




Article

The Mediating Role of Attitudes towards Performing Well between Ethical Leadership, Technological Innovation, and Innovative Performance

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Abstract: The business sector is rife with unethical managerial practices, such as blaming subordinates for organizational failings, along with the exploitation of colleagues, favoritism, and conflicts of leadership. In light of this, numerous researchers have endeavored to explain the phenomenon of ethical perspectives and concerns. It is recommended that organizations in the SME sector adopt ethical practices in order to achieve their long-term objectives. This study stresses the influence of ethical leadership and technological innovation, particularly the mediating role of a positive attitude in encouraging good performance. This study, which was conducted in the SME sector of Malaysia in the state of Selangor, employed a convenience sampling technique for data collection and reports that ethical leadership, technological innovation, and attitude significantly influence performance. A mediating role of attitude in relation to technological innovation and innovative performance is hereby reported, and attitude towards performance was found to have an insignificant effect on ethical leadership and innovative performance. This study contributes to the existing body of knowledge by explaining the role of ethical leadership and technological innovation in expressing and assessing the revolutionary business practices required to ensure organizational success.

Keywords: innovative performance; ethical leadership; technological innovation; attitudes towards performing well; SME



Citation: Aslam, Hassan Danial, Sorinel Căpușneanu, Tasawar Javed, Ileana-Sorina Rakos, and Cristian-Marian Barbu. 2024. The Mediating Role of Attitudes towards Performing Well between Ethical Leadership, Technological Innovation, and Innovative Performance.

Administrative Sciences 14: 62.
<https://doi.org/10.3390/admsci14040062>

Received: 6 January 2024
Revised: 12 March 2024
Accepted: 16 March 2024
Published: 24 March 2024



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1. Introduction

The diversified approaches of effective governance have become increasingly prevalent in modern working environments, which are undergoing rapid changes that drive competitiveness and organizational performance. As such, there is a greater emphasis on professional practices that contribute to businesses' organizational objectives and allow them to achieve organizational excellence. The developments stemming from the implementation of unique, novel ideas generate possibilities for innovation in terms of the products, services, procedures, or practices that are found to be progressive for businesses (Freire and Bettencourt 2020). Ethical leadership and intellectual capital have been highlighted as important aspects of innovative business practices in the scientific literature; further, the knowledge economy is observed to be an important trait of the innovative initiatives that are driving progress in the business sector (Migdadi 2019). Organizations have stressed the importance of employee innovativeness, which is critical in the competitive business environment of the 21st century (Ghosh et al. 2017). The growing complexity of the organizational environment requires that employees embrace innovation in order

to achieve organizational objectives. The contemporary business environment is flooded with increasingly diverse customer demands and varying performance standards due to ongoing technological advancements and globalization (Jordão et al. 2020).

Organizations have emphasized that effective leadership must incorporate new technologies to enhance employee performance in the competitive global market. Innovative performance is essential to the achievement of core competencies. Innovativeness used to be an inherent quality, but today, it is a necessity in the business world and is critical to an organization's success (Mendoza-Silva 2021). Appropriate training, development, and experience enable individual employees to build upon their strengths in the workplace environment. A business's survival and success depend upon both the efficient utilization of resources and the suitability of the training and experience that drive its operations. To this end, in the current globalized business environment, scholars and practitioners emphasize the importance of innovative behavior in employees, as it is critical to survival and success. While it is important to consider novel ideas and emerging practices associated with business operations at the workplace, it is even more important that employees are encouraged to voice their opinions on issues that affect their performance (Mahoney and Kor 2015; Ali Chughtai 2016). The culture of an organization plays a vital role in devising innovative business strategies; in particular, a company's leadership is instrumental to employees' behavior, promoting the innovativeness that is central to the attitude of employees (Javed et al. 2019).

Previous studies explained the influence of social capital, human capital, and ethical leadership on predicting innovative performance. In one paper, it was reported that human capital and social capital are key to predicting innovative performance and that ethical leadership has a significant impact on innovation, informing organizational success and performance (Ullah et al. 2021). Further efforts have been made to determine radical and incremental innovation by ethical leadership through the mediating impact of both tacit and explicit knowledge (Lei et al. 2020). In the aforementioned study, the researchers incorporated ethical leadership, employee creativity, and knowledge sharing to predict organizational innovation. They also stressed the importance of knowledge sharing, intrinsic motivation, and psychological empowerment with regard to organizational innovation (Shafique et al. 2020). However, the phenomenon of innovative behavior has yet to be described in the literature, indicating that numerous predictors may have been overlooked. In this study, we intend to determine the phenomenon of innovative performance in relation to leadership and technological innovation based on attitudes towards performance.

The technological era and the presence of digital transformation have changed the business landscape in terms of operations, manufacturing, delivery, and management. Previous studies have focused on the technological aspect of marketing products using social media and artificial intelligence; however, there is a lack of empirical evidence assessing the role of technology-related initiatives in the digital sphere with regard to performance-related outcomes (Agnihotri et al. 2016). Technological innovations such as disruptive technology and novel digital thinking now play a vital role in business-to-business transactions via sophisticated IT-based applications. Firms are striving to adopt various technological innovations to enhance the scale, quality, and value of their product or service. One such innovation is online inventory management software, which significantly enhances the efficiency and performance of business operations (Pagani and Pardo 2017).

Diverse leadership styles have attracted significant attention from researchers as one of the striking antecedents of performance. An organization's leadership must be appropriately aligned with the adoption and implementation of technological advancements, altering business models and influencing employees' behavior to ensure a smooth digital transformation. Several studies have highlighted the relationship between technological innovation and the success of a firm with the moderating effect of ethical leadership. It has been argued that technological innovation increases performance standards, while ethical leadership strengthens the association between technology and success (Lin et al. 2020). In this study, we intend to explore the relationship between ethical leadership and innovative

performance, as well as that between technological innovation and innovative performance, in addition to the mediating role of attitude towards performance.

