

Entrepreneurial leadership, organizational resilience, and learning: Basis for innovative performance framework

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Abstract

The study aimed to evaluate the entrepreneurial leadership, organizational resilience and organizational learning of automotive industry in China that was made the basis in developing an Innovative Performance framework for SME's automotive industry. Descriptive design was utilized in the study as it shed light in describing the current situation in the automotive industry. Survey questionnaire was used as the data gathering instrument as it is considered a valuable tool in gathering data in the automotive industry and how the respondents perceive the relationships of leadership, resilience and learning to innovative performance. The 400 employees from five leading automotive companies in Shanghai and Guangdong province were used as the research participants. Based from the results, the respondents revealed strong agreement on the entrepreneurial leadership as having visionary mindset, committed to innovation and having strong people's skills. The respondents revealed strong agreement on the importance of relationship resilience, financial resilience and technology resilience for the organization leaders. Further, strong agreement was also found on their organizational learning as to learning orientation, infrastructure and agility that contributes to more innovative and dynamic organizations. There is a high significant relationship between entrepreneurial leadership, organizational resilience and organizational learning. An innovative performance framework was developed for the competitive edge among automotive industries.

Keywords: entrepreneurial leadership, organizational resilience, organizational learning, innovative performance

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1. Introduction

The automobile sector is currently experiencing a time of incomparable and remarkable transformation. Companies are encountering new obstacles and opportunities due to technical breakthroughs such as electric automobiles and autonomous driving, which require a fresh strategy. The automotive industry to remain competitive, possess both innovative ideas and the ability to quickly adapt and learn in response to changes. This study examined the crucial significance of entrepreneurial leadership, organizational resilience, and organizational learning in promoting creative performance in the automotive industry. The integration of these three variables enable the automotive industry to prosper in a constantly changing and volatile setting.

Entrepreneurial leadership plays a crucial role in driving the success of enterprises in the ever changing automotive industry. Entrepreneurs proactively pursue new opportunities, readily adapt to change, and advocate for the creation of innovative solutions. Research has indicated a direct relationship between entrepreneurial leadership and the performance of automotive industry. Entrepreneurial leaders play a crucial role in promoting innovation, recognizing fresh prospects, and cultivating a climate that encourages taking risks. This ultimately results in heightened competitiveness and expansion (Lee et al.,2021). Entrepreneurial leadership cultivates an innovative atmosphere that motivates personnel to generate novel ideas and solutions. Adaptability and adeptness in overcoming problems are essential for automotive industry. It is worth noting that organizational resilience pertains to the capacity of automotive industry to effectively adjust, recover, and prosper in the presence of obstacles and disturbances. One important discovery is the significance of resilience in promoting adaptability. Adaptable organizations have the ability to modify their strategy and operations to accommodate shifts in market conditions, technological progress, and consumer preferences.

Automotive companies that demonstrate resilience have the ability to adapt their strategies and operations in order to successfully navigate through market conditions that are subject to change. The automobile industry is currently experiencing a swift and significant change due to the introduction of electric vehicles, autonomous driving technology, and other groundbreaking advancements. In order to remain pertinent, automotive industry must engage in ongoing learning and adjustment (Akgün et al.,2019). The ever-changing consumer demands for sustainability, connectivity, and safety are continuously evolving. Organizational learning enables automotive industry to comprehend these evolving tastes and make necessary adjustments to their offers. The automobile sector is characterized by intense competition. Automotive industry can get a competitive advantage by engaging in continuous learning and improvement. Organizational learning is essential for automotive industry to prosper in the fast-paced automotive industry, where innovation and adaptation are critical. It is an ongoing process through the industry obtain, exchange, and use information to enhance their capacities and performance. It includes actions such as experimentation and innovation, sharing of best practices, learning from both triumphs and failures, and adjusting to evolving market conditions.

