

Exploring the Nexus of Inventive Passion on Effectuation and Product Innovativeness

Syed Khalid Ahmed¹, Faisal Masud², Tanveer Taj³ and Adeel Nawaz⁴

<https://doi.org/10.62345/jads.2024.13.4.7>

Abstract

This study investigates the interplay between inventive passion and the effectuation process's role in bringing product and service innovativeness. This research examines the mediating effect of effectuation in connection with the entrepreneurial inventive passion product and service innovativeness in SMEs. The study is causal and cross-sectional; SPSS version 26 is used for statistical inference, whereas Hayes macro version 4.2 is employed for regression analysis. The findings suggest that inventive passion has a significant positive relationship with product innovativeness and effectuation. Furthermore, effectuation mediates the relationship between inventive passion and product innovativeness. The study results have considerable implications for entrepreneurs and policymakers seeking to foster innovation and entrepreneurship. In a dynamic and uncertain environment, SMEs can employ compelling logic of effectuation to innovate products and services. Effectual elements provide the framework for developing the echo system for product and service inventiveness for passionate entrepreneurs which will facilitate product and service innovativeness.

Keywords: Inventive Passion, Effectuation, Innovation, Innovativeness, Process Model.

Introduction

Entrepreneurship is a fabrication of passion, strategic thinking, and innovation. The era of globalization has made innovation an essential issue in the competitive economic environment Calik (2024). Digitization and providing innovative solutions are driving the organization. Countries found innovativeness and digitalization of enterprises fundamental to their progress and development of a competitive knowledge-based economy Brodny and Tutak (2024). In order to overcome the negativity of the economic turbulence of the business environment, organizations are gearing up their efforts to develop their innovation capabilities Edeh et al. (2022).

Countries invest in developing their enterprise to innovate. The analysis showed that in terms of the level of innovativeness among EU-27, enterprises in the rich countries, i.e. Belgium, Denmark, Finland, and Sweden (EU-14), developed the innovativeness of their companies, on the other hand, enterprises of the developing countries of Europe (EU-13), i.e. Bulgaria, Latvia, Poland and Romania are equally investing in developing echo systems for innovativeness for their enterprises Brodny & Tutak (2024). Entrepreneurial innovativeness positively enhances small and medium enterprises' business success (market share and sales growth) George will (2024).

¹Assistant Professor, Hamdard University, Islamabad. Email: syed.khalid@hamdard.edu.pk

²Assistant Professor, Hamdard University, Islamabad.

³Assistant Professor, Bahria University Islamabad.

⁴Hamdard University, Islamabad.



Entrepreneurial hustle is the critical and unconventional measures they employ to deal with hindrances and prospects under uncertainty Burnell et al. (2024). Whereas the study found that differentiation in values in the countries influences product and service innovativeness, there is no single recipe for innovation (Tużnik, 2024). The main objective of this paper is to explain the nexus of entrepreneurial inventive passion, effectuation, and product innovativeness and enlighten the mechanisms which drive entrepreneurial success. Innovation is considered to play a vital role in developing a nation's economy (Distanont & Khongmalai, 2020). The mechanization of production and allocation of resources are interlinked and were always accompanied by questions about their impact on the incentive Antonioli (2024). Innovation provides the road map for venture sustainability and competitive advantage in the current era of business environments (Zeb & Ihsan, 2020); however, it is predominantly carried out by new resource-constrained organizations and effectuation process can benefit the resource constrained entrepreneur to overcome these constraints by employing the effectual logic. Based on the previous research implications, this study aims to investigate the effectuation process that can bring innovations to products and services.

In business, entrepreneur passion is linked to innovation (Kiani et al., 2020), ignoring the process of passion as an entrepreneurial trait and how it affects the innovation process Kiani et al. (2022). This study focused on investigating the process that drives product and service innovation by exploring the entrepreneurial passion of owners and the effectuation process. Entrepreneurship is a beacon of innovation, propelled by enthusiasm, strategic insight, and the dogged quest for creative solutions. At its foundation, entrepreneurship is a journey driven by imaginative enthusiasm, in which individuals use their natural ambition, creativity, and determination to traverse the intricacies of the corporate world. This desire drives entrepreneurs to push the boundaries, question the current status quo, and launch companies that change sectors and marketplaces Edeh et al. (2022).

