MySTEP employees chosen represents the whole population and was selected as the sample for this study. This aligns with Mweshi & Sakyi (2020) recommendation that the cluster probability sampling technique is the best way to denote the sample when the study's population is scattered and separated geographically. This technique is more cost and time-efficient than simple random sampling. In addition, when a researcher uses this technique, separated clusters will be created by dividing the total units in a frame, in which each cluster should represent the study population. Once the researcher has made the decision on choosing the most suitable area cluster for the study, a multi-stage proportionate sampling technique will be performed. For the first stage, the researcher selected Malaysia as the targeted population and then segregated the regions respectively. Next, out of all MyStep employees available, a certain number of respondents is determined to represent the whole population for this study.

***Instrument Development***

A structured questionnaire will be used as the main research instrument for this study. Using a questionnaire to elicit data offers several advantages over other types of instruments. First, it enables the researcher to collect more data from respondents efficiently. Secondly, researchers can efficiently collect data from different cities or areas. Next, it is cost-effective, requires less time and effort, and enables easy analysis (Birmingham & Wilkinson, 2003). Moreover, answers from respondents can be obtained in a standardised form (Hair, 2007; Sekaran, 2006).

The questionnaire will consist of two main components. The first section comprises demographic information about the respondents of this study (MySTEP employees), while the second section contains questions derived from all of the variables involved in this study with the measurement by Likert-type scale items. The Likert Scale is designed to investigate to what extent the respondents agree or disagree with the mentioned statement (Lionello et al., 2021). Additionally, the instrument will be divided into three main variables with several dimensions: AP (dependent variable), TRI (independent variable), and WE (mediating variable).

***Dependent Variable***

The AP scale of measurement for this current study is adopted from eight items developed by Pulakos et al. (2000) through the Job Adaptability Inventory. Next, 15 more items are adapted from a previous study by Shahidan et al. (2021) to assess all dimensions of adaptive

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performance. However, after three experts performed content validity test, amendments were made to some of the items which are found to be double-barrelled questions.

### *Independent Variables*

The independent variable for this study is the TRI. The TRI was adopted from Parasuraman & Colby (2014), which covers four dimensions and contains 16 items altogether.

### *Mediating Variable*

To investigate the mediating effect of WE, this study proposes using the Utrecht Work Engagement Scale (UWES) developed by Schaufeli et al. (2002). It contains 17 items, which comprise three dimensions: vigour, dedication, and absorption. The internal consistency (reliability) for these three work engagement dimensions has been successfully reported in past studies by Abdul (2013) with the acceptable Cronbach's alpha value ranging from 0.911 for vigor, 0.812 for dedication, and 0.845 for absorption.

### *Response Format*

A multiple-item Likert scale is used in this current study because it is an appropriate interval scale that measures behavioural variables (Lionello et al., 2021). Prado-Gascó et al. (2020) also indicated that the multiple-item scale increases the reliability and validity of the qualities tested. Since a seven-point Likert scale is the most preferred method of scaling in social science and behavioural sciences research (Mumu et al., 2022), it is used in this study based on the degrees as follows: "(1 = Strongly Disagree; 2 = Disagree; 3 = Somewhat Disagree; 4 = Either Agree or Disagree (Neutral); 5 = Somewhat Agree; 6 = Agree; 7 = Strongly Agree)".

### *Questionnaire Design*

The questionnaire comprises four parts each part contains descriptions of different items or variables to be tested in this study. The description of the four parts is presented in Table 1:

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IJEMP
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**Table 1: Questionnaire Design**

| PART | DESCRIPTION |
|---|---|
| A | Demographic profile of respondents regarding gender, age, education level, duration of service, marital status, and department. |
| B | Consists of questions measuring dependent variables, which is adaptive performance. |
| C | Consists of questions measuring the independent variable of Technology Readiness Index which contains four variables namely; optimism, innovativeness, discomfort and insecurity. |
| D | Consists of questions measuring work engagement. |

***Data Collection Procedures***

This study uses a set of questionnaires that had been approved and later transformed into an online questionnaire via Google Forms. It will be distributed to the SME employees working at Britay Asia Sdn Bhd. Each questionnaire is attached with a cover letter explaining the purpose of the study and the confidentiality of the data contributed by respondents.