2. Literature Review

The success of an organization and the economic growth of a nation are known to be influenced by the level of innovative activities that have been carried out in pursuit of such objectives. As such, scholars have emphasized the degree of innovation that should be aligned with the introduction, adoption, and implementation of the technological advancements that will enhance an organization's performance (Pradhan et al. 2018). In light of the current hyperactive business environment and rapidly changing business practices, increasingly globalized activities, constant technological advancements, and shortened product life cycles, businesses must embrace innovation in order to gain a sustainable competitive position. The number of individual- and organizational-level factors influence the innovation and creativity of businesses, enhancing the value of their products and altering business operations throughout the supply chain (Hughes et al. 2018). Here, we will explain the roles of ethical leadership and technological innovation in predicting innovative performance and shaping attitudes towards performance. In doing so, we will determine the mediating role of attitude in relation to ethical leadership, technological innovation, and innovative performance.

2.1. Ethical Leadership, Innovative Performance, and Attitude towards Performance

Ethical concerns are becoming increasingly critical to modern business practices. As such, to achieve a desirable working environment, it is necessary to implement a strong moral framework. Previous studies have emphasized the importance of holding the leaders of firms and organizations to a high ethical standard; failing to do so can have significant consequences in the global business environment. The term "ethical leadership" refers to various dialogic styles, modes of actions, and behaviors derived from a diverse array of norms. Further, it has been understood as the mode of conduct necessary for promoting effective communication, the reinforcement of social rules, and effective decision making (Treviño et al. 2014). The ethical concern of team leaders was found to be influential in shaping the behavior of employees and facilitating an ethical workplace environment (Wiernik and Ones 2018).

Some researchers have argued that unethical behavior in the workplace takes the form of blaming others, taking advantage of other employees, claiming credit for other people's work, and displaying favoritism, and discouraging such behavior is highly beneficial. Scholars have empirically investigated the influence of ethical leadership on increasing work engagement, employee well-being, and a firm's performance (Sarwar et al. 2020). Knowledge sharing among employees was found to be higher in the presence of ethical leadership, suggesting the importance of incorporating ethical leadership when assessing performance-related outcomes (Saeed et al. 2022). Previous research has also focused on different leadership styles, including senior leadership, executive leadership, strategic leadership (Lu and Yang 2010), complex leadership (Uhl-Bien et al. 2007), transformational leadership (Javed et al. 2021), and administrative leadership (Javed et al. 2023). Ethical leadership is defined as maintaining an effective working environment in accordance with ethical standards that are tailored to each firm. The current study incorporated the ethical perspective of leadership due to its striking association with performance-related issues, emphasizing truthfulness and honesty, which are key elements of ethical leadership. Ethical conduct in the workplace has achieved elevated importance due to its positive outcomes and negative consequences. Finally, ethical leadership refers to showcasing normatively conducted behavior via interpersonal relations and personal actions (Al Halbusi et al. 2020).

Previously, the literature has focused on the relationship between entrepreneurial leadership and turnover intention, with the mediating effect of affective commitment and moderating role of a person-job fit. One study revealed that affective commitment mediates the relationship between entrepreneurial leadership and turnover intention. This study

also reports a significant relationship between entrepreneurial leadership and turnover intention (Yang et al. 2019). Efforts have been made to determine the moderating effects of humane leadership, justice leadership, and moderating leadership between customer orientation and competitive intensity in predicting the performance of a firm (Feng et al. 2019). Knowledge was found to be a notable factor, as organizations focus on knowledge generation or adoption from external sources to ensure innovation. It has been revealed that the experience, effective communication, and suitability of skills of employees contribute to the innovation process and assist in the implementation of innovative ideas for conducting business operations. Innovative initiatives can only be implemented by establishing the common goals of stakeholders with the highly motivated mindset necessary to accept such novel challenges. Employees with diverse backgrounds play an important role in enhancing their abilities to fit the changing markets, demonstrating a level of trust and a workplace culture that fosters innovative behavior through the adoption of an appropriate leadership style built on strong ethical grounds and concerns (Yun et al. 2020).

The ethical perspective of leadership tends to influence employees' skill level, enhancing their performance through the effective implementation of innovative initiatives. In doing so, it fosters innovative behavior and encourages employees to indulge in creative activities that lead towards innovation. The leaders in such environments are expected to have an eagle eye on their changing working environment, market demand, and their creative process, encouraging innovative initiatives to affect the market. Innovation has been considered a core competency as well, and the ethical perspective is a serious consideration that affects the creativity of employees, resulting in innovative work behavior (Belleflamme and Peitz 2015).

Service innovation behavior has been examined using the mediating effect of psychological capital with ethical leadership as an independent variable. This study reveals that ethical leadership has a significant impact on psychological capital and a significant effect on service innovation behavior. Furthermore, psychological capital was found to significantly mediate the relationship between ethical leadership and service innovation behavior (Özsungur 2019). This study also focused on the relationship between ethical leadership and organizational innovation with the mediating effect of employee creativity and the influence of knowledge sharing, intrinsic motivation, and psychological empowerment, revealing that ethical leadership influences employee creativity and organizational innovation. Further, employee creativity was found to significantly mediate the relationship between ethical leadership and organizational innovation (Shafique et al. 2020).

The dimensions of innovation, including radical innovation and incremental innovation, were found to be influenced by ethical leadership practices with the mediating effect of knowledge sharing. One study argued that tacit and explicit knowledge collectively mediate the relationship between ethical leadership and innovation (Lei et al. 2020). A previous study explained the mediating role of human and social capital with regard to ethical leadership and innovative performance. It also reported a significant impact on performance-related outcomes as a result of appropriate leadership style and human and social capital (Ullah et al. 2021). The impact of ethical leadership impacts worker engagement, employee well-being, and firm performance as a result of ethical culture (Sarwar et al. 2020).

Based on the above literature review, we argue that ethical leadership encourages employees to take initiative and enhance their performance through innovation. This paper also argues that appropriate ethical leadership shapes the attitudes of employees, encouraging them to improve their performance in pursuit of organizational performance-related objectives. Therefore, we devised the following hypotheses:

H1. *Ethical leadership influences the innovative performance of employees in the SME sector of Malaysia.*

H2. Ethical leadership influences the attitude towards performing well among employees in the SME sector of Malaysia.

