


**MODERATING ROLE OF COMMERCIAL CAPABILITIES ON FIRM PERFORMANCE  
THROUGH INNOVATIVE CAPABILITY IN MANUFACTURING MSMEs**

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ARTICLE INFO	<b>ABSTRACT</b>
<p><b>Article history:</b></p> <p>Received 01 July 2022</p> <p>Accepted 24 October 2022</p>	<p><b>Purpose:</b> Manufacturing MSMEs are in need to identify new ideas and work on ideas to implement them into their process to create new or improved products. Innovation management is a prerequisite and has a direct effect on a firm's performance. Innovation allows firms to secure a market position and create value by making new customers. This study attempts to find the relationship between innovative capabilities and the firm's performance in manufacturing MSMEs and how the commercial capabilities of the firm moderate the relationship.</p>
<p><b>Keywords:</b></p> <p>Innovation; Firm Performance; Micor; Small and Medium Enterprises (MSMEs); Manufacturing Capability; Marketing Capability.</p> <div data-bbox="172 1137 480 1384">  </div>	<p><b>Theoretical Framework:</b> Several studies have been reviewed to identify the relationship between innovation, firm performance, and commercial capabilities. A necessitated gap in the literature was identified and the factors were established.</p> <p><b>Design/Methodology/approach:</b> This study was done among the manufacturing MSMEs in India. A structured questionnaire was circulated to the top performing MSMEs in every state of India and the responses were collected through email. A total of 384 responses were collected at the end of the data collection period. The scale of the measure was adopted and it has measured reliability and validity scores to get to be used in this study.</p> <p><b>Findings:</b> The results of the study showed that the innovative capability of manufacturing MSMEs has a significant positive relationship with the firm's performance. The moderation analysis showed that the manufacturing capability and marketing capability significantly moderate the relationship between innovative capability and a firm's performance.</p> <p><b>Research, Practical &amp; Social Implications:</b> This study provides the managers of the manufacturing MSMEs to rely on investment in innovation however they are moderately influenced by networking, R&amp;D, and commercial capabilities of the business.</p> <p><b>Originality/Value:</b> Contributes to the existing body of knowledge theoretically and empirically by including diverse demographic respondents the results obtained were unique and universally applicable.</p>
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## PAPEL MODERADOR DE CAPACIDADES COMERCIAIS SOBRE O DESEMPENHO DO FOGO ATRAVÉS DE CAPACIDADES INOVADORAS EM MESMAS FABRICANTES

### RESUMO

**Objetivo:** Fabricar MPMEs precisam identificar novas idéias e trabalhar em idéias para implementá-las em seu processo de criação de produtos novos ou melhorados. A gestão da inovação é um pré-requisito e tem um efeito direto sobre o desempenho de uma empresa. A inovação permite às empresas assegurar uma posição de mercado e criar valor ao fazer novos clientes. Este estudo tenta encontrar a relação entre as capacidades inovadoras e o desempenho da empresa na fabricação de MPMEs e como as capacidades comerciais da empresa moderam a relação.

**Estrutura Teórica:** Vários estudos foram revisados para identificar a relação entre inovação, desempenho da empresa e capacidades comerciais. Uma lacuna necessária na literatura foi identificada e os fatores foram estabelecidos.

**Design/Metodologia/abordagem:** Este estudo foi feito entre as MPMEs de manufatura na Índia. Um questionário estruturado foi distribuído para as MPMEs de maior desempenho em todos os estados da Índia e as respostas foram coletadas por e-mail. Um total de 384 respostas foi coletado no final do período de coleta de dados. A escala da medida foi adotada e mediu a confiabilidade e as notas de validade para poder ser usada neste estudo.

**Conclusões:** Os resultados do estudo mostraram que a capacidade inovadora de fabricação de MPMEs tem uma relação positiva significativa com o desempenho da empresa. A análise da moderação mostrou que a capacidade de fabricação e a capacidade de marketing moderam significativamente a relação entre a capacidade inovadora e o desempenho de uma empresa.

**Pesquisa, Implicações Práticas e Sociais:** Este estudo proporciona aos gerentes das MPMEs de manufatura a confiança no investimento em inovação, porém são moderadamente influenciados pelo networking, P&D e capacidades comerciais da empresa.

**Originalidade/Valor:** Contribui para o corpo de conhecimento existente teórica e empiricamente, ao incluir diversos respondentes demográficos, os resultados obtidos foram únicos e universalmente aplicáveis.

**Palavras-chave:** Inovação, Desempenho da Empresa, Micor, Pequenas e Médias Empresas (MSMEs), Capacidade de Fabricação, Capacidade de Marketing.

## PAPEL MODERADOR DE LAS CAPACIDADES COMERCIALES EN EL RENDIMIENTO DE LA EMPRESA A TRAVÉS DE LA CAPACIDAD DE INNOVACIÓN EN LAS MMS DE FABRICACIÓN

### RESUMEN

**Objetivo:** Las MIPYMES manufactureras necesitan identificar nuevas ideas y trabajar en ellas para aplicarlas en su proceso de creación de productos nuevos o mejorados. La gestión de la innovación es un requisito previo y tiene un efecto directo en los resultados de una empresa. La innovación permite a las empresas asegurarse una posición en el mercado y crear valor haciendo nuevos clientes. Este estudio trata de encontrar la relación entre las capacidades innovadoras y el rendimiento de las empresas en la industria manufacturera de las mipymes y cómo las capacidades empresariales de las empresas moderan la relación.