***Statistical Analysis Procedures***

Data received from respondents will be coded into Statistical Package for the Social Science (SPSS). These data will be examined through preliminary analysis to ensure a valid and reliable representation of the situations investigated for this study. Then, the data will be loaded into Structural Equation Modelling using Partial Least Squares (SEM-PLS). SEM is appropriate for examining multiple-relationship effects such as direct and indirect effects, when using mediation (Resampling Bootstrapping technique). SEM is the most accepted and recognized technique in management and social sciences research (Henseler et al., 2009; Hair et al., 2014; Hair et al., 2016).

## Results and Discussion

***Response Rate***

Overall, a total of 331 questionnaire was returned by MySTEP employees. The survey produced 279 valid copies, representing an 84.29% valid response rate, which is considered adequate for analysis.According to Hair et al., (2010), the present response rate is sufficient because the tool of analysis for the current study is PLS-SEM, which requires a minimum of 30 participants (Hair et al., 2017).

***Data Screening and Preliminary Analysis***

Before initial data screening, all 279 valid questionnaires were coded into SPSS. Initial data screening is crucial in any multivariate analysis because it helps to identify any possible violations of theassumptions of multivariate data analysis techniques (Hair et al., 2017). The following preliminary data analyses were performed: (1) missing value analysis, (2) assessment of outliers, (3) common method variance, (4) normality test, and (5) multicollinearity test (Hair, Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007).

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### *Normality Test*

Skewness and kurtosis statistics were computed to ensure that normality assumption is not violated in the present study. Kline (2011) suggested that the key normality assumption is violated when the skewness exceeds ±3 and kurtosis exceeds ±10. The key condition for normality has been met in this study where the normal distribution of the dataset has skewness and kurtosis statistics between -1 to 1 (Hair et al., 2017).

### *Assessment of Measurement Model*

The present study appraised individual item reliability, internal consistency reliability, discriminant validity, and convergent validity (Hair et al., 2017). Hair et al. (2014, 2017) state that satisfactory construct reliability is attained when the composite reliability index is 0.70 or higher. The composite reliability index values in this study range from 0.732 to 0.958. Hair et al., (2017) stated that when the AVE value of 0.50 is achieved in any construct, researchers may retain items with loadings less than 0.7. The present study retained items with loadings greater than 0.50 since all the AVE values are greater than 0.50 (Figure 2).