2.2. Technological Innovation to Innovative Performance and Attitude towards Performing Well

The current business landscape requires that intensive technological advancements be instigated in business processes, allowing them to adapt to ever-changing economic dynamics. This digital transformation has taken the competition to a new level, particularly when it comes to using social media and mobile applications to digitize various processes using artificial intelligence. The previous literature has emphasized these technological advancements; however, there is still a need to investigate the relationship and impact of the technological perspective in the digital sphere. In a study that assessed the relationship between firm performance and technological innovation with the moderating role of ethical leadership, it was argued that the continued presence of technological innovation has the potential to influence organizational performance, and the ethical concerns of a leadership and organizational approach influence a firm's performance by strengthening the relationship between the adoption of technological innovation and the firm's performance (Lin et al. 2020). The researchers argued that business-to-business transactions are being conducted via electronic media which enable effective communication, making it easier for firms to satisfy their organizational needs and accomplish their objectives. Other studies discussed the role of social media in increasing sales and satisfying customers' needs through constructive feedback (Nunan et al. 2018); the acceptability of technological advancements at both nodes, including the management of firms and its employees and users (Lacka and Chong 2016); the relationship between stakeholders and interactions with stakeholders in relation to a diverse range of issues faced by the firm (Wang et al. 2016); and innovations related to marketing and branding (Nguyen et al. 2015).

The literature has also investigated the role of social media and mobile applications, whose increasing popularity make them the perfect platforms for producing, consuming, and exchanging various goods while ensuring that the integrity of information remains intact. The latter is a crucial consideration when marketing products to a wide audience, as disinformation can have a significant negative impact on an organization's objectives and impede a firm's ability to connect with consumers (Tandoc et al. 2018).

Innovation must be embedded in an organization's operational processes to allow it to compete with the rest of the market. The development and adoption of newer technology, merging of existing technologies, and utilization of such technological knowledge in a firm all fall under the umbrella of innovation. Firms must strive to implement the new technological advancements related to novel products that must be distinct from existing products. The adoption of technological innovation enables the development of such competitive products and offers businesses various benefits that cannot be achieved by less technologically advanced firms. Resources also play an important role in the development of diverse and distinct products, as obtaining unique resources will help firms develop products superior to those of their competitors (Hee et al. 2019). Prior research has considered the impacts of product innovation, process innovation, marketing innovation, and organizational innovation, all of which influence a company's performance (Singh and Hanafi 2020).

The performance of organizations largely depends upon innovative initiatives through the utilization of technologies, and as such, scholars have conducted extensive exploration of this phenomenon. Three categories of innovations described by researchers, including product innovation, process innovation, and organizational innovation, enable firms to employ novel methods for improving their processes. Previous work has depicted the correlation between innovative practices and the performance of a firm. For example, researchers assessed the performance of firms based on their sales performance, speed to market, and new product performance (Hanelt et al. 2021; Chindasombatcharoen et al. 2022). These factors were influenced by business innovation capabilities, including ad-

ministrative innovation, management practices, and organizational structure, as well as technological innovations that affected learning capabilities, resource allocation capabilities, and manufacturing capabilities. Another study reported that innovation capabilities have a significant impact on the performance of a firm, and innovation capabilities are an essential factor that predicts the performance of firms (Aziati et al. 2014).

Based on the above literature, we argue that technological innovations are essential for organizational growth and sustainability. We have established that technological innovations influence a firm's performance and shape employees' attitudes and behaviors with regard to organizational goals by providing better services. Therefore, we derived the following hypotheses:

H3. *Technological innovations influence the innovative performance of employees in the SME sector of Malaysia.*

H4. *Technological innovations influence the attitude towards performing well among employees in the SME sector of Malaysia.*

2.3. The Mediating Role of Attitude towards Performance

This study intends to determine the mediating role of attitude towards performance in association with exogenous and endogenous constructs, whereas prior research focused on assessing the mediating role of ethical culture between ethical leadership and work engagement, employee well-being, and firm performance. One study reported that an ethical culture partially mediates the relationship between ethical leadership and work engagement, employee well-being, and firm performance (Sarwar et al. 2020). Another study endeavored to explain the relationship between and impact of ethical leadership on the ethical behavior of employees, in light of the mediating role of organizational justice between dependent and independent variables (Al Halbusi et al. 2020). Another research study assessed the mediating role of psychological capital between ethical leadership and service innovation behavior. Three different models for mediation exist in organizational behavior studies, including an indirect impact model which indicates that dependent and independent variables are associated with a mediator. The partial mediator model shows a direct relationship between independent and dependent variables in terms of effectiveness, whereas the full mediator model which showed a direct relationship no longer exists after being inserted into the mediator model (Gyu Park et al. 2017). Efforts have been made to determine the radical innovation and incremental innovation that occur through the mediating effect of tacit and explicit knowledge sharing influenced by ethical leadership. In other words, ethical leadership has an indirect effect on innovation through knowledge sharing; innovation at the firm level can only be ensured alongside effective ethical leadership and in the presence of knowledge-sharing practices (Lei et al. 2020).

The mediating effects of human capital and social capital have been assessed in terms of the relationship between ethical leadership and innovative performance. In another study, the authors found that human and social capital mediate the relationship between ethical leadership and innovative performance. In other words, in the presence of human and social capital, ethical leadership becomes significantly associated with innovative performance, or the innovative performance influenced by the ethical leadership in the presence of human and social capital (Ullah et al. 2021). This research effort incorporated the attitudes towards performance that related to an individual being steered towards a specific behavioral pattern that could have been negative or positive. It has been determined that psychological attitudes are good predictors of behavior. Employees' attitudes towards their jobs play a vital role in understanding their professional behavior when pursuing their organization's goals. Attitude towards performance refers to employees' evaluation of whether they meet the requirements of their role (Groen et al. 2017). Previously, researchers have focused on the mediating effect of thriving at work in relation to ethical leadership

and innovative work behavior. In this study, however, attitude towards performance was also assessed as a mediator between ethical leadership and innovative work behavior. A study reported that thriving-at-work and attitude towards performance both significantly mediate the relationship between ethical leadership and innovative work behavior (Iqbal et al. 2020).