**Marco teórico:** Se han revisado varios estudios para identificar la relación entre la innovación, el rendimiento de la empresa y las capacidades empresariales. Se identificó una brecha necesaria en la literatura y se establecieron los factores.

**Diseño/Metodología/Enfoque:** Este estudio se realizó entre las MIPYMES manufactureras de la India. Se distribuyó un cuestionario estructurado a las MIPYMES de mayor rendimiento en todos los estados de la India y las respuestas se recogieron por correo electrónico. Al final del periodo de recogida de datos se recogieron 384 respuestas. Se adoptó la escala de medición y se midieron las puntuaciones de fiabilidad y validez para poder utilizarla en este estudio.

**Conclusiones:** Los resultados del estudio mostraron que la capacidad de fabricación innovadora de las mipymes tiene una relación positiva significativa con el rendimiento de la empresa. El análisis de moderación mostró que la capacidad de fabricación y la capacidad de marketing moderan significativamente la relación entre la capacidad innovadora y el rendimiento de la empresa.

**Implicaciones prácticas, sociales y de investigación:** Este estudio proporciona a los gerentes de las MIPYMES manufactureras confianza para invertir en innovación, aunque están moderadamente influenciados por las redes, la I+D y las capacidades empresariales de la empresa.

**Originalidad/Valor:** Contribuye al cuerpo de conocimiento existente teórica y empíricamente, al incluir diversos encuestados demográficos, los resultados obtenidos fueron únicos y universalmente aplicables.

**Palabras clave:** Innovación, Rendimiento de la Empresa, Micor, Pequeñas y Medianas Empresas (MIPYMES), Capacidad de Fabricación, Capacidad de Comercialización.

## INTRODUCTION

Businesses must increase their capacity for innovation in an era of increased competition and digitization(Bouwman et al., 2019). They must develop innovative strategies that will allow them to launch and execute projects with varying degrees, speeds, and forms of innovation. Being creative requires more than just having fantastic ideas(Galbraith, 1982). It entails putting procedures and people in place inside your organization to turn good ideas into reality.

Innovation is critical to the economy's development and prosperity, and it is especially important in the industrial sector. After all, it increases productivity, efficiency, and development(Lundvall, 2007). Typically, innovation means searching out something better, finding weaknesses and devising cures, or simplifying an existing plan. The manufacturing sector is always developing, from new technology development to Industry 4.0; as a result, producers must constantly come up with new ideas to stay relevant and ahead of the competition(Hobday, 2007).

One can increase the chances of meeting client demands by providing better and more innovative goods and services, which may result in increased sales and profitability. Because it allows organizations to be more adaptive to market changes, innovation is a forerunner to increased productivity and lower costs(Grewal et al., 2009; Zeithaml et al., 2001).

Continuous manufacturing innovation can provide you with a competitive advantage by achieving the following goals: improved product design and quality; increased potential for a broader product range; streamlined relationships with suppliers and customers; increased responsiveness to customer demands; faster turnaround times; and reduced waste levels and downtime(Chahal & Bakshi, 2015; Gunasekaran et al., 2008; Netland & Aspelund, 2013).

Manufacturing innovation may take numerous forms, ranging from new technology and supply chain modifications to product and process improvements. Businesses benefit much from innovation, and it is frequently required to exceed the competition(Duane Ireland & Webb, 2007). These advancements will result in highly intelligent, data-driven factories and distributed business models capable of quickly adapting to change and providing entirely new customized smart goods and services.

With 48 million Micro Small and Medium Enterprises (MSMEs), India is second only to China, which has more than 50 million. MSMEs in India create 31.7% of all items produced

in the country, and if given the correct support, they have the potential to promote industrial expansion throughout the country(Ghoshal, 2018).

In India, Microbusinesses are those with yearly revenues of less than Rs 5 crore and investments of less than Rs 1 crore. Any "Small" firm has an investment of up to Rs 10 crore and yearly revenues of up to Rs 50 crore. Any "Medium" firm has an investment of up to Rs 20 crore and a yearly turnover of less than Rs 100 crore(Bhattacharya & Londhe, 2014).

MSMEs have been accused of being trapped in an obsolete technological era. They may develop quickly if they have access to the internet, resources, virtual skilled labor, and consumer prospects. They now recognize that cultural and technological innovation may serve as important development drivers(thesis et al., n.d.).

Having commercial capabilities means having the financial and other resources to assure the timely completion of all activities required for the product's commercialization(C. Lee et al., 2001a). Innovative, next-generation commercial abilities are required for a manufacturing business to handle dramatic transitions in global marketplaces. As a result of the fast-changing environment in which they operate, innovators face the simultaneous difficulties of increasing commercial complexity and accompanying expensive expenses(Radnejad et al., 2017).

This study tries to investigate the relationship between the innovative capability of MSMEs and its effect on the firm performance and to identify how the commercial capabilities of the MSMEs moderate the relationship.