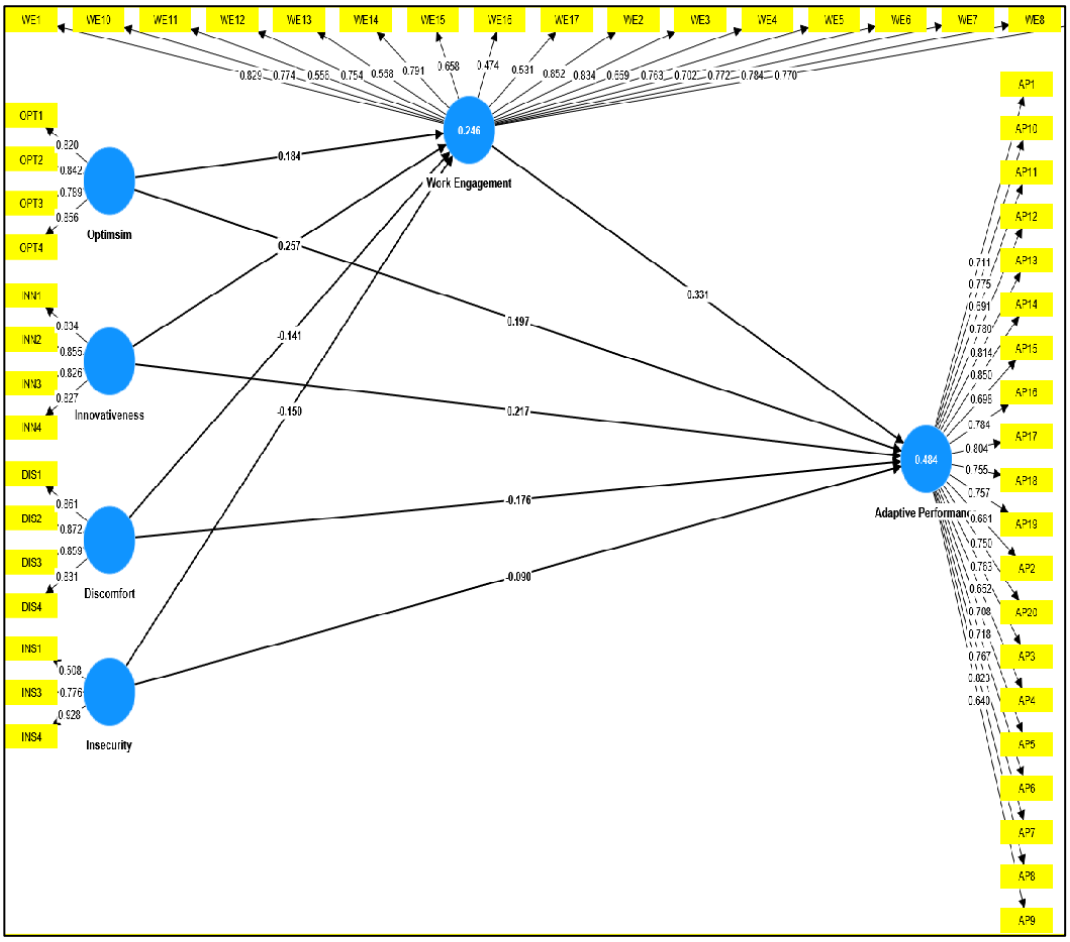


**Figure 2: Measurement Graph Model**

### *Construct Reliability*

The CR coefficient and Cronbach's alpha were used to determine the internal consistency reliability of the constructs. According to Hair et al. (2010) and Hair et al. (2014), satisfactory construct reliability is established when the composite reliability index is 0.70 or higher.

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Composite reliability indices of all latent constructs in this study met this condition. This suggests that satisfactory construct validity has been achieved. Also, the Cronbach's alpha for adaptive performance, optimism, innovativeness, discomfort, insecurity, and work engagement is 0.958, 0.846, 0.858, 0.882, 0.739, and 0.940, respectively, indicating satisfactory Cronbach's alpha values.

***Structural Model***

Drawing from PLS-SEM literature, the structural model was evaluated based on the following criteria: the significance of the structural path coefficients, coefficient of determination ($R^2$), the effect size ($f^2$), and the predictive relevance of the model ($Q^2$). Following Hair et al. (2017) recommendations, a bootstrapping procedure with 5000 bootstrap samples and 279 cases was used to evaluate the significance of the path coefficients to generate beta values, standard errors, t-values, and p-values of the estimate to determine the precision of the PLS model. Also, to evaluate the fit of the present model, Henseler et al. (2015) recommended the fit index standardized root mean square residual (SRMR). The SRMR is an absolute measure of fit. It is defined as the standardized difference between the observed correlation and the predicted correlation. An SRMR value below 0.08 indicates that a PLS path model provides a sufficient fit. In contrast, the zero value of SRMR suggests a perfect model fit. Consequently, the present study evaluated the model's fit by computing standardized root mean square residual (SRMR). The model generated SRMR values of 0.05. According to Henseler, Hubona, and Ray (2016), the SRMR value obtained is within acceptable standards, which is less than 0.08. Therefore, the present model has adequate model fit. Further, to test the relationships of the structural model, the significance level is set at $p<0.01$, and $p<0.05$ (1-tailed) (Hair et al., 2010) (Figure 3).