The automotive business must possess a distinct combination of leadership, resilience, and adaptability in order to effectively overcome problems and prosper. The continuous success in the dynamic automotive industry is achieved through the synergistic relationship between entrepreneurial leadership, organizational learning, and resilience, creating a virtuous cycle. The automobile business is seeing rapid technological progress, with the emergence of electric vehicles, autonomous driving, and novel materials significantly influencing the industry. The impact of these changes on the correlation between leadership, resilience, and learning is utmost important. Disruptions in worldwide supply chains can have a substantial impact in automotive industry. The mechanisms by which automotive industry demonstrate resilience in the face of shocks, as well as the role of learning in promoting their ability to adapt. Automotive industry may face difficulties due to the constantly changing

legislation regarding pollution, safety, and data protection. Strategies have to be employed by entrepreneurial leaders to negotiate the complicated regulatory entrepreneurial environment.

This study has the potential to enhance the comprehension of the interplay between entrepreneurial leadership, organizational resilience, and organizational learning in the dynamic and demanding automotive industry. The research may discover the most effective techniques and strategies for promoting these essential attributes automotive industry. This expertise can be applied to create training programs, support systems, and frameworks specifically designed for automotive industry. Research findings can provide policymakers with guidance on how to provide a conducive climate for the automotive industry. This may encompass policies that promote innovation, permit risk-taking, and enable access to resources.

Through the present study, automotive industry can establish a competitive edge in the ever-changing automotive sector. It may contribute to improved automotive industry knowledge on higher degree of adaptability to technological advancements, client preferences, and market dynamics. This research can assist managers of automotive industry in formulating strategies to foster innovation and facilitate the creation of new products, so contributing to a more resilient and prosperous firm. Further, the present study may contribute to the body of knowledge in comprehending how automotive enterprises navigate this ever-changing environment. This information will be highly pertinent and appealing to prospective employers in the automobile industry. Examining entrepreneurial leadership, organizational resilience, and organizational learning in the automotive industry provides useful insights for students, employees, and the managers of automotive industry themselves. This research has the potential to ultimately enhance the innovation, adaptability, and success of the automobile sector.

Objectives of the Study - The study examined the entrepreneurial leadership, organizational resilience and organizational learning of SME's in China that was made the basis in developing an Innovative Performance framework for SME's automotive industry. Specifically, it described entrepreneurial leadership in terms of visionary leadership, innovativeness and people's skills; determined the organizational resilience as to relationship resilience, financial resilience and technology resilience; assessed the organizational learning in terms of learning orientation, learning infrastructure and learning agility; tested the significant relationship among entrepreneurial leadership, organizational resilience and organizational learning and developed an innovative performance framework for SME's automotive industry.

2. Methods

Research Design - Descriptive research seeks to provide an accurate representation of the characteristics, current state, or functions of a phenomena (Creswell et al.,2018). Its primary objective is to provide a detailed description of the scenario or incident. Descriptive research methods are employed to collect data about a population or sample, enabling researchers to gain a more profound comprehension of the subject being studied. A descriptive study serves as a first approach to investigate a phenomenon and get a more profound comprehension of it (Creswell et al.,2018). The automotive sector is complex and small and medium-sized enterprises (SMEs) within it can exhibit significant variations. A descriptive study provided the researcher with insights into the particular circumstances and distinct difficulties encountered by these small and medium-sized enterprises (SMEs).

Participants of the Study - The participants were from Shanghai and Guangdong province, 400 employees from the five leading automotive companies. The research study was conducted in NIO, Xiaomi, Xiaopeng, Huawei and BYD. Employees play a crucial role in implementing entrepreneurial leadership, organizational learning, and resilience inside a small and medium-sized enterprise (SME). Their experiences and viewpoints can provide insight into how these concepts are implemented in everyday routines. These attributes have a substantial influence on the working environment of employees. Directly studying employees enables researcher to gain insights into the impact of these characteristics on job satisfaction, motivation, and engagement.