## **THEORETICAL REFERENCE FRAMEWORK**

### ***Firm performance***

Many innovative organizations have modified their approach to finding new ideas, adopting open search strategies that require the use of a diverse variety of external players and sources to help them achieve and sustain innovation(Laursen & Salter, 2006). Small business success in hostile circumstances was associated with an organic structure, an entrepreneurial strategic position, and a competitive profile characterized by a long-term orientation, high product pricing, and concern for anticipating industry trends(Covin & Slevin, 1989). On the other hand, a mechanistic structure, a cautious strategic stance, a competitive profile characterized by cautious financial management and short-term financial orientation, an emphasis on product refinement, and a willingness to rely heavily on single customers were all positively related to performance(Moghaddam et al., 2016; Yang et al., 2014).

### ***Innovative capability in MSMEs***

The organization must have the procedures and knowledge in place to turn good ideas into action(Aas & Breunig, 2017). In an increasingly competitive global economy, innovation may be viewed as a vital success factor. Market orientation, technological orientation, and innovation strategy all influence a company's innovative capabilities(Akman & Yilmaz, 2011). Learning orientation is thought to be a second-order concept. It has an impact on business performance due to its impact on corporate innovation(Calantone et al., 2002).

### ***The commercial capability of MSMEs***

Even though product and process innovation needs radical and/or incremental skills to compete successfully, firms are likely to have core competencies that are either product- or process-focused(Sen & Egelhoff, 2000). Whereas competitive orientation is just concerned with exploitative abilities, customer orientation is concerned with both exploitative and explorative abilities. Exploitative capabilities have an impact on present performance, whereas explorative capabilities have an impact on future performance(Lisboa et al., 2011).

### ***Innovative capability and firm performance of MSMEs***

Performance as evaluated by returns on assets is mostly correlated favorably with innovative capability(Sher & Yang, 2005). Absorbent and adaptable skills have the greatest influence on performance results, with inventive skills having the least influence(Biedenbach & Müller, 2012). (Gunday et al., 2011) investigated how organizational, process, product, and marketing innovations impact a range of corporate performance measures, such as financial, innovative, production, and market results. According to the study, innovations enhance industrial sector company success. Non-technological innovation (organizational and marketing innovation) has no significant and positive impact on corporate success, but technical innovation (new items and processes) does(Atalay et al., 2013).

### ***Commercial capability, innovation, and firm performance in MSME***

Innovative outcomes of MSMEs in local economies with low levels of R&D and technical activity, where traditional measurements of technological innovation do not give adequate data(Martínez-Román et al., 2011). MSMEs' innovative capacities are significantly influenced by the level of collaborative linkages across a range of productive activities along the value chain. This is true for both product and process innovation(Tomlinson & Fai, 2013). New components should be introduced to the existing competitive environment of MSMEs to

enhance the balance in three separate areas: the commercial and economic dimensions, demographic transitions, and new technological scenarios (Mauri-Castello et al., 2019).

Based on the literature review, the following hypotheses were developed.

H1: There is a relationship between innovative capability and a firm's performance.

H2: Commercial capabilities moderates the relationship between innovative capability and a firm's performance

## **METHOD**

The questionnaire was sent to randomly chosen Indian Manufacturing MSMEs across states and Union territories through email. The email was carefully constructed to obtain the highest number of responses considering the studies (Cobanoglu et al., 2022; Hansen & Hurwitz, 1946; Kent & Brandal, 2018). The managers or owners of the company who have authority over innovation, firm performance, and business commerciality are the study's target demographic. After two reminders in 15-day intervals, 384 (1032) valid responses were collected, with a response rate of 37.2% significant enough for multivariate analysis (Baruch & Holtom, 2008). AMOS was used to examine validity and reliability, while SPSS Process macro was utilized to examine moderation.

The tool for the survey was adopted from the study of (Kim et al., 2018). Innovative capability included top management leadership as discussed in the studies (Bantel & Jackson, 1989; Damanpour & Schneider, 2006; Smith & Tushman, 2005), external networking as discussed in the studies (Freeman, 1991; Lechner & Dowling, 2010a; Pittaway et al., 2004) organizational rigidity and insufficient resources as studied by (Chan et al., 2019; Latham & Braun, 2008; Tourigny & Le, 2010). Commercialization capabilities included manufacturing capabilities as discussed in the studies by (Baines et al., 2009; Ghobakhloo, 2018; Ulaga & Reinartz, 2011) and marketing capabilities as discussed in the studies of (Keskin, 2006; Rust et al., 2018; Vorhies & Morgan, 2018). The firm's performance evaluated in this study is discussed in the studies of (Oke et al., 2007; Rosenbusch et al., 2011; Zeng et al., 2010). The measures were studied using a five-point Likert scale as suggested by (Allen & Seaman, 2007; Dawes, 2008).



## RESULTS

### *Demographic classification*

Table 1: Profile of the respondents (N=384)

No	Demographic Variable	Frequency	%	No	Demographic Variable	Frequency	%
<b>1</b>	<b>Company size</b>			<b>3</b>	<b>Years of operation</b>		
	Micro	172	44.79		Less than 5 years	81	21.09
	Small	125	32.55		5 – 10 Years	53	13.80
	Medium	87	22.66		10-15 Years	114	29.69
<b>2</b>	<b>Age Group of respondent</b>				15- 20 Years	64	16.67
	Under 30	58	15.10		Above 20 years	72	18.75
	30-40	145	37.76				
	40-50	92	23.96				
	Over 50	89	23.18				

From Table 1, it is inferred that the respondents are reasonably well divided throughout the demographic variables. The majority of the respondents are from Micro organizations (44.49%) and in the age group of 30-40 (37.96) and their business operation at maximum at 10-15 years (29.69%).