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Volume 8 Issue 29 (March 2025) PP. 432-451
DOI: 10.35631/IJEMP.829029

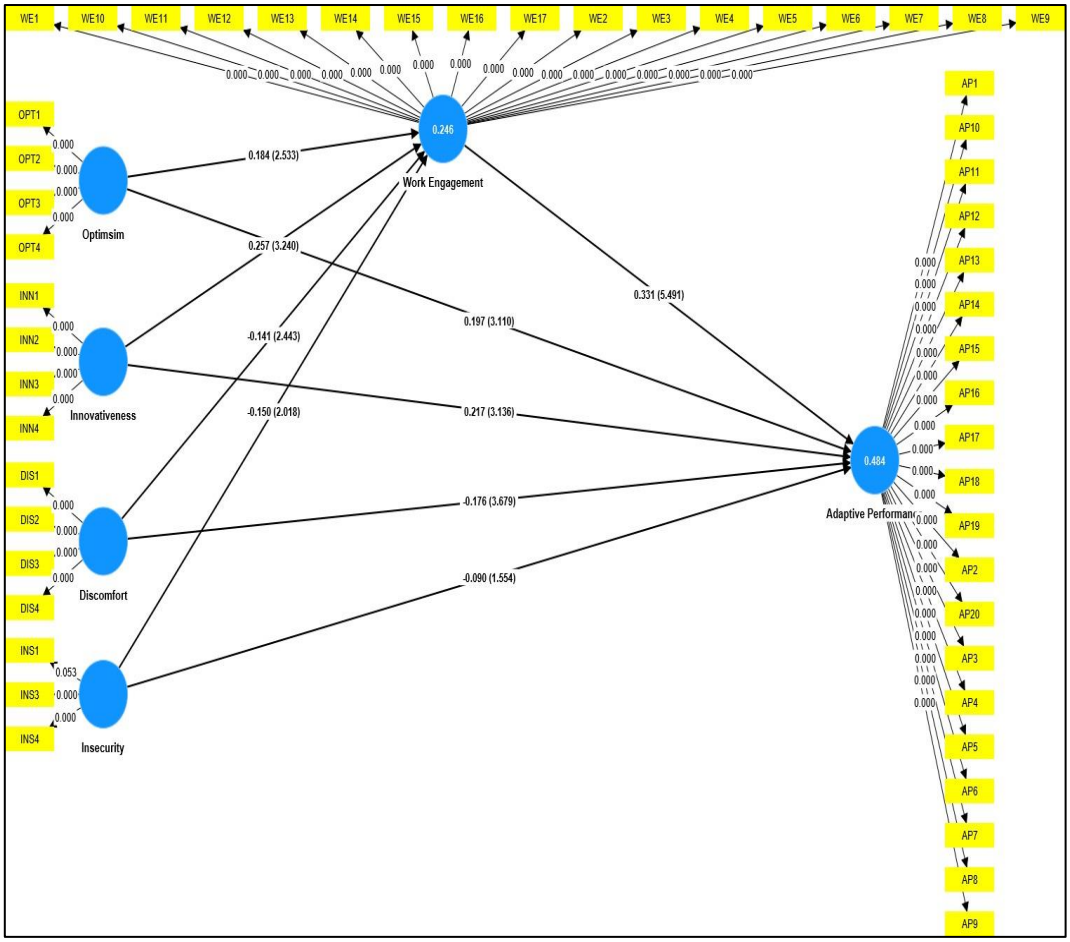


**Figure 3: Structural Model Graph**

***Direct Effects***

Table 2 illustrates the relationship between TRI, WE and AP, optimism has a significant and positive relationship with AP (β = 0.197.; t=3.110; p < 0.01). Statistically, H1 was supported. H2 hypothesized that innovativeness is positively related to AP. Thus, the results support H2 (β = 0.217; t=3.136; p <0.01). In addition, discomfort reports a negative relationship with AP (β = -0.176; t=3.679; p< 0.01). Hence H3 was supported. Similarly, the negative relationship between insecurityand adaptive performance was statistically insignificant (β = -0.090; t=1.554; p>0.01). Thus, H4 is not supported. H5 has significant relationship between optimism and work engagement (β = 0.184; t=2.533; p<0.01). Meanwhile, H6 has a positive correlation between innovativeness and WE as the statistics support (β = 0.257; t=3.240; p < 0.01). Furthermore, the proposed negative relationship between discomfort and insecurity and WE was supported (β =-0.141; t=3.679; p<0.01), supporting H7. H8 shows a negative correlation between innovativeness and WE (β = -0.150; t=2.018; p < 0.05). The relationship between WE and AP found significant positive relationship (β = 0.331; t=5.491;p<0.01), supporting H13.

International Journal of Entrepreneurship and Management Practices
IJEMP
EISSN : 2600-8750
Volume 8 Issue 29 (March 2025) PP. 432-451
DOI: 10.35631/IJEMP.829029

**Table 2: Hypotheses of the Direct Effects**

| Title | Relationships | Std.Beta | Std.Dev | t-value | p-value | Confidence Intervals | | Decisions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | LCL | UCL | |
| **HI** | OPT->AP | 0.197 | 0.063 | 3.110 | 0.000*** | 0.174 | 0.420 | Supported |
| **H2** | INN->AP | 0.217 | 0.069 | 3.136 | 0.000*** | 0.203 | 0.464 | Supported |