Convenience purposive sampling was used by the researcher in data gathering. This enabled the researcher to easily and willingly access a sample of employees who are readily available and ready to participate. The researcher has the ability to focus on particular employee groups inside automotive companies small and medium-sized enterprises (SMEs) by considering their jobs and the valuable knowledge they possess regarding the research subject, such as managers and frontline workers.

Instrument of the Study - The study adopted a self-made questionnaire as the data gathering instrument tool. A self-made questionnaire was created to specifically target the distinct difficulties and practices of this industry. This enabled the researcher to customize the questionnaire according to the objectives of the study. The researcher was able to customize a questionnaire to fit the research goals of studying entrepreneurial leadership, organizational resilience, and organizational learning in small and medium-sized enterprises (SMEs) in the automotive industry. The first part of the questionnaire assessed the entrepreneurial leadership as to visionary leadership, innovative leadership and people's skills. The second part measured the organizational resilience as to relationship resilience, financial resilience and technology resilience. The third part described the organizational learning as to learning orientation, learning infrastructure and learning agility.

The internal consistency of the indicators were tested using the reliability test. Based on result, the Entrepreneurship Leadership, Organizational Resilience, Organizational Learning Instrument has an excellent consistency as exhibited by the Cronbach's Alpha value of (.978) This was validated by the excellent result by the Entrepreneurship Leadership (.938). It was confirmed by the acceptable result from Visionary Leadership (.766), and good results from Innovative Leadership (.861) and People's Skills (.880). Also, it was validated by the Excellent remarks from Organizational Resilience (.952); it was confirmed by the excellent results from Relationship Resilience (.919), Financial Resilience (.918), and good result from Techno Resilience (.851). Moreover, it was also validated by the excellent result from Organizational Learning (.961); it was confirmed by the good results from Learning Orientation (.893), and Learning Agility (.880), and excellent result from Learning Infrastructure (.947). These results mean that the instrument at hand passed the reliability index test. Thus, the researcher proceeded to the actual survey using the aforementioned instrument.

Data Gathering Procedure - This study utilized a quantitative research methodology, employing a self-constructed questionnaire to collect data from respondents working in small and medium-sized enterprises (SMEs) in the automotive industry. The questionnaire was designed through a comprehensive examination of current literature on entrepreneurial leadership, organizational resilience, and organizational learning. A pilot test was conducted with a small group of employees from a similar small and medium-sized enterprise (SME) to check that the test was clear, thorough, and had face validity. Reliability tests were performed to ascertain the uniformity and trustworthiness of the indicators in the instrument. In research, this frequently pertains to questionnaires that were devised by the researcher. Reliability is crucial in ensuring that the questionnaire regularly and accurately measures the intended objectives. By utilizing a dependable tool, researchers can enhance her confidence in the accuracy of the findings, ensuring that they truly capture the experiences and opinions of the participants. The questionnaire utilized Likert-scale items to comprehensively collect employee perceptions. The survey was conducted digitally using a secure web platform. Engagement was optional and confidential. The questionnaire encompassed both consent and data privacy. In order to obtain a sample that accurately represents the population, the questionnaire was issued to all workers working in the participating automotive small and medium-sized enterprises (SMEs). The data gathering phase was four weeks, accompanied by further email correspondence.

Data Analysis - Weighted mean and Rank were used to describe entrepreneurial leadership as to visionary leadership, innovative leadership and people's skills, determined the organizational resilience as to relationship resilience, financial resilience and technology resilience and assessed the organizational learning as to learning orientation, learning infrastructure and learning agility The result of Shapiro-Wilk Test showed that p-values of all variables were less than 0.05 which means that the data set was not normally distributed. Therefore, Spearman rho was used as part of the non-parametric tests to determine the significant relationship. All analyses

were performed using SPSS version 28.