### *Measurement model Evaluation*

Table 2. Measurement model Evaluation (CFA)

Latent construct	Cronbach's alpha	Average variance extracted	Composite reliability	Correlation
<b>Innovative capability</b>				
Top Management Leadership	0.856	0.765	0.815	0.714
External Networking	0.853	0.748	0.841	0.759
Organizational rigidity	0.912	0.726	0.862	0.741
Insufficient resources	0.804	0.751	0.830	0.723
<b>Commercialization capability</b>				
Manufacturing capability	0.857	0.748	0.807	0.821
Marketing capability	0.894	0.812	0.851	0.706
<b>Firm Performance</b>	0.862	0.804	0.819	0.775

Validity of the measurement model is measured through confirmatory factor analysis using the AMOS package, Table 2 shows that the values of Composite reliability of each variable are greater than 0.80 and the Average Variance Extracted (AVE) is higher than 0.60 which met the critical values as suggested by (Fornell & Larcker, 2018). The Cronbach's alpha ranged between 0.80 and 0.90 which is above the cut-off point and considered good according to (Bonett & Wright, 2015)

### Evaluation of structural model

Regression values were obtained from the path analysis using AMOS to the relationship among the constructs.

H1: There is a relationship between innovative capability and a firm's performance.

Table 3. The goodness of fit measures

The goodness of fit measures	CFA Model	SEM Model
<i>The basic goodness of fit</i>		
Chi-square	185.526	186.245
Degrees of freedom	385	385
<i>Absolute fit index</i>		
Chi-square/degrees of freedom	1.421	1.425
RMSEA	0.041	0.046
GFI	0.805	0.811
AGFI	0.901	0.916
CFI	0.941	0.954
RMR	0.043	0.031
SRMR	0.024	0.003

RMR < 0.08, RMSEA < 0.08, CFI > 0.95, GFI > 0.90, AGFI > 0.90, SRMR < 0.05.

Table 4. Evaluation of the Structural model (SEM)

Relationship	Standardized regression weight	Standardized estimates	p-value	Squared multiple correlation coefficient	Hypothesis test result
IC → FP	0.712	0.168	0.00*	0.862	Accept hypothesis

\*Significance at p<0.05

From table 3 it is evident that the model for CFA and the SEM is as the values were found to fit according to (Gignac et al., 2006; Shek & Yu, 2014)

Table 4, reveals that the relationship between the Innovation capability and the firm's performance is significant (P<0.05), and overall, 86% of the variance of firm performance shall be explained by the innovation capability of the MSME.

### Evaluation of Moderation

H2: Commercial capabilities moderate the relationship between innovative capability and a firm's performance.

H2a: Manufacturing capabilities moderates the relationship between innovative capability and a firm's performance.

H2b: Marketing capabilities moderates the relationship between innovative capability and a firm's performance.



The moderating role of commercial capabilities with the innovative capability and firm's performance is analyzed using Hayes process Macros in SPSS (A. Hayes, 2012; A. F. Hayes et al., 2017)

Table 5. Evaluation of the Moderation model summary

	<b>Coeff</b>	<b>T</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>
<b>Constant</b>	0.7142	0.5841	0.0000	0.1411	0.2478
<b>IC</b>	0.7541	0.3654	0.0000	0.3240	0.1492
<b>FP</b>	0.1785	0.1358	0.0005	0.8958	0.7267
<b>Int1</b>	0.5367	0.2784	0.0027	0.2621	0.0648
Int1: IC*MAP					

Table 6. Conditional effect of Moderation model

CB AIS	Effect	P
-0.7952	0.4152	0.0211
0.0000	0.6548	0.0000
0.7952	0.1256	0.0000

Table 5 and Table 6 show that there is an interaction between the innovative capability and the firm's performance and when manufacturing capability is adopted it accounted for a significant variance of  $p < 0.05$ . Considering the co-efficient value of Int1 it can be inferred that there is a strong positive impact of manufacturing capability on the firm's performance through innovative capabilities in the manufacturing MSMEs. There is a conditional influence of innovation capability on a firm's performance alters as a result of the adoption of manufacturing capabilities.

Table 7. Evaluation of the Moderation model summary

	<b>Coeff</b>	<b>T</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>
<b>Constant</b>	0.7691	0.5268	0.0000	0.1248	0.2697
<b>IC</b>	0.7482	0.3754	0.0000	0.3691	0.1728
<b>FP</b>	0.1623	0.1248	0.0000	0.8124	0.7149
<b>Int2</b>	0.5812	0.2684	0.0002	0.2158	0.0214
Int2: IC*MARP					

Table 8. Conditional effect of Moderation model

CB AIS	Effect	P
-0.7237	0.4105	0.0248
0.0000	0.6953	0.0021
0.7237	0.1856	0.0000

Table 7 and Table 8 show that there is an interaction between the innovative capability and the firm's performance and when marketing capability is adopted it accounted for a significant variance of  $p < 0.05$ . Considering the co-efficient value of Int2 it can be inferred that there is a strong positive impact of marketing capability on the firm's performance through

innovative capabilities in the manufacturing MSMEs. There is a conditional influence of innovation capability on a firm's performance alters as a result of the adoption of marketing capabilities.