Based on the studies described above, we derived the following hypotheses:

H5. *Attitude towards performance influences the innovative performance among employees in the SME sector in Malaysia.*

H6. *Attitude towards performance mediates the relationship between ethical leadership and innovative performance in firms in the SME sector in Malaysia.*

H7. *Attitude towards performance mediates the relationship between technological innovation and innovative performance in firms in the SME sector in Malaysia.*

2.4. Research Framework

Figure 1 demonstrates the main variables and hypothesized relationships explored in the current study. Innovative performance is determined by the influence of ethical leadership and technological innovation according to the mediating effect of attitude towards performing well.

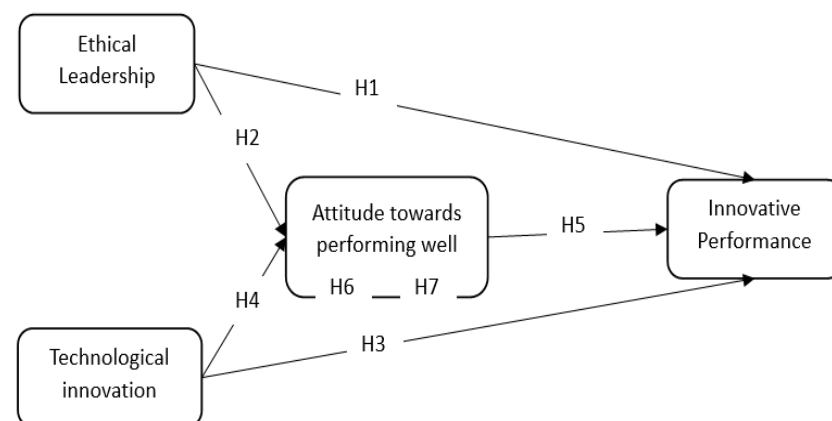


Figure 1. Research framework.

3. Research Methodology

In Malaysia, both small- and medium-sized enterprises play vital roles in economic and market development, increasing income and tax revenue, providing transportation for goods or services; creating new employment opportunities to improve the economy; reducing unemployment and poverty; mitigating negative economic scenarios, contributing to economic empowerment; and maximizing stakeholders' wealth. The Malaysian government has focused on various programs to enrich the nation's economy and to contribute to the gross domestic product (GDP), encouraging people to invest in and establish such ventures to foster entrepreneurial activities. A higher number of failure rates of various enterprises has been observed due to economic fallout, and small businesses in Malaysia often find themselves unable to continue operating due to various challenges. Statistics revealed that 76% of startups remain operative for several years, 47% survive for only four years, and only 38% survive for six years or longer. Further, 50 to 80% of small businesses fail within a short time frame. The SME sector contributes significantly to the Malaysian GDP and exports and also contributes significantly to employment rates, in addition to promoting entrepreneurial activities and attracting new investments, researchers and academicians, trade organizations, and other related agencies (Singh and Hanafi 2020).

This research study is quantitative in nature, as relationships between variables are intended to be examined empirically. Therefore, convenience sampling was employed, and the data were collected through questionnaires distributed among 209 SMEs in a range of sectors and cities in Malaysia. There are approximately 320,000 SMEs in Malaysia located in different regions of Malaysia, including Selangor, Penang, Johar, Kuala Lumpur, Perak, Melaka, Kedah, and Perlis, and these businesses operate in various sectors, including services and manufacturing. Innovation has crucial importance in the manufacturing sector; therefore, this study emphasized the manufacturing SME industry when assessing innovative performance. It was found that innovative initiatives in the SME sector assist in achieving optimal business performance, and innovations related to the product, production, branding, promotion, pricing, and decision-making influence behavior and awareness. Technological innovation and innovative initiatives have markedly improved the production process in the SME manufacturing sector in Malaysia (Sukri et al. 2023).

This study utilized previously developed research instruments from different studies to assess the relationships between constructs. The measurement scale of ethical leadership was originally developed by Brown et al. (2005) but was widely used by various studies after being adopted from another study (Özsungur 2019). The ten items' scales included the sample items "my leader ensures that employees are reprimanded for ethical violations", "my leader conducts their own life in an ethical manner", and "my leader has an interest in their employees and their mental health". Technological innovations were assessed based on the inclusion of "research and development", the capability to adopt technological changes, intellectual property rights, and the capability to obtain patents. The five-item measurement scale of technological innovation was adopted from a previous study (Su 2023). The dependent variable of innovative performance consisted of nine statements, including "idea generation", "ideas promotion", and "idea realization", indicating that "our employees generate original solutions to problems", "our employees mobilize support for innovative ideas", and "our employees transform innovative ideas into useful applications". The measurement scale was taken from another research paper (Khan et al. 2021). The mediating variable "attitude towards performing-well" consisted of three items adopted from another research paper (Iqbal et al. 2020). All the items were assessed on a 5-point Likert scale ranging from 1 of "strongly disagree" to 5 of "strongly agree". Later, the collected data were analyzed in Smart-PLS v.3.3.4 software.

4. Data Analysis and Discussion

This section of this research paper embarks on a two-stage analysis. The first stage focuses on the reliability and validity of the constructs, whereas the second stage focuses on assessing relationships, as depicted in Figure 1.

4.1. Measurement Model Assessment

The first phase of this analysis is related to the assessment of the reliability and validity of the variables. The reliability of all constructs was assessed based on the values of Cronbach's alpha and composite reliability. The Cronbach's alpha values had to remain higher than 0.70, whereas the value for CR had to be higher than 0.70 in order to be deemed acceptably reliable. The validity of the constructs was determined based on the average variance extracted (AVE) and the value had to be higher than 0.50 to achieve acceptability (Hair et al. 2014). Further, the validity was determined on the basis of discriminant validity according to previously established criteria (Fornell and Larcker 1981). The measurement model was assessed through the PLS-algorithm method of PLS v.3.3.4.

Table 1 shows the reliability and validity of the constructs.

The above table demonstrates the values for reliability and validity. A Cronbach's alpha greater than 0.70 was deemed acceptable; a value greater than 0.80 was considered good reliability; and a value higher than 0.90 was considered to be a sign of excellent reliability. Similarly, the value for the CR and the value for the AVE had to be higher than

0.50 for acceptable validity (Hair et al. 2012). These results show that the reliability and validity conditions were successfully established and achieved according to the suggestions.

Table 1. Constructs' reliability and validity.