Ethical Considerations - This research study abides by ethical guidelines to safeguard the welfare and confidentiality of participants, who are exclusively employees in small and medium-sized enterprises (SMEs) within the automotive industry. Participants were given an informed consent form that explained the study's objective, how data would be collected, the possible risks and advantages of participating, and their right to withdraw at any point. The informed consent form was composed using clear and concise language, guaranteeing that participants comprehended the research completely prior to giving their consent. The entirety of the gathered data was subjected to anonymity. Survey responses were not associated with any personal identification. The data was safely held on electronic devices that were password-protected. Participants were guaranteed that their answers would remain anonymous and would not be linked to them in any reports or publications. Participants were also notified about the potential advantages of the study, such as their contribution to a more comprehensive comprehension of leadership and resilience within small and medium-sized enterprises (SMEs).

3. Results and discussion

Table 1

Summary Table on Entrepreneurial Leadership

Key Result Areas	Composite Mean	VI	Rank
Visionary Leadership	3.51	Strongly Agree	3
Innovative Leadership	3.54	Strongly Agree	1
People's Skills	3.53	Strongly Agree	2
Grand Composite Mean	3.53	Strongly Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 1 summarizes the entrepreneurial leadership across the three dimensions explored: visionary leadership, innovative leadership, and people skills. A very strong leadership approach was presented by the composite mean of 3.53 (Strongly Agree); this means that the respondents consider all these three aspects to be their key strengths. By adopting this method, it is possible for an organization succeed in many conditions including some that are not so obvious being a dynamic or competitive landscape. Innovative leadership (3.54) ranks highest, highlighting the importance of fostering a culture of creativity and innovation within entrepreneurial ventures. Entrepreneurial leaders go beyond simply accepting the status quo. They actively seek out new ideas, encourage experimentation, and create an environment where calculated risks are encouraged. This adopts an environment where employees feel comfortable challenging assumptions, proposing new ideas, and experimenting with different approaches. Entrepreneurial leaders also understand that innovation is not a solo endeavor. They actively cultivate a collaborative work environment where diverse perspectives and expertise are valued and encouraged. By fostering open communication and teamwork, entrepreneurial leaders can tap into the collective creativity of their workforce and generate a steady stream of new ideas.

It is closely followed by people skills (3.53). Entrepreneurial ventures rely on the talent, creativity, and commitment of their employees. Leaders with strong people skills are adept at building strong relationships, fostering a supportive environment, and empowering their teams. As highlighted in Table 3, emotional intelligence is a vital aspect of people skills (Goleman et al., 2018). Leaders who understand and relate to the needs of their employees can create a more positive and productive work environment. This includes actively listening to employee concerns, providing constructive feedback, and recognizing and rewarding achievements. In the fast-paced and dynamic world of entrepreneurial ventures, disagreements are inevitable. However, leaders with strong emotional intelligence can foster open communication, identify the root causes of conflict, and find solutions that address the needs of all parties involved. This minimizes disruption within the team and ensures everyone remains focused on achieving shared goals. Furthermore, entrepreneurial leaders with strong people skills are adept at delegation and empowerment. They understand that micromanaging stifles creativity and initiative. Instead, they trust their employees to take ownership of their work and provide them with the

resources and support they need to be successful. This fosters a sense of accountability and ownership among employees, leading to increased motivation and engagement.

Visionary leadership (3.51) occupies the third position. While still scoring highly, it suggests that visionary leadership may be a developing area within this organization. Entrepreneurial leaders cast a clear vision for the future, one that inspires and motivates their teams (Fryer et al., 2021). This vision goes beyond simply outlining financial goals. It should connect with the values and aspirations of employees and stakeholders, fostering a sense of shared purpose and commitment. An effective vision acts as a north star for the organization, guiding strategic decision-making and inspiring employees to go the extra mile. Leaders who excel at visionary leadership are able to articulate a vision that is both ambitious and achievable. Furthermore, a compelling vision should resonate with the core values of the organization and the aspirations of its employees. By connecting the vision to a broader sense of purpose, leaders can cultivate a deep sense of commitment and ownership among their team members.