Based on the findings we could conclude that commercial capabilities have a substantial influence on the manufacturing MSMEs through manufacturing capabilities of R&D and employing new advanced technologies and through marketing capabilities of customer relation, market knowledge, sales, and services.

## **DISCUSSION**

Firstly, the results of the study show that the firm's performance is significantly affected by the innovation capability of manufacturing MSMEs. This result is consistent with the previous studies (Calantone et al., 2002; Knight & Cavusgil, 2004; C. Lee et al., 2001b). Few studies analyzed the external networking factor to have no support from top management (Romijn & Albaladejo, 2002) however few studies have provided the requirement for socio-centric networks (Lechner & Dowling, 2010b). Some studies have proved empirically that organizational innovation will lead to superior firm performance (Camisón & Villar-López, 2014; K. H. Lee & Min, 2015). However, further research is needed to realize the impact of innovation through the factors of management support, networking, rigidity, and resource availability on the firm performance.

Secondly, the results from the moderation analysis show that collective commercial capabilities (manufacturing and marketing capabilities) showed a positive influence on the relationship between firm performance and innovative capability. Similar studies relating innovation capability and a firm's performance were done by (Saunila et al., 2014; Turulja & Bajgoric, 2019; Ur Rehman et al., 2021) considering environment turbulence, intellectual capital, and measurement. However, commercial capability including the manufacturing and marketing capabilities has a huge impact on the innovative capability which is likely to affect the firm's performance. Manufacturing MSMEs are found to have a stronger impact on innovation as they are lacking in their internal skills.

### ***Managerial Implication***

Managerial recommendations for the Manufacturing MSMEs to develop innovation are by relying continuous investment on innovative capabilities to improve their performance in the long run. Networking will complement R&D and technological innovation as there is a lack

of resources. Commercial capabilities interaction through manufacturing and marketing capabilities will improve the relationship between innovative capability and firm performance.

### **Conclusion**

Innovation plays a crucial role in economic success and growth, and it is especially important in the manufacturing sector. Innovation in manufacturing may take different forms, from new technology and changes in the supply chain to product and process improvements. Businesses frequently need innovation to respond to change and meet its challenges. The fundamental objective of innovation in marketing is to discover new markets which will ultimately lead to an increase in sales and profitability of the firm. This study tried to understand the relationship between the innovation capability of manufacturing MSMEs and the firm's performance. Further, this study empirically identified that commercial capabilities like manufacturing and marketing directly influence the relationship between innovation capability and a firm's performance in manufacturing MSMEs.

### **Originality/value**

This study contributes to the body of knowledge in the field of innovation management, performance analysis, and influence on manufacturing and marketing capability by providing an addition to the existing theory and model. This study covered various demographics and the results are unique and shall be universally applied. There is further scope for applying this research in the service and large manufacturing industries.

### **REFERENCES**

- Aas, T. H., & Breunig, K. J. (2017). Conceptualizing innovation capabilities: A contingency perspective. *Journal of Entrepreneurship, Management and Innovation*, 13(1), 7–24. <https://doi.org/10.7341/20171311>
- Akman, G., & Yilmaz, C. (2011). INNOVATIVE CAPABILITY, INNOVATION STRATEGY AND MARKET ORIENTATION: AN EMPIRICAL ANALYSIS IN TURKISH SOFTWARE INDUSTRY. *Http://Dx.Do.Org/10.1142/S1363919608001923*, 12(1), 69–111. <https://doi.org/10.1142/S1363919608001923>
- Allen, I. E., & Seaman, C. A. (2007). Likert scales and data analyses. *Quality Progress*, 40(7), 64–65.
- Atalay, M., Anafarta, N., & Sarvan, F. (2013). The Relationship between Innovation and Firm Performance: An Empirical Evidence from Turkish Automotive Supplier Industry. *Procedia - Social and Behavioral Sciences*, 75, 226–235. <https://doi.org/10.1016/J.SBSPRO.2013.04.026>