Similarly, the concept of effectuation arises as a strategic paradigm that reflects the entrepreneurial experience. Sarasvathy (2001) pioneered effectuation theory, which emphasizes using existing resources, viewing uncertainty as an opportunity, and iteratively adapting methods to changing conditions. Effectuation connects the entrepreneurial experience to product and service innovation' Ahmed et al. (2024). This pragmatic and adaptable approach resonates strongly with entrepreneurs navigating the ever-changing landscape of innovation and disruption. Understanding the complicated interplay between three core pillars - entrepreneurial inventive spirit, effectuation, and product innovation - becomes increasingly important as the entrepreneurial ecosystem evolves. The study by Kiani et al. (2022) uncovers the role of entrepreneurial passion and encourages future studies to account for additional factors and consider their co-occurrence.

Entrepreneurship and innovation are considered to be processual phenomena Vettik-Leemet & Mets (2024), and effectuation theory could provide a solution to this problem. These processes are constrained to the entrepreneurial innovation ecosystem through their available network. Nascent firms are resource-constrained, requiring more knowledge and skills to orchestrate these processes and utilize intangible and tangible resources. Government restraint orders for dining-in in the hospitality sector during the COVID-19 pandemic further drive entrepreneurs to innovate effectively. Noone et al. (2024) network and interconnected resources of the large organization provide a better framework for innovations and organizational survival. This leads to further research on antecedents and consequences of innovation networks available to SMEs through effectuation and in a crisis. Streamlining the processes of entrepreneurship and innovation needs further research at every stage Vettik-Leemet and Mets (2024); hence, this study is inclined to explore the outcome of the effectuation process and how it affects product and service innovativeness.

New enterprises with resource constraints employ the theory of effectuation for innovation in highly dynamic and uncertain situations Berends et al. (2014). The research claims that effectuation is most suitable in uncertain conditions, whereas the response of entrepreneurs in these conditions at different levels of uncertainty needs to be investigated. Studies of behavioural decision-makers claim that in the event of an increase in ambiguity, behavioural decision-makers tend to keep the status quo instead of finding new ways to cope with the uncertainty Cowden et al. (2024). Therefore, this study will be underpinned by the theory of effectuation developed by Sarasvathy (2009). The study will extend the theory of effectuation and enrich the literature with the findings of this study on the effectuation-innovation nexus.

This study unravels the nexus that connects these factors to discover the mechanisms, relationships, and revolutionary potential they possess within entrepreneurial enterprises. Innovation can cause a competitive gain for businesses, either through developing approaches (i.e. Dell incorporation) and techniques capable of generating new products or services or perfecting existing ones Taques et al. (2021). Experiments as a tool for innovation are an element of the understudied effectuation process; further studies need to be employed to explore the entrepreneurs' insights for innovation. Banerjee and Pandey's (2024) experiment, a tool of effectual logic, is also studied in this investigation. This research gap is intriguing because the entrepreneur's passion has yet to be studied earlier in the context of the effectuation process to bring product and service innovativeness. Hence, this research has incorporated the suggestion put forth by the above author to fill the gap in effectuation mediation on the relationship between inventive passion and product and service innovativeness.

This study focuses on the research questions including the impact of an entrepreneur's inventive passion on product and service innovativeness and the mediation of the effectuation process on the relationship between an entrepreneur's inventive passion and product and service innovativeness. The research objective of the study is to examine the impact of entrepreneurial inventive passion on product and service innovativeness, as well as the effects of the mediation relationship.

Literature Review

Entrepreneur Inventive Passion

Entrepreneurial achievement is derived from various facets of his/her Passion Morfaki (2025). Studies conducted on passion found its significant impact on people's cognition, action and motivation (Dinibutun, 2024). Entrepreneur Inventive Passion refers to the individual's eagerness to explore market opportunities, experiment with new methods, build products and services and engage in economic activities Zhou et al. (2021). Passion is a force that drives success; it provides internal drive, improved resilience, inventiveness, and creativity, and it helps identify and find resources to achieve goals. Passion inspires creativity to find new ideas for products and services Banerjee and Pandey (2024). Inventive passion refers to entrepreneurs' enthusiasm and dedication to creating new products and services. Research has shown that inventive passion is a crucial driver of innovation (Amabile, 1988).

Product and Service Innovativeness

Enterprise grows through new product and service innovation (2024). Innovations create a competitive edge for organizations and bring growth and sustainability to organizations Nurgraha and Mulyadi (2018). '*Product innovation* is defined as goods, services, ideas or processes perceived by the customer as a new thing in life' Hassan (2017). Product innovativeness is the newness and uniqueness of the existing product and services; it is a critical aspect of innovation linked to firm performance (Rogers, 2003).