Table 2

Summary Table on Organizational Resilience

Key Result Areas	Composite Mean	VI	Rank
Relationship Resilience	3.55	Strongly Agree	2
Financial Resilience	3.54	Strongly Agree	3
Techno Resilience	3.57	Strongly Agree	1
Grand Composite Mean	3.55	Strongly Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Table 2 summarizes the organization's resilience across three key areas that are essential for withstanding challenges and disruptions. The grand composite mean of 3.55 shows that a company's capacity to withstand adversity is greatly enhanced by strong relationships with stakeholders, a solid financial basis and a reliable technology infrastructure. The highest indicator is technological resilience (3.57) which emerges as the organization's strongest pillar, implying a well-protected organization that can withstand and recover from technological disruption. Ghosh et al. (2019) explained that effective techno-resilience protects the organization against cyber attacks, system failures, or any other technology-related disruptions. Embracing techno-resilience is essential in today's digital age, where businesses heavily depend on technology to run normally; investing in such practices makes sure they will be able use their technological resources always and also guarantee its safety from threats. This is what enables them carry out their work smoothly while promoting creativity among employees leading them ahead among others.

The second in ranked is the relationship resilience (3.55) which reflects the strength of the organization's relationships with stakeholders, including customers, partners, and employees. Should there be strained relationships with partners, there are chances that supply chain might not be sustainable it collaboration might become a problem in case of disruptions. Investing in employee relations with mutual openness, recognition and belongingness among other ways can aid in creating a more dedicated and supportive workforce. The last in rank is financial resilience (3.54), the ability of an organization to withstand financial shocks in times of economic crisis and still continue operations. It is achievable by maintaining a safe financial cushion, relying on several sources of income at the same time and being prudent when it comes to spending money. Consequently, financial security means that even at times when there is economic recession an organization can squeeze through rough times economically and finally end up gaining from those adversities if handled well (Linnenluoma et al., 2018).

Table 3 summarizes the organization's overall learning capacity across three key result areas: Learning Orientation, Learning Infrastructure, and Learning Agility It reveals a high emphasis on adopting a culture of continuous learning and development, with a grand composite mean of 3.59. The highest-ranked is Learning Infrastructure (3.60). This indicates the organization has a well-developed ecosystem which assists in employee learning and development. This infrastructure likely includes a strong Learning Management System (LMS) that provides diverse forms of instruction and materials, aligned with the organization's strategic goals and

individual employee development plans (Farooq et al., 2020). Besides having an comprehensive LMS, organizations could have a good knowledge management system KMS which eases development, capture, retention and distribution of information across an organization as noted by Alavi et al.,(2018). A knowledge management system (KMS) can support and enhance knowledge-sharing between workers, foster creativity and provide a platform where employees can share their ideas, expertise, and experiences to the benefit of the organization. This means, it also involves mentorship schemes linking senior personnel to beginners and high fliers in an organization (Chao et al.,2019). Mentorship programs provide opportunities for skill development, career guidance, and knowledge transfer, all of which contribute to the organization's overall learning capacity.

Table 3

Summary Table on Organizational Learning

Key Result Areas	Composite Mean	VI	Rank
Learning Orientation	3.58	Strongly Agree	3
Learning Infrastructure	3.60	Strongly Agree	1
Learning Agility	3.59	Strongly Agree	2
Grand Composite Mean	3.59	Strongly Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49=Strongly Disagree

Following closely is the learning agility (3.59). This indicates a commitment to fostering a culture that embraces change, encourages experimentation, and values learning from mistakes. Adapting change as a substance for growth is a key aspect of learning agility is the ability to embrace to changes quickly and effectively. This requires a culture that is open-minded, flexible, and willing to embrace new ways of working. Leaders who communicate the rationale for new projects through speaking clearly in favor of them and regularly soliciting employee feedback can decrease opposition in reducing resistance and fostering buy-in. An organization may develop a safe environment where employees can test new approaches or thoughts even though there is no guarantee that these means will necessarily bring quick victories for instance setting up pilot project funds, opening innovation centers as well as organizing hackathons designed for generating ideas about these different challenges.