- Baines, T. S., Lightfoot, H. W., Benedettini, O., & Kay, J. M. (2009). The servitization of manufacturing: A review of literature and reflection on future challenges. *Journal of Manufacturing Technology Management*, 20(5), 547–567. <https://doi.org/10.1108/17410380910960984/FULL/XML>
- Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10(S1), 107–124. <https://doi.org/10.1002/SMJ.4250100709>
- Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research: <https://doi.org/10.1177/0018726708094863>, 61(8), 1139–1160. <https://doi.org/10.1177/0018726708094863>
- Bhattacharya, S., & Londhe, B. R. (2014). Micro Entrepreneurship: Sources of Finance & Related Constraints. *Procedia Economics and Finance*, 11, 775–783. [https://doi.org/10.1016/S2212-5671\(14\)00241-X](https://doi.org/10.1016/S2212-5671(14)00241-X)
- Biedenbach, T., & Müller, R. (2012). Absorptive, innovative and adaptive capabilities and their impact on project and project portfolio performance. *International Journal of Project Management*, 30(5), 621–635. <https://doi.org/10.1016/J.IJROMAN.2012.01.016>
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3–15. <https://doi.org/10.1002/JOB.1960>
- Bouwman, H., Nikou, S., & de Reuver, M. (2019). Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs? *Telecommunications Policy*, 43(9), 101828. <https://doi.org/10.1016/J.TELPOL.2019.101828>
- Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management*, 31(6), 515–524. [https://doi.org/10.1016/S0019-8501\(01\)00203-6](https://doi.org/10.1016/S0019-8501(01)00203-6)
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891–2902. <https://doi.org/10.1016/J.JBUSRES.2012.06.004>
- Chahal, H., & Bakshi, P. (2015). Examining intellectual capital and competitive advantage relationship: Role of innovation and organizational learning. *International Journal of Bank Marketing*, 33(3), 376–399. <https://doi.org/10.1108/IJBM-07-2013-0069/FULL/XML>
- Chan, C. M. L., Teoh, S. Y., Yeow, A., & Pan, G. (2019). Agility in responding to disruptive digital innovation: Case study of an SME. *Information Systems Journal*, 29(2), 436–455. <https://doi.org/10.1111/ISJ.12215>
- Cobanoglu, C., Nanu, L., Ciftci, O., Berezina, K., Cavusoglu, M., & Ali, F. (2022). Embedded Questions in Online Survey Email Invitations: The Impact on Response Rate and Quality. *Contemporary Research Methods in Hospitality and Tourism*, 77–94. <https://doi.org/10.1108/978-1-80117-546-320221006>

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75–87. <https://doi.org/10.1002/SMJ.4250100107>

Damanpour, F., & Schneider, M. (2006). Phases of the Adoption of Innovation in Organizations: Effects of Environment, Organization and Top Managers<sup>1</sup>. *British Journal of Management*, 17(3), 215–236. <https://doi.org/10.1111/J.1467-8551.2006.00498.X>

Dawes, J. (2008). Do Data Characteristics Change According to the Number of Scale Points Used? An Experiment Using 5-Point, 7-Point and 10-Point Scales: <https://doi.org/10.1177/147078530805000106>, 50(1), 61–77. <https://doi.org/10.1177/147078530805000106>

Duane Ireland, R., & Webb, J. W. (2007). Strategic entrepreneurship: Creating competitive advantage through streams of innovation. *Business Horizons*, 50(1), 49–59. <https://doi.org/10.1016/J.BUSHOR.2006.06.002>

Fornell, C., & Larcker, D. F. (2018). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics: <https://doi.org/10.1177/002224378101800313>, 18(3), 382–388. <https://doi.org/10.1177/002224378101800313>

Freeman, C. (1991). Networks of innovators: A synthesis of research issues. *Research Policy*, 20(5), 499–514. [https://doi.org/10.1016/0048-7333\(91\)90072-X](https://doi.org/10.1016/0048-7333(91)90072-X)

Galbraith, J. R. (1982). Designing the innovating organization. *Organizational Dynamics*, 10(3), 5–25. [https://doi.org/10.1016/0090-2616\(82\)90033-X](https://doi.org/10.1016/0090-2616(82)90033-X)

Ghobakhloo, M. (2018). The future of manufacturing industry: a strategic roadmap toward Industry 4.0. *Journal of Manufacturing Technology Management*, 29(6), 910–936. <https://doi.org/10.1108/JMTM-02-2018-0057/FULL/XML>

Ghoshal, M. (2018). Trade performance of India & China in MSME (Micro, Small & Medium Enterprises) Sector: A Case Study. *Asia Pacific Journal of Business Review*, 2(2), 45–59. <https://doi.org/10.20522/APJBR.2018.2.2.45>

Gignac, G. E., Palmer, B., Bates, T., & Stough, C. (2006). Differences in confirmatory factor analysis model close-fit index estimates obtained from AMOS 4.0 and AMOS 5.0 via full information maximum likelihood – no imputation: Corrections and extension to Palmer et al. (2003). *Australian Journal of Psychology*, 58(3), 144–150. <https://doi.org/10.1080/00049530500504088>

Grewal, D., Levy, M., & Kumar, V. (2009). Customer Experience Management in Retailing: An Organizing Framework. *Journal of Retailing*, 85(1), 1–14. <https://doi.org/10.1016/J.JRETAI.2009.01.001>

Gunasekaran, A., Lai, K. hung, & Edwin Cheng, T. C. (2008). Responsive supply chain: A competitive strategy in a networked economy. *Omega*, 36(4), 549–564. <https://doi.org/10.1016/J.OMEGA.2006.12.002>

Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production Economics*, 133(2), 662–676. <https://doi.org/10.1016/J.IJPE.2011.05.014>

Hansen, M. H., & Hurwitz, W. N. (1946). The Problem of Non-Response in Sample Surveys. *Journal of the American Statistical Association*, 41(236), 517–529. <https://doi.org/10.1080/01621459.1946.10501894>

Hayes, A. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. <http://www.claudiaflowers.net/rsch8140/Hayesprocess.pdf>