| **H3** | DIS->AP | -0.176 | 0.048 | 3.679 | 0.000*** | 0.247 | 0.156 | Supported |
| **H4** | INS->AP | -0.090 | 0.058 | 1.554 | 0.060 | -0.196 | 0.201 | Not supported |
| **H5** | OPT>WE | 0.184 | 0.073 | 2.533 | 0.006*** | 0.093 | 0.348 | Supported |
| **H6** | INN>WE | 0.257 | 0.079 | 3.240 | 0.001*** | 0.160 | 0.432 | Supported |
| **H7** | DIS->WE | -0.141 | 0.048 | 3.679 | 0.000*** | 0.156 | 0.174 | Supported |
| **H8** | INS->WE | -0.150 | 0.075 | 2.018 | 0.022** | 0.268 | 0.021 | Supported |
| **H13** | WE->AP | 0.331 | 0.060 | 5.491 | 0.000*** | 0.511 | 0.679 | Supported |

Note: *** Significant at 1%, ** Significant at 5%
OPT – Optimism, AP – Adaptive Performance, WE – Work Engagement, INN –Innovativeness, DIS – Discomfort, INS – Insecurity

### *Mediating Effects*

To test the significance of the mediation effects, the researcher has employed the bias-corrected bootstrap confidence interval as recommended by (Hayes and Scharkow 2013). According to Hair et al. (2013), bootstrapping the sampling distribution for detecting mediating effects is the most straightforward approach researchers can follow. Moreover, researchers have also claimed that using T-values and p-values is insufficient when reporting the significance of the structural model relationships. When performing the bootstrapping test, the confidence intervals bias-corrected upper and lower bound results should be out of 0 points (Hair et al., 2016). Hence, following these steps, a bootstrapping procedure with a sample of 5000 cases was run to evaluate the significance of the path coefficients (Hair et al., 2014; Hair et al., 2011; Hair et al., 2012; Henseler et al., 2009). It is important to note that the whole model, including all the variables of interest, was run all at once to establish the results of the structural paths in alignment with the objectives of this study. The results for the indirect effect are displayed in Table 3.