Allowing employees with the freedom to try new things and support to experiment, the organization able to develop a culture of creativity and innovation. This experimentation doesn't have to be limited to grand new ideas; it can also encompass encouraging employees to find new ways to improve existing processes or tackle everyday challenges. Learning from mistakes is vital critical aspect of learning agility is the willingness to learn from mistakes and failures. Organizations that foster a culture of psychological safety, where employees feel comfortable admitting mistakes and sharing lessons learned, can transform setbacks into valuable learning experiences (Edmondson, 2019). Leaders who acknowledge their own mistakes and share the learnings they gained set a powerful example for others. Open discussion of mistakes and failures helps us determine what needs improvement and put measures in place that prevent their repetition.

Lastly is the learning orientation (3.58). This reflects the organization's overall commitment to fostering a culture of continuous learning. According Hwang et al. (2018) commitment can manifest in a variety of ways. For example, the organization may encourage employees to view challenges as opportunities to learn and grow. This can be achieved by providing employees with opportunities to work on stretch assignments or new projects that take them outside their comfort zones. The organization can also support continuous learning by providing employees with access to professional development resources, such as training courses, conferences, and online learning platforms. Additionally, the organization can recognize and reward employees for their commitment to learning and development. This might involve creating incentive programs for employees who complete training courses or achieve professional certifications. By fostering a learning orientation throughout the organization, the organization can ensure that its employees have the skills and knowledge they need to be successful in their current roles and prepare for future challenges.

As seen in table 4, the computed rho-values ranging from 0.752 to 0.875 indicate a strong to very strong

direct relationship among the sub variables of entrepreneurial leadership and organizational resilience. There is a statistically significant relationship between entrepreneurial leadership and organizational resilience because the obtained p-values were less than 0.01. This result is an evidence that those organizations with leaders who display entrepreneurial characteristics are evidently more resilient. Visionary leaders, who can express the future state of the company in the most convincing way and entice engagement from interested parties enhance the resilience of relationships. Fostering a common vision and sense of purpose, visionary leaders strengthen the bonds within the organization and create a more collaborative and supportive environment. Meanwhile, innovative leaders who are adept at identifying and taking advantage of new opportunities contribute to all three aspects of organizational resilience: relationship, financial, and techno resilience. On the other hand, leaders with strong people skills are expert at building trust, motivating employees, and fostering a sense of psychological safety. As such, it helps to enhance the resilience of relationships by creating an environment that is more inclusive and supportive.

Table 4*Relationship Between Entrepreneurial Leadership and Organizational Resilience*

Variables	rho	p-value	Interpretation
Visionary Leadership			
Relationship Resilience	0.765**	< .001	Highly Significant
Financial Resilience	0.783**	< .001	Highly Significant
Techno Resilience	0.752**	< .001	Highly Significant
Innovative Leadership			
Relationship Resilience	0.777**	< .001	Highly Significant
Financial Resilience	0.840**	< .001	Highly Significant
Techno Resilience	0.768**	< .001	Highly Significant
People's Skills			
Relationship Resilience	0.826**	< .001	Highly Significant
Financial Resilience	0.875**	< .001	Highly Significant
Techno Resilience	0.773**	< .001	Highly Significant

** . Correlation is significant at the 0.01 level

As seen in table 5, the computed rho-values ranging from 0.717 to 0.788 indicate a strong direct relationship among the sub variables of entrepreneurial leadership and organizational learning. There was a statistically significant relationship between entrepreneurial leadership and organizational learning because the obtained p-values were less than 0.01. This indicate that entrepreneurial leaders, with their future-oriented mindset, openness to new ideas, and ability to build strong relationships, are well-positioned to drive organizational learning. Visionary leaders who are able to see future state and inspire commitment have the ability to lead in learning and stronger orientation for the organization. In order to achieve the goals of an organization through continuous learning, it is necessary for visionary leadership to instill to employees the aspiration for change and view mistakes as opportunities for growth. Furthermore, visionary leadership can contribute to a strong learning infrastructure by acquiring resources for training and development initiatives, and by promoting the creation and use of knowledge management systems. Visionary leadership can also enhance learning agility by encouraging employees to think critically about the future and adjust accordingly to change situations (Crossan et al., 2017).