Organizations innovate for a competitive edge, innovating processes, i.e. Dell corporation approach, or creating new products and services or upgrading existing products or services Taques et al. (2021); in the dynamic era, the importance of innovation has increased manifolds for SMEs to survive in their domestic and international markets Kiani et al. (2020). In order to recognize the course of successful innovation, the newness in the product innovation is required Cheng et al. (2013). In the marketplace, there is a significant surge in the requirements for innovation and the research community. In organizations, the benchmark of success is innovation, and much of the research is dedicated to the behaviours and antecedents of innovation Kiss et al. (2020).

Effectuation

The study found that effectual decision-making approaches, i.e., affordable loss, flexibility, etc., synergize firms' growth (Farokhmanesh et al. (2024). The effectuation process identifies non-existing goals using existing means Jamin (2024). Effectuation logic reconfigure network alliances enhances its external capabilities Khan et al. (2024). In order to create competitive advantage, SMEs make networks and partnerships and use effectual logic Alam et al. (2024). Constructive alliance is found in the effectual logic framework, and the mediation mechanism exists in the entrepreneurs' alertness and market opportunities and SME performance Karami and Hossain (2024), effectuation as an approach for pursuing opportunities during uncertainty to remain competitive Ebegetale et al. (2024). Previous studies suggest that the effectuation mechanism is more appropriate in dynamic and uncertain conditions Cowden et al. (2024).

Entrepreneur Inventive Passion and Product and Service Innovativeness

In the dynamic entrepreneurial environment (Li & Sukpasjaroen, 2024), entrepreneurs' dynamic competence is instrumental in helping achieve innovation goals. Business model innovation and entrepreneurial passion are interlinked Dinibutun (2024). Entrepreneurs' passion scans the techniques available for innovation, and passion is a critical process to refine innovation Luu (2023). Entrepreneurial individuals typically possess a self-motivated and independent mindset centred on innovation, creativity, risk-taking and proactivity while embracing change and uncertainty (Abdullah et al., 2024). Innovation theory draws the line between innovation and entrepreneurial processes because of uncertainty and risk Ryman & Roach (2024). The entrepreneur's inventive passion provides the impetus for relentless efforts to find new markets and fulfil their needs by finding new ideas, products, or services Li and Sukpasjaroen (2024). This study delves into how product and service innovation is linked to organizations' benefits of entrepreneurial, inventive passion. Hence, the study's first hypothesis is derived from the above discussion:

H1: Entrepreneur inventive passion has a positive relationship with product innovativeness.

Entrepreneur Inventive Passion and Effectuation

Entrepreneurs' networking and alliances have an affirmative effect on the innovation capacity and performance of MSMEs Martini et al. (2024). Entrepreneurs identify opportunities and encourage business innovation by making alliances to orchestrate the firm's resources to direct their goal-oriented behaviour and cognition Li and Sukpasjaroen (2024). Entrepreneurial firms struggle to develop internal capabilities to innovate products and services Saari et al. (2024). Organizations require significant investments in technological innovation, which may hinder their innovative ambitions. Kumar et al. (2024) found that the reasons for innovation failure are improper management and lack of knowledge. Passionate entrepreneurs create alliances, integrate information technology and enhance the development of innovative business ideas frequently Flores Pérez and Guevara

(2023). Passionate entrepreneurs engage in more ineffectual for innovation. There is a connection between entrepreneurs' inventive passion and effectuation (Read et al., 2009). Businesses are linked in product innovation (Jajja et al., 2017), and supplier innovation strategies are linked; buyers' innovation strategy enhances product innovation and moderates the supplier's focus on innovation. Service co-creation and innovation are linked with effectuation, not causation (Alam et al., 2022). The above discussion develops the link between the entrepreneur's inventive passion and the effectuation process; hence, from this discussion, the study derives the second hypothesis, *H2*: Entrepreneurial inventive passion, which has a positive relationship with effectuation.

Effectuation and Product & Service Innovativeness

Effectuation is positively related to product and service innovativeness, suggesting that experimentation and learning are critical for innovation (Sarasvathy, 2001). The resources-constrained entrepreneurs frequently exercise effectuation in their entrepreneurial endeavours, exploit networks through collaboration- making partners not competitors, emphasize affordable loss than expected returns, etc., in order to create a known future situation rather than forecast uncertainty; these processes are more reliable than exploited entrepreneurial approaches Rod (2024). Alliances and partnerships are elements of effectual logic that play a significant role in dynamic environments. Startups must use these alliances for business model innovation Xu et al. (2024). This literature review allowed framing our third hypothesis:

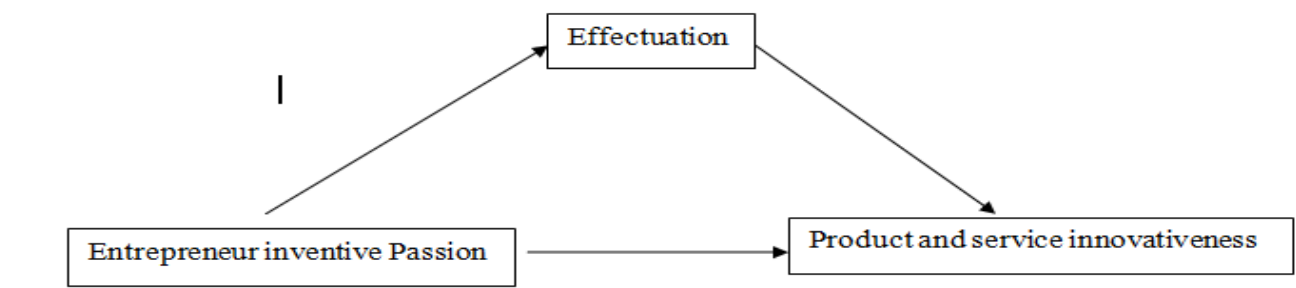
H3: Effectuation has a positive effect on Product innovativeness.

Effectuation as a Mediator

Effectuation has been found to mediate the relationship between inventive passion and product innovativeness (Sarasvathy, 2001). Professional entrepreneurs exercise effectual logic in uncertain conditions to achieve organizations' goals; it increases the probability of innovation Sarasvathy (2024). The entrepreneur employs the effectual logic framework, i.e. alliances and partnerships, to create opportunities Read *et al.* (2009). An organization's capacity for innovation is determined by its resources and reconstruction to achieve innovation goals Li and Sukpasjaroen (2024). This concludes the last hypothesis of this study,

H4: Effectuation positively mediates the relationship between entrepreneurial, inventive passion and product and service innovativeness, and thus developed the study conceptual framework.

Figure 1: Theoretical Framework and Conceptual Diagram



Methodology

Table 1: Research Instrument and Reliability Statistics

Construct	Source	Item Statement
Inventive Passion	Cardon et al. (2013)	Owning my own company energizes me
Product innovativeness	Cui & Wu (2017)	Very novel for the industry
Effectuation	Chandler et al. (2011)	Network contacts provided low-cost resources

Table 1 provides the reliability statistics of the study variables. This study has employed five point likert scale and all the variables have accepted value of more than 0.7 which is acceptable. Reliability of independent variable Entrepreneur inventive passion is $\alpha = 0.763$, reliability of the dependent variable product innovativeness is $\alpha = 0.859$, and the reliability of the mediator effectuation is $\alpha = 0.821$.

Table 2: Cronbach's Alpha

Entrepreneur inventive passion	0.763
Product innovativeness	0.859
Effectuation	.821

Data Analysis

Table 2 shows the study demographics. Most respondents were male and fell within the age brackets of 18-35. Further, the respondents were either owners of the MSMEs or executive-level employees who better understood the business operations. Gender composition of respondents: female twenty percent and eighty percent of the respondents were male whereas sixty eight percent of the respondents were single.

Table 3: Demographic Statistics

Variable	Range	Frequency	Percent
Gender	Female	70.00	20.11
	Male	278.00	100.00
Age	18 to 25	178.00	51.15
	26 to 35	130.00	88.51
	36 to 45	16.00	93.10
	46 to 55	21.00	99.14
	55 or above	3.00	100.00
Marital Status	Single	239.00	68.68
	Married	109.00	100.00
Designation	Owner	158.00	45.40
	EL	57.00	61.78
	GM	71.00	82.18
	FM	35.00	92.24
	FLM	27.00	100.00

*Note: EL (executive level), GM (General Manager), FM (Functional Manager), FLM (Front Liner Manager)

Table 3 depicts the value of skewness and kurtosis. The value of skewness is within the range of -3 to +3 which shows data is asymmetrical. Whereas, the values of gender is showing negative sign which shows it is negatively skewed; as because more than 75 percent of the respondents were male. Kurtosis is the measure of degree of peakness of the frequency distribution. The results of kurtosis is also within the range and asymmetrical at the level of three. More than +3 signify positive kurtosis and, less than -2 negative kurtosis. All the values of the items are within range besides education which is 18.65 which indicates that most of the respondents were educated at the level of graduate.