Hayes, A. F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and their contingencies: PROCESS versus structural equation modeling. *Australasian Marketing Journal (AMJ)*, 25(1), 76–81. <https://doi.org/10.1016/J.AUSMJ.2017.02.001>

Hobday, M. (2007). Firm-level Innovation Models: Perspectives on Research in Developed and Developing Countries. <Http://Dx.Doi.Org/10.1080/09537320500088666>, 17(2), 121–146. <https://doi.org/10.1080/09537320500088666>

Kent, R., & Brandal, H. (2018). Improving Email Response in a Permission Marketing Context: <Https://Doi.Org/10.1177/147078530304500404>, 45(4). <https://doi.org/10.1177/147078530304500404>

Keskin, H. (2006). Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model. *European Journal of Innovation Management*, 9(4), 396–417. <https://doi.org/10.1108/14601060610707849/FULL/XML>

Kim, M. K., Park, J. H., & Paik, J. H. (2018). Factors influencing innovation capability of small and medium-sized enterprises in Korean manufacturing sector: facilitators, barriers and moderators. *International Journal of Technology Management*, 76(3/4), 214. <https://doi.org/10.1504/IJTM.2018.091286>

Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2), 124–141. <https://doi.org/10.1057/PALGRAVE.JIBS.8400071/TABLES/2>

Latham, S. F., & Braun, M. (2008). Managerial Risk, Innovation, and Organizational Decline: <Https://Doi.Org/10.1177/0149206308321549>, 35(2), 258–281. <https://doi.org/10.1177/0149206308321549>

Laursen, K., & Salter, A. (2006). Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, 27(2), 131–150. <https://doi.org/10.1002/SMJ.507>

Lechner, C., & Dowling, M. (2010a). Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms. <Http://Dx.Doi.Org/10.1080/08985620210159220>, 15(1), 1–26. <https://doi.org/10.1080/08985620210159220>



- Lechner, C., & Dowling, M. (2010b). Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms. *Http://Dx.Doi.Org/10.1080/08985620210159220*, 15(1), 1–26. <https://doi.org/10.1080/08985620210159220>
- Lee, C., Lee, K., & Pennings, J. M. (2001a). Internal capabilities, external networks, and performance: a study on technology-based ventures. *Strategic Management Journal*, 22(6–7), 615–640. <https://doi.org/10.1002/SMJ.181>
- Lee, C., Lee, K., & Pennings, J. M. (2001b). Internal capabilities, external networks, and performance: a study on technology-based ventures. *Strategic Management Journal*, 22(6–7), 615–640. <https://doi.org/10.1002/SMJ.181>
- Lee, K. H., & Min, B. (2015). Green R&D for eco-innovation and its impact on carbon emissions and firm performance. *Journal of Cleaner Production*, 108, 534–542. <https://doi.org/10.1016/J.JCLEPRO.2015.05.114>
- Lisboa, A., Skarmeas, D., & Lages, C. (2011). Innovative capabilities: Their drivers and effects on current and future performance. *Journal of Business Research*, 64(11), 1157–1161. <https://doi.org/10.1016/J.JBUSRES.2011.06.015>
- Lundvall, B. Å. (2007). National Innovation Systems—Analytical Concept and Development Tool. *Http://Dx.Doi.Org/10.1080/13662710601130863*, 14(1), 95–119. <https://doi.org/10.1080/13662710601130863>
- Martínez-Román, J. A., Gamero, J., & Tamayo, J. A. (2011). Analysis of innovation in SMEs using an innovative capability-based non-linear model: A study in the province of Seville (Spain). *Technovation*, 31(9), 459–475. <https://doi.org/10.1016/J.TECHNOVATION.2011.05.005>
- Mauri-Castello, J., Alonso-Gonzalez, A., & Peris-Ortiz, M. (2019). Applied Innovation Methodology: A Proposal for a Dynamic Sustainable Environment for the Generation of Innovation and Knowledge Management Practices in SMEs. *Innovation, Technology and Knowledge Management*, 61–76. [https://doi.org/10.1007/978-3-319-74881-8\\_5/COVER](https://doi.org/10.1007/978-3-319-74881-8_5/COVER)
- Moghaddam, K., Bosse, D. A., & Provance, M. (2016). Strategic Alliances of Entrepreneurial Firms: Value Enhancing Then Value Destroying. *Strategic Entrepreneurship Journal*, 10(2), 153–168. <https://doi.org/10.1002/SEJ.1221>
- Netland, T. H., & Aspelund, A. (2013). Company-specific production systems and competitive advantage: A resource-based view on the Volvo production system. *International Journal of Operations and Production Management*, 33(11), 1511–1531. <https://doi.org/10.1108/IJOPM-07-2010-0171/FULL/XML>
- Oke, A., Burke, G., & Myers, A. (2007). Innovation types and performance in growing UK SMEs. *International Journal of Operations and Production Management*, 27(7), 735–753. <https://doi.org/10.1108/01443570710756974/FULL/XML>
- Pittaway, L., Robertson, M., Munir, K., Denyer, D., & Neely, A. (2004). Networking and innovation: a systematic review of the evidence. *International Journal of Management*