Table 5*Relationship Between Entrepreneurial Leadership and Organizational Learning*

Variables	rho	p-value	Interpretation
Visionary Leadership			
Learning Orientation	0.755**	< .001	Highly Significant
Learning Infrastructure	0.717**	< .001	Highly Significant
Learning Agility	0.743**	< .001	Highly Significant
Innovative Leadership			
Learning Orientation	0.788**	< .001	Highly Significant
Learning Infrastructure	0.751**	< .001	Highly Significant
Learning Agility	0.777**	< .001	Highly Significant

People's Skills			
Learning Orientation	0.782**	< .001	Highly Significant
Learning Infrastructure	0.777**	< .001	Highly Significant
Learning Agility	0.759**	< .001	Highly Significant

***. Correlation is significant at the 0.01 level*

Innovative leaders create and nurture an all encompassing environment necessary for organization to learn in all its dimensions. Moreover, innovative leaders who promote a culture of experimentation and embrace risk taking enable their organizations to have a strong learning curve. Besides, taking into account the focus on innovation, an operative learning infrastructure will be needed so that workers can continuously get new resources and knowledge (Hwang et al.,2018). Leaders with strong people skills are better able to build trust, motivate employees, and create a psychologically safe environment where learning and knowledge sharing can flourish (Edmondson, 2019). This supportive environment fosters a strong learning orientation where employees feel comfortable taking risks, asking questions, and learning from their mistakes. Leaders who can effectively motivate and engage their employees are also more likely to have a workforce that is receptive to new learning initiatives and actively participates in learning infrastructure development through knowledge sharing and collaboration. Furthermore, strong people skills contribute to learning agility by encouraging employees to communicate openly, share ideas, and collectively adapt to challenges.

Table 6

Relationship Between Organizational Resilience and Organizational Learning

Variables	rho	p-value	Interpretation
Relationship Resilience			
Learning Orientation	0.779**	< .001	Highly Significant
Learning Infrastructure	0.784**	< .001	Highly Significant
Learning Agility	0.768**	< .001	Highly Significant
Financial Resilience			
Learning Orientation	0.809**	< .001	Highly Significant
Learning Infrastructure	0.792**	< .001	Highly Significant
Learning Agility	0.769**	< .001	Highly Significant
Techno Resilience			
Learning Orientation	0.793**	< .001	Highly Significant
Learning Infrastructure	0.761**	< .001	Highly Significant
Learning Agility	0.786**	< .001	Highly Significant

***. Correlation is significant at the 0.01 level*

As seen in the table, the computed rho-values ranging from 0.761 to 0.809 indicate a strong to very strong direct relationship among the sub- variables of organizational resilience and organizational learning. There was a statistically significant relationship between organizational resilience and organizational learning because the obtained p-values were less than 0.01. This indicates that organizations that are adept at learning and adapting are better positioned to anticipate and navigate challenges, thus strengthening their resilience. Conversely, resilient organizations that can effectively overcome obstacles are more likely to have the resources and stability to invest in continuous learning and development initiatives. By actively seeking new knowledge and encouraging experimentation, organizations can develop innovative solutions to challenges and build a more robust learning infrastructure that equips employees with the skills and resources they need to adapt to change. Furthermore, a focus on learning agility allows organizations to respond quickly and effectively to unexpected events, minimizing the negative impact on operations. Essential prerequisites for successful learning include promotion of knowledge sharing and collaboration in an organization through trust and openness in communication. Financial resilience provides organizations with the required resources to invest in training and development programs, as well as technology and tools that can increase the learning experience. Finally, techno-resilience guarantees that the organization has the technological infrastructure in place to provide a diversity of learning methods, such as knowledge management systems and other e-learning platforms.