Construct	Cronbach α	CR	AVE
ATPW	0.932	0.935	0.880
EL	0.929	0.933	0.609
IP	0.828	0.858	0.501
TI	0.940	0.942	0.807

Note: Attitude towards performing well (ATPW); ethical leadership (EL); innovative performance (IP); technological innovation (TI).

4.2. Discriminant Validity

This section determines the discriminant validity of the constructs. The Fornell and Larcker (1981) criteria suggested that intersectional values that are the square roots of the AVE must be higher than the correlational values of the remaining constructs for the satisfaction of discrimination. Table 2 demonstrates the discriminant validity.

Table 2. Discriminant validity.

Construct	ATPW	EL	IP	TI
ATPW	0.938			
EL	0.561	0.780		
IP	0.684	0.664	0.666	
TI	0.649	0.620	0.531	0.899

Note: Attitude towards performing well (ATPW); ethical leadership (EL); innovative performance (IP); technological innovation (TI).

Table 2 shows that the square root of the AVE is higher than the other correlational values, and hence, discriminant validity was achieved as per the suggested criteria. Figure 2 contains the measurement model assessment.

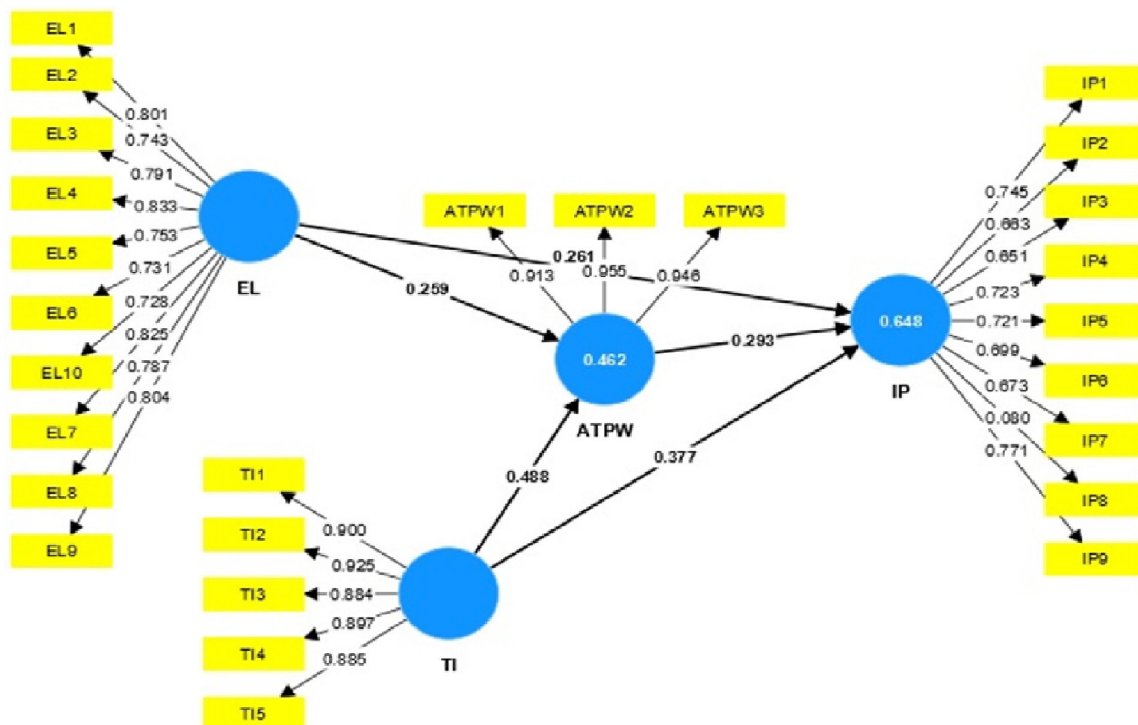


Figure 2. Measurement model assessment. Note: Attitude towards performing well (ATPW); ethical leadership (EL); innovative performance (IP); technological innovation (TI).

4.3. Structural Equation Modeling (SEM)

The second phase of this analysis is to determine the significance of the relationships between the variables via the bootstrapping method, based on the β -value, t -value, and p -value. The t -value must be higher than 1.96, whereas the p -value must be lower than 0.05 to be deemed significant, as per the suggested criteria (Hair et al. 2012).

Five direct and two indirect (mediating) hypothesized relationships will be examined empirically based on the collected data. The results of the direct relationships are presented in Table 3 below.

Table 3. Results of direct hypotheses.

Hypothesis	β	t -Statistic	p -Value
EL→IP	0.343	3.138	0.002
EL→ATPW	0.258	2.596	0.009
TI→IP	0.518	5.248	0.000
TI→ATPW	0.489	4.902	0.000
ATPW→IP	0.293	3.156	0.002

Note: Attitude towards performing well (ATPW); ethical leadership (EL); innovative performance (IP); technological innovation (TI).

5. Discussion of Hypotheses

Hypothesis H1 pertains to the relationship between ethical leadership and innovative performance, suggesting that appropriate leadership facilitates positive performance-related outcomes. Previous work has analyzed the impact of ethical leadership on performance-related dimensions. The results in Table 3 demonstrate that ethical leadership has a significant impact on innovative performance, suggesting that the ethical concerns of team leaders influence both the working environment and perceptions of performance in the workplace. The t -value is higher than the cutoff value and the p -value is within the limit of significance. Hence, hypothesis H₁ is statistically significant. These results verified previous authors' findings (Sarwar et al. 2020), who described a significant association between ethical leadership and firm performance, as well as those of another research team (Khan et al. 2021). This research is unique, as it determines the influence of ethical leadership on innovative performance; previous studies overlooked this relationship, as the authors focused on determining a firm's performance instead.

Hypothesis H2 concerns the relationship between ethical leadership and attitude towards performance, suggesting that ethical leadership influences employees' attitudes towards a higher performance level. The results in Table 3 support this, indicating that the ethical concerns of both employees and leaders motivate employees to improve their performance and to contribute to organizational achievements. These findings are in line with those of a previous study that described a significant relationship between ethical leadership, employees' attitudes towards performance, and the pursuit of organizational goals (Iqbal et al. 2020). The findings of this study relate to the relationship between ethical leadership and innovative performance, as well as between ethical leadership and attitude towards performing well. It was determined that a higher level of morality, honesty, and integrity is critical to achieving progress. Firms' managerial approaches must ensure ethical conduct in the workplace to reduce the negative emotions of employees, as these lead to reductions in performance-related outcomes.