International Journal of Entrepreneurship and Management Practices
IJEMP
EISSN : 2600-8750
Volume 8 Issue 29 (March 2025) PP. 432-451
DOI: 10.35631/IJEMP.829029

**Table 3: Results of the Mediating Effect**

| Hypothesized Path | Path Coefficient | Standard Error | T Value | P-Value | Decision |
|---|---|---|---|---|---|
| Innovativeness-> WE->AP | 0.085 | 0.034 | 2.522 | 0.006*** | Accepted |
| Discomfort-> WE->AP | -0.047 | 0.021 | 2.232 | 0.013** | Accepted |
| Optimism-> WE->AP | 0.061 | 0.028 | 2.206 | 0.014** | Accepted |
| Insecurity-> WE->AP | -0.050 | 0.023 | 2.136 | 0.017** | Accepted |

Note: *** Significant at 1%, ** Significant at 5%

The result indicates that WE mediates the relation between Innovativeness and AP (β = 0.085, T-statistics = 2.522, p-value < 0.01), therefore H9 is supported. H10 found that WE mediates the relation between Discomfort and AP (β = -0.047, T-statistics = 2.232, p-value < 0.05). The result shows that WE mediates the relation between Optimism and AP (β = 0.061, T- statistics = 2.206, p-value < 0.05). Finally, WE mediates the relationship between Insecurity and AP (β = -0.050, T-statistics = 2.136, p-value < 0.05).

Summary of hypotheses testing is illustrated in Table 4.

**Table 4: Summary of Hypotheses Testing**

| HYPOTHESES | RELATIONSHIPS | DECISION |
|---|---|---|
| **H1** | Optimism and AP | Supported |
| **H2** | Innovativeness and AP | Supported |
| **H3** | Discomfort and AP | Supported |
| **H4** | Insecurity and AP | Not Supported |
| **H5** | Optimism and WE | Supported |
| **H6** | Innovativeness and WE | Supported |
| **H7** | Discomfort and WE | Supported |
| **H8** | Insecurity and WE | Supported |
| **H9** | WE mediates the relationship between optimism and AP | Mediated |
| **H10** | WE mediates the relationship between innovativeness and AP | Mediated |
| **H11** | WE mediates the relationship between discomfort and AP | Mediated |
| **H12** | WE mediates the relationship between insecurity and AP | Mediated |
| **H13** | WE and AP | Supported |

International Journal of Entrepreneurship and Management Practices
IJEMP
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## Conclusion

This study has provided empirical support in achieving the research gap in many ways. All the independent variables were found to influence the dependent and mediating variables significantly. Similarly, the mediator significantly influenced the relationship between the independent variables and the dependent variable.

This study has empirically proved a significant relationship between the TRI and AP. The four variables of the TRI influence the AP among MySTEP employees. The study confirmed that TRI generally could influence WE. Also, the study lends empirical support to the relationship between WE and AP. Finally, the study confirmed the mediating effect of WE on the relationship between TRI and AP.

Regarding the hypothesis formulated and tested, 13 hypotheses were formulated. The hypotheses were subjected to statistical tests through PLS-SEM, and 12 out of the 13 hypotheses were supported. This includes H1, H2, H3, H5, H6, H7, H8, H9. H10, H11, H12 and H13.

This study employed a quantitative approach, cross-sectional design, and questionnaire technique to obtain data from MySTEP employees. The questions in the questionnaire were close-ended and had a 7-point Likert scale. The data obtained were analyzed using SPSS and PLS-SEM. SPSS was used for data capturing and screening whilst PLS-SEM was used for validity and reliability tests through a measurement model. At the same time, the relationships between the construct and hypotheses testing were determined through bootstrapping.

The statistical results of this study indicate that three variables of the TRI (OPT, INN, and DIS) were related to AP. This implies that Optimism, Innovativeness, and Discomfort could influence the AP of MySTEP employees. Furthermore, the study revealed that TRI was related to WE. Regarding TRI, all variables (OPT, INN, DIS, and INS) were found in WE. The statistical results also support the relationship between WE and AP and the mediating effect of WE on the relationships between TRI and AP.

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