Innovative Performance Framework

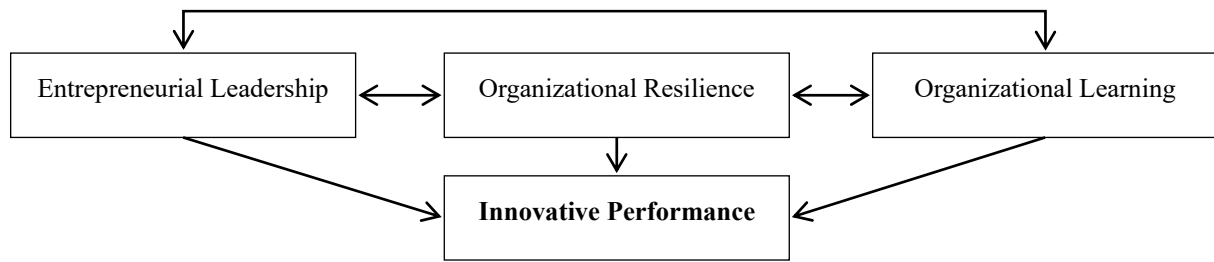


Figure 1: Innovative Performance Framework

An innovative performance framework results from the interplay and high significant relationships among entrepreneurial leadership, organizational resilience and organizational learning. Leaders with an entrepreneurial spirit are proactive, innovative and take risks. They encourage new ideas and experimentation, which can lead to the discovery of new opportunities and the development of innovative solutions. This promotes a culture of innovation within the organization. Resilient organizations are better equipped to deal with unexpected challenges and disruptions. They can adapt to changing environments and recover quickly from setbacks. This allows the organization to persevere through difficult times and continue to operate effectively.

Organizations that actively learn and innovate will continually seek to improve their processes, products and services. They encourage knowledge sharing and experimentation, which can lead to innovation. This continuous learning cycle allows the organization to keep up with progress and remain competitive. These three factors can work together to create a virtuous cycle that drives innovation performance. Entrepreneurial leadership promotes a culture of innovation and risk-taking. Organizational resilience allows the organization to adapt and experiment without fear of failure. Organizational learning enables the organization to capture and share the knowledge gained from these experiences, which in turn leads to further innovation.

A study by Lee et al., (2021) found that entrepreneurial leadership has a positive impact on organizational resilience and innovation. Moreover, Cabrera-Ruiz et al., (2020) shows that organizational learning is a key factor in developing organizational resilience. Automobile industries with an effective entrepreneurial leadership will be able to develop and launch new vehicle and use technologies faster. They respond more effectively to changes in consumer preferences and demands of the market. With these, the automotive industries may gain competitive edge over their competitors in the industry.

4. Conclusions and recommendations

The study revealed strong agreement on the entrepreneurial leadership as having visionary mindset, committed to innovation and have a strong people's skills. The respondents revealed strong agreement on the importance of relationship resilience, financial resilience and technology resilience for the organization leaders. The respondents showed strong agreement on their organizational learning as to learning orientation, infrastructure and agility that contributes to more innovative and dynamic organizations. A high significant relationship was evident among entrepreneurial leadership, organizational resilience and organizational learning. An innovative performance framework was developed for competitive edge among automotive industries. Automotive industry may concentrate on building strong leadership teams that represent the ideals of business leadership. This would entail concentrating on making visionary leaders who can spell out an enticing vision for the future, thus motivating employees to pursue greatness and have a common goal. Managers in automotive industry may prioritize building organizational resilience which may prioritize the improvement of technical resilience through investment in strong cybersecurity, securing operational systems and software as well as training staff members on how to act in the best possible way. HR managers in automotive industry may establish a continuous learning and development culture by developing a strong educational infrastructure

including an exhaustive learning content system and mentorship program. Automotive industries may adopt the innovative performance framework to improve their business operations. Future researchers may study the effectiveness of the innovative performance framework in other research locale with different culture within the automotive industry in order to analyze other factors that may influence innovation in the industry.

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