Hypothesis H3 relates to the relationship between technological innovation and innovative performance. Previously, researchers have argued that technological innovation is crucial, enabling firms to enhance benefits and increase their operational performance by reducing costs and enriching quality standards. In our study, we reported that technological innovation affects various performance-related outcomes. As shown in Table 3, the t -value and p -value were found to be within significance limits. Hence, hypothesis H3 is statistically significant and is in alignment with previous findings (Lin et al. 2020).

Hypothesis H4 addresses the relationship between technological innovation and attitude towards performance, suggesting that technological innovation encourages employees to improve their technological knowledge, skills, and abilities in alignment with emerging business operations and practices. The results presented in Table 3 demonstrate that technological innovation significantly influences employees' attitude towards performance, encouraging them to improve their knowledge, skills, and abilities in adherence with the latest working patterns and business operations. This demonstrates employees' willingness to enrich their awareness, knowledge, skills, and abilities in line with upgraded business operations in order to achieve the goals and performance requirements of their organization. These findings were also in agreement with the significant impact of technological innovation on firm performance (Lin et al. 2020). Similarly, this study reported that technological innovation tends to shape employees' behaviors and attitudes towards such technologies.

Hypothesis H5 addresses the relationship between attitude and innovative performance. To our knowledge, no previous studies have identified a direct relationship between attitude and innovative performance; however, the theory of a resource-based view posits that when it comes to both tangible and intangible resources, the attitudes of employees influence performance-related outcomes. This supports our argument that attitude can affect innovative performance. The results in Table 3 indicate that attitude towards performance significantly influences innovative performance, whereas ethical leadership and technological innovations affect both attitude and innovative performance. Our findings are also in agreement with those of Iqbal et al. (2020), who reported that attitude towards performance influences innovative behavior in the workplace.

Hypothesis H6 considers the mediating role of attitude towards performance with regard to ethical leadership and innovative performance, suggesting that ethical leadership has a significant influence on both attitude towards performance and innovative performance. This mediating role was assessed, and the results are presented in Table 4 below. The mediating role of attitude towards performance in the relationship between ethical leadership and innovative performance was determined to be insignificant, since ethical leadership provides the visions, missions, directions, objectives, and resources necessary to accomplish an organization's goals, but attitude towards performing well has no mediatory role between these variables. This finding contradicts previous research by Iqbal et al. (2020), who reported a significant mediatory role of attitude towards performing well in relation to ethical leadership and innovative work behavior. Hence, hypothesis H6 was rejected on statistical grounds.

Hypothesis H7 explores the mediating role of attitude towards performing well in association with technological innovation and innovative performance, suggesting that the former influences employees' attitudes towards improving their performance and subsequently predicts innovative performance. The results in Table 4 show that attitude towards performing well plays a significant mediating role between technological innovation and innovative performance. This study claims to be a pioneer when it comes to assessing the mediating role of attitude towards performing well between technological innovation and innovation performance. It establishes that adopting and implementing technological innovations in any sector fosters operational changes and alters business practices, improving performance in various areas. As such, hypothesis H7 is accepted.

Table 4. Mediating effects.

Hypothesis	β	t-Statistic	p-Value
EL→ATPW→IP	0.143	3.138	0.002
TI→ATPW→IP	0.076	1.851	0.064

Note: Attitude towards performing well (ATPW); ethical leadership (EL); innovative performance (IP); technological innovation (TI).

6. Conclusions

In this study, we employed the resource-based view theory to explain the phenomenon of innovative performance. Focusing on internal capabilities such as leadership perspective and the adoption of technological advancements, and encouraging employees to adopt more positive attitudes, this theory facilitates improved performance and, concurrently, the accomplishment of objectives and goals. In this study, we aimed to assess the influence of ethical leadership and technological innovation in order to predict performance innovations, considering the mediating role of attitudes towards performance. We established that ethical leadership should be implemented at the firm level to provide appropriate guidance, and that any ethical concerns should be addressed, fostering innovative performance and the achievement of related objectives. We also determined that embracing the latest technological developments supports innovative performance. In addition, attitude was found to play a vital role in explaining various workplace phenomena. This study incorporated attitude towards performing well as a mediator of both exogenous and endogenous constructs. Attitude was also found to influence technological innovation and innovative performance, indicating that employees' attitudes enable firms to adopt and implement the technological advancements that predict such innovations. The mediating effects of ethical leadership and innovative performance were deemed insignificant; however, ethical leadership was found to be a direct predictor of innovative performance. SMEs of the Malaysian region is recommended to address ethical concerns associated with their leadership to promote innovative performance and to consider adopting and implementing the latest technologies in order to predict such innovations.

Every study has its limitations, and in this case, we faced challenges associated with a lack of resources and research approaches. This study was conducted in Malaysia in the state of Selangor, and although we endeavored to collect unbiased data from a sufficient sample size, various categories of SMEs were not included due to difficulties with data collection (problems organizing meetings, etc.), which may have affected the generalizability of the findings. Future research on this topic should incorporate a large sample size and gathering data from diverse industries and categories of SMEs in different Malaysian states.

This was a quantitative research study; in future, mixed methods should be implemented, incorporating emerging phenomena to explain innovative performance. Moreover, national characteristics may also be emphasized in future research, as these can affect multiple outcomes. This study was cross-sectional, with data collected in a short period of time future research be conducted on a longitudinal basis, involving different time spans for a broader assessment of innovative performance.

Author Contributions: Conceptualization, H.D.A. and T.J.; methodology, S.C.; software, T.J.; validation, H.D.A., T.J. and S.C.; formal analysis, I.-S.R.; investigation, C.-M.B.; resources, I.-S.R.; data curation, S.C.; writing—original draft preparation, H.D.A.; writing—review and editing, T.J.; visualization, C.-M.B.; supervision, S.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: All data are contained within this article.