*Reviews*, 5–6(3–4), 137–168. <https://doi.org/10.1111/J.1460-8545.2004.00101.X>

Radnejad, A. B., Vredenburg, H., & Woiceshyn, J. (2017). Meta-organizing for open innovation under environmental and social pressures in the oil industry. *Technovation*, 66–67, 14–27. <https://doi.org/10.1016/J.TECHNOVATION.2017.01.002>

Romijn, H., & Albaladejo, M. (2002). Determinants of innovation capability in small electronics and software firms in southeast England. *Research Policy*, 31(7), 1053–1067. [https://doi.org/10.1016/S0048-7333\(01\)00176-7](https://doi.org/10.1016/S0048-7333(01)00176-7)

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, 26(4), 441–457. <https://doi.org/10.1016/J.JBUSVENT.2009.12.002>

Rust, R. T., Ambler, T., Carpenter, G. S., Kumar, V., & Srivastava, R. K. (2018). Measuring Marketing Productivity: Current Knowledge and Future Directions: <https://doi.org/10.1509/Jmkg.68.4.76.42721>, 68(4), 76–89. <https://doi.org/10.1509/JMKG.68.4.76.42721>

Saunila, M., Pekkola, S., & Ukko, J. (2014). The relationship between innovation capability and performance: The moderating effect of measurement. *International Journal of Productivity and Performance Management*, 63(2), 234–249. <https://doi.org/10.1108/IJPPM-04-2013-0065/FULL/XML>

Sen, F. K., & Egelhoff, W. G. (2000). Innovative capabilities of a firm and the use of technical alliances. *IEEE Transactions on Engineering Management*, 47(2), 174–183. <https://doi.org/10.1109/17.846785>

Shek, D. T. L., & Yu, L. (2014). Confirmatory factor analysis using AMOS: A demonstration. *International Journal on Disability and Human Development*, 13(2), 191–204. <https://doi.org/10.1515/IJDHD-2014-0305/DOWNLOADASSET/SUPPL/APPENDIX-4.ZIP>

Sher, P. J., & Yang, P. Y. (2005). The effects of innovative capabilities and R&D clustering on firm performance: the evidence of Taiwan's semiconductor industry. *Technovation*, 25(1), 33–43. [https://doi.org/10.1016/S0166-4972\(03\)00068-3](https://doi.org/10.1016/S0166-4972(03)00068-3)

Smith, W. K., & Tushman, M. L. (2005). Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams. <https://doi.org/10.1287/Orsc.1050.0134>, 16(5), 522–536. <https://doi.org/10.1287/ORSC.1050.0134>

thesis, R. S.-U. doctoral, Technological, G., & 2017, undefined. (n.d.). Problems and prospects of women entrepreneurship with special reference to MSMEs in the state of Gujarat. *Osf.Io*. Retrieved August 30, 2022, from <https://osf.io/download/5f8e8afbab65180178b0f17d/>

Tomlinson, P. R., & Fai, F. M. (2013). The nature of SME co-operation and innovation: A multi-scalar and multi-dimensional analysis. *International Journal of Production Economics*, 141(1), 316–326. <https://doi.org/10.1016/J.IJPE.2012.08.012>

Tourigny, D., & Le, C. D. (2010). Impediments to innovation faced by Canadian manufacturing firms. <http://dx.doi.org/10.1080/10438590410001628387>, 13(3), 217–250.

<https://doi.org/10.1080/10438590410001628387>

Turulja, L., & Bajgoric, N. (2019). Innovation, firms' performance and environmental turbulence: is there a moderator or mediator? *European Journal of Innovation Management*, 22(1), 213–232. <https://doi.org/10.1108/EJIM-03-2018-0064/FULL/XML>

Ulaga, W., & Reinartz, W. J. (2011). Hybrid Offerings: How Manufacturing Firms Combine Goods and Services Successfully: *Https://Doi.Org/10.1509/Jm.09.0395*, 75(6), 5–23. <https://doi.org/10.1509/JM.09.0395>

Ur Rehman, S., Elrehail, H., Alsaad, A., & Bhatti, A. (2021). Intellectual capital and innovative performance: a mediation-moderation perspective. *Journal of Intellectual Capital*, 23(5), 998–1024. <https://doi.org/10.1108/JIC-04-2020-0109/FULL/XML>

Vorhies, D. W., & Morgan, N. A. (2018). Benchmarking Marketing Capabilities for Sustainable Competitive Advantage: *Https://Doi.Org/10.1509/Jmkg.69.1.80.55505*, 69(1), 80–94. <https://doi.org/10.1509/JMKG.69.1.80.55505>

Yang, H., Zheng, Y., & Zhao, X. (2014). Exploration or exploitation? Small firms' alliance strategies with large firms. *Strategic Management Journal*, 35(1), 146–157. <https://doi.org/10.1002/SMJ.2082>

Zeithaml, V. A., Rust, R. T., & Lemon, K. N. (2001). The Customer Pyramid: Creating and Serving Profitable Customers: *Http://Dx.Doi.Org/10.2307/41166104*, 4, 118–142. <https://doi.org/10.2307/41166104>

Zeng, S. X., Xie, X. M., & Tam, C. M. (2010). Relationship between cooperation networks and innovation performance of SMEs. *Technovation*, 30(3), 181–194. <https://doi.org/10.1016/J.TECHNOVATION.2009.08.003>