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

References

- Agnihotri, Raj, Rebecca Dingus, Michael Y. Hu, and Michael T. Krush. 2016. Social media: Influencing customer satisfaction in B2B sales. *Industrial, Marketing Management* 53: 172–80. [[CrossRef](#)]

- Al Halbusi, Hussam, Kent A. Williams, Hamdan O. Mansoor, Mohammed Salah Hassan, and Fatima Amir Hammad Hamid. 2020. Examining the impact of ethical leadership and organizational justice on employees' ethical behavior: Does person–organization fit play a role? *Ethics & Behavior* 30: 514–32.
- Ali Chughtai, Aamir. 2016. Can ethical leaders enhance their followers' creativity? *Leadership* 12: 230–49. [\[CrossRef\]](#)
- Aziati, A. H. Nor, Rosmaini Hj Tasmin, Lim Bee Jia, and Nor Hazana Abdullah. 2014. The relationship of technological innovation capabilities and business innovation capabilities on organization performance: Preliminary findings of Malaysian food processing SMEs. Paper presented at International Conference on Engineering, Technology and Innovation (ICE 2014), Bergamo, Italy, June 23–25; pp. 1–8.
- Belleflamme, Paul, and Martin Peitz. 2015. *Industrial Organization: Markets and Strategies*. Cambridge: Cambridge University Press.
- Brown, Michael E., Linda K. Treviño, and David A. Harrison. 2005. Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes* 97: 117–34. [\[CrossRef\]](#)
- Chindasombatcharoen, Pongsapak, Pattanaporn Chatjuthamard, Pornsit Jiraporn, and Sirimon Treepongkaruna. 2022. Achieving sustainable development goals through board size and innovation. *Sustainable Development* 30: 664–77. [\[CrossRef\]](#)
- Feng, Taiwen, Dan Wang, Alan Lawton, and Ben Nanfeng Luo. 2019. Customer orientation and firm performance: The joint moderating effects of ethical leadership and competitive intensity. *Journal of Business Research* 100: 111–21. [\[CrossRef\]](#)
- Fornell, Claes, and David F. Larcker. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research* 18: 39. [\[CrossRef\]](#)
- Freire, Carla, and Claudia Bettencourt. 2020. Impact of ethical leadership on job satisfaction: The mediating effect of work–family conflict. *Leadership & Organization Development Journal* 41: 319–30.
- Ghosh, Arghya, Takao Kato, and Hodaka Morita. 2017. Incremental innovation and competitive pressure in the presence of discrete innovation. *Journal of Economic Behavior & Organization* 135: 1–14.
- Groen, Bianca A. C., Celeste P. M. Wilderom, and Marc J. F. Wouters. 2017. High job performance through co-developing performance measures with employees. *Human Resource Management* 56: 111–32. [\[CrossRef\]](#)
- Gyu Park, Jong, Jeong Sik Kim, Seung Won Yoon, and Baek-Kyoo Joo. 2017. The effects of empowering leadership on psychological well-being and job engagement: The mediating role of psychological capital. *Leadership & Organization Development Journal* 38: 350–67.
- Hair, Joe F., Jr., Marko Sarstedt, Lucas Hopkins, and Volker G. Kuppelwieser. 2014. Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review* 26: 106–21. [\[CrossRef\]](#)
- Hair, Joe F., Marko Sarstedt, Christian M. Ringle, and Jeannette A. Mena. 2012. An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science* 40: 414–33. [\[CrossRef\]](#)
- Hanelt, Andre, Sebastian Firk, Björn Hildebrandt, and Lutz M. Kolbe. 2021. Digital M&A, digital innovation, and firm performance: An empirical investigation. *European Journal of Information Systems* 30: 3–26.
- Hee, Ong Choon, Tan Meng Kuan, Lim Lee Ping, Tan Owee Kowang, and Goh Chin Fei. 2019. Determinants of Innovative Performance in the Manufacturing Industry in Malaysia. *International Journal of Academic Research in Business and Social Sciences* 9: 380–87. [\[CrossRef\]](#) [\[PubMed\]](#)
- Hughes, David J., Allan Lee, Amy Wei Tian, Alex Newman, and Alison Legood. 2018. Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly* 29: 549–69. [\[CrossRef\]](#)
- Iqbal, Zulfiqar Ahmed, Ghulam Abid, Francoise Contreras, Qandeel Hassan, and Rabbia Zafar. 2020. Ethical leadership and innovative work behavior: The mediating role of individual attributes. *Journal of Open Innovation: Technology, Market, and Complexity* 6: 68. [\[CrossRef\]](#)
- Javed, Basharat, Sayyed Muhammad Mehdi Raza Naqvi, Abdul Karim Khan, Surendra Arjoon, and Hafiz Habib Tayyeb. 2019. Impact of inclusive leadership on innovative work behavior: The role of psychological safety. *Journal of Management & Organization* 25: 117–36.
- Javed, Tasawar, Saeed Ahmad Sabir, and Syed Izhar Bukhari. 2023. Tertiary Education Performance Influenced by Administrative Leadership, Entrepreneurial Orientation with Moderating Role of Managerial Ties. *Journal of Entrepreneurship and Business Venturing* 3: 240–56. [\[CrossRef\]](#)
- Javed, Tasawar, Shanayyara Mahmood, Saadia Khan, and Habib Ullah. 2021. The Mediating Role of Affective Commitment between Creative Self-Efficacy, Authentic Leadership and Innovative Behaviour among Academic Employees of Higher Education Sector of Punjab, Pakistan. *IRASD Journal of Management* 3: 429–47. [\[CrossRef\]](#)
- Jordão, Ricardo Vinicius Dias, Jorge Novas, and Vipin Gupta. 2020. The role of knowledge-based networks in the intellectual capital and organizational performance of small and medium-sized enterprises. *Kybernetes* 49: 116–40. [\[CrossRef\]](#)
- Khan, Irfan Ullah, Muhammad Idris, and Rooh Ul Amin. 2021. Leadership style and performance in higher education: The role of organizational justice. *International Journal of Leadership in Education* 26: 1111–25. [\[CrossRef\]](#)
- Lacka, Ewelina, and Alain Chong. 2016. Usability perspective on social media sites' adoption in the B2B context. *Industrial Marketing Management* 54: 80–91. [\[CrossRef\]](#)
- Lei, Hui, Anh Thi Lan Ha, and Phong Ba Le. 2020. How ethical leadership cultivates radical and incremental innovation: The mediating role of tacit and explicit knowledge sharing. *Journal of Business & Industrial Marketing* 35: 849–62.
- Lu, Chin-San, and Chung-San Yang. 2010. Safety leadership and safety behavior in container terminal operations. *Safety Science* 48: 123–34. [\[CrossRef\]](#)

- Lin, Woon Leong, Nick Yip, Jo Ann Ho, and Murali Sambasivan. 2020. The adoption of technological innovations in a B2B context and its impact on firm performance: An ethical leadership perspective. *Industrial Marketing Management* 89: 61–71. [\[CrossRef\]](#)
- Mahoney, Joseph T., and Yasemin Y. Kor. 2015. Advancing the human capital perspective on value creation by joining capabilities and governance approaches. *Academy of Management Perspectives* 29: 296–308. [\[CrossRef\]](#)
- Mendoza-Silva, Andrea. 2021. Innovation capability: A systematic literature review. *European Journal of Innovation Management* 24: 707–34. [\[CrossRef\]](#)
- Migdadi, Mahmoud M. 2019. Organizational learning capability, innovation and organizational performance. *European Journal of Innovation Management* 24: 151–72. [\[CrossRef\]](#)
- Nguyen, Bang, Xiaoyu Yu, T. C. Melewar, and Junsong Chen. 2015. Brand innovation and social media: Knowledge acquisition from social media, market orientation, and the moderating role of social media strategic capability. *Industrial Marketing Management* 51: 11–25. [\[CrossRef\]](#)
- Nunan, Daniel, Olivier Sibai, Bruno Schivinski, and George Christodoulides. 2018. Reflections on “social media: Influencing customer satisfaction in B2B sales” and a research agenda. *Industrial Marketing Management* 75: 31–36. [\[CrossRef\]](#)
- Özsungur, Fahri. 2019. The impact of ethical leadership on service innovation behavior: The mediating role of psychological capital. *Asia Pacific Journal of Innovation and Entrepreneurship* 13: 73–88. [\[CrossRef\]](#)
- Pagani, Margherita, and Catherine Pardo. 2017. The impact of digital technology on relationships in a business network. *Industrial Marketing Management* 67: 185–92. [\[CrossRef\]](#)
- Pradhan, Rudra P., Mark B. Arvin, and Sahar Bahmani. 2018. Are innovation and financial development causative factors in economic growth? Evidence from a panel granger causality test. *Technological Forecasting and Social Change* 132: 130–42. [\[CrossRef\]](#)
- Saeed, Imran, Jawad Khan, Muhammad Zada, Shagufta Zada, Alejandro Vega-Muñoz, and Nicolás Contreras-Barraza. 2022. Linking ethical leadership to followers’ knowledge sharing: Mediating role of psychological ownership and moderating role of professional commitment. *Frontiers in Psychology* 13: 841590. [\[CrossRef\]](#) [\[PubMed\]](#)
- Sarwar, Huma, Muhammad Ishtiaq Ishaq, Anam Amin, and Roheel Ahmed. 2020. Ethical leadership, work engagement, employees’ well-being, and performance: A cross-cultural comparison. *Journal of Sustainable Tourism* 28: 2008–26. [\[CrossRef\]](#)
- Shafique, Imran, Bashir Ahmad, and Masood Nawaz Kalyar. 2020. How ethical leadership influences creativity and organizational innovation: Examining the underlying mechanisms. *European Journal of Innovation Management* 23: 114–33. [\[CrossRef\]](#)
- Singh, Daljeet Singh Malkeet, and Norshafizah Binti Hanafi. 2020. Innovation capacity and performance of Malaysian SMES. *International Journal of Academic Research in Business and Social Sciences* 10: 665–79. [\[CrossRef\]](#)
- Su, Yun Hsuan. 2023. The effect of product innovation, CSR, environmental sustainability and technology innovation on firm performance: A mediated moderation model. *Economic Research-Ekonomika Istraživanja* 36: 2180417. [\[CrossRef\]](#)
- Sukri, Najahul Kamilah Aminy, Siti Nur ‘Atikah Zulkiffli, Nik Hazimah Nik Mat, Khatijah Omar, Mukhammad Kholid Mawardi, and Nur Farah Zafira Zaidi. 2023. An Analysis of Eco-Innovation Capabilities among Small and Medium Enterprises in Malaysia. *Administrative Sciences* 13: 113. [\[CrossRef\]](#)
- Tandoc, Edson C., Jr., Zheng Wei Lim, and Richard Ling. 2018. Defining “fake news” A typology of scholarly definitions. *Digital Journalism* 6: 137–53. [\[CrossRef\]](#)
- Treviño, Linda Klebe, Niki A. Den Nieuwenboer, and Jennifer J. Kish-Gephart. 2014. (Un) ethical behavior in organizations. *Annual Review of Psychology* 65: 635–60. [\[CrossRef\]](#)
- Uhl-Bien, Mary, Russ Marion, and Bill McKelvey. 2007. Complexity Leadership Theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly* 18: 298–318. [\[CrossRef\]](#)
- Ullah, Irfan, Bilal Mirza, and Amber Jamil. 2021. The influence of ethical leadership on innovative performance: Modeling the mediating role of intellectual capital. *Journal of Management Development* 40: 273–92. [\[CrossRef\]](#)
- Wang, William Y. C., David J. Pauleen, and Tingting Zhang. 2016. How social media applications affect B2B communication and improve business performance in SMEs. *Industrial Marketing Management* 54: 4–14. [\[CrossRef\]](#)
- Wiernik, Brenton M., and Deniz S. Ones. 2018. Ethical employee behaviors in the consensus taxonomy of counterproductive work behaviors. *International Journal of Selection and Assessment* 26: 36–48. [\[CrossRef\]](#)
- Yang, Juan, Bo Pu, and Zhenzhong Guan. 2019. Entrepreneurial leadership and turnover intention of employees: The role of affective commitment and person-job fit. *International Journal of Environmental Research and Public Health* 16: 2380. [\[CrossRef\]](#)
- Yun, JynHyo Joseph, Xiaofei Zhao, KwangHo Jung, and Tan Yigitcanlar. 2020. The culture for open innovation dynamics. *Sustainability* 12: 5076. [\[CrossRef\]](#)

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