Table 4: Statistic-- Skewness and Kurtosis

Items	Skewness	Kurtosis
Education	3.188	18.654
Industry	1.312	.408
Designation	.750	-.654
Total Experience	.999	.096
Your Age	1.508	2.120
Gender	-1.498	.244
Marital Status	.809	-1.353

Correlations

The correlation of the variables is illustrated in correlation table 4. The study independent variable entrepreneurs' inventive passion has a positive and significant correlation with the dependent variable Product *innovativeness* at .449**, and with the mediator effectuation.409**. The dependent variable Product *innovativeness* has a positive and significant correlation with mediator effectuation at .455**. The correlation results show that inventive passion is positively correlated with product *innovativeness* and effectuation. Effectuation is also positively correlated with product and service *innovativeness*.

Table 5: Correlations

Items	EP <u>Invt</u>	Prd <u>Invt</u>	Effectuation
E. Passion Inventive	1		
Product Innovativeness	.449**	1	
Effectuation	.409**	.455**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

Hypotheses Tests

This study used the Andrew Hays process model 4.2 to run the mediation analysis of independent variable entrepreneur experience on dependent variable product *innovativeness*, this process made it

more effective than other software. Table 5 model summary, the model is significant at the P value is .000, the correlation R is .449 which is strong and change in the model R^2 is .2017 and positive; the model is fit for interpretation.

Table 5: Model Summary

R	R ²	F	Df ¹	Df ²	P
0.4491	0.2017	87.143	1.000	345.000	0.000

Table 6 shows the direct, indirect and total effect of the study variables. The direct effect of entrepreneurs' inventive passion on dependent variable product innovativeness shows an impact of .3285 on the dependent variable product innovativeness and the results are significant, T value 6.342 and upper level and lower-level confidence interval is also in the same direction, hence it can be concluded that hypothesis *H1*: Entrepreneur inventive passion has a positive relationship with product innovativeness. The data shows a strong effect of independent variable entrepreneur inventive passion on product innovativeness that is bringing 32 percent change in dependent variable which concludes the acceptance of the study second hypothesis *H2*: Entrepreneur inventive passion has a positive relationship with effectuation.

The indirect effect or the mediation analysis show mediation is occurring. The effect of the mediation is 0.1384 and the result is significant. The effect of the mediation increases the total effect to 13.8 percent which concludes that effectuation increases the effect of entrepreneur inventive passion for the product innovativeness. Hence it can be claimed that study hypothesis *H3*: Effectuation has a positive effect on Product innovativeness and *H4*: Effectuation mediates the relationship of entrepreneur inventive passion and product innovativeness is accepted. The total effect also reflects that there is an increase 14 percent in the total effect which increases from 32.85 to 46.7 percent. The regression analysis confirms the hypotheses, showing that inventive passion has a significant positive relationship with product innovativeness and effectuation, and that effectuation mediates the relationship between inventive passion and product innovativeness.

Table 6: Direct, Indirect and Total effect of X on Y

Direct, Indirect and Total effect					
	Effect	T	P	LLCI	ULCI
Direct effect	.3285	6.3437	0.0000	.2267	0.4304
Indirect effect	.1384			0.0766	0.2125
Total Effect	.4670	9.3350	0.0000	.3686	0.5653

Discussion

The study aimed to empirically examine our proposed mediation model of the nexus of inventive passion, product and service innovativeness and effectuation process. The study research questions the impact of an entrepreneur's inventive passion on product innovativeness and the mediation of the effectuation process on the relationship between an entrepreneur's inventive passion and product and

service innovativeness. This study aligns with the previous research by Abdullah et al. (2024). Entrepreneurial individuals typically possess a self-motivated and independent mindset centered on innovation. Entrepreneurial passion has been related to radical innovation among businesses (Kiani et al., 2020). The study has found a strong relationship between the entrepreneur's inventive passion and product and service innovativeness. The direct effect, where the impact of the independent variable entrepreneurial inventive passion was regressed on the dependent variable product and service innovativeness, is found to be strong. The beta value is .3285, which shows a direct impact of 32.85 per cent, and the research model is relatively robust in bringing a 33 per cent change in the dependent variable. The study further identified the mediation effect as 13.84 per cent, which increased the total effect from 32.85 to 46.7 per cent. The overall effect of the model is powerful; the study endorses previous authors Sarasvathy (2024) that the effectual process increases the probability of innovation; Xu et al. (2024), the entrepreneurial networks-effectuation-BMI association was more substantial in highly dynamic environments; the effectuation connects the entrepreneurial experience to product and service innovation Ahmed et al. (2024).

Managerial and Practical Implications

The findings of this study have significant implications for entrepreneurs and policymakers seeking to foster innovation and entrepreneurship. The results suggest that cultivating inventive passion and engaging in effectual behavior can increase product innovativeness. The study also highlights the importance of experimentation and learning in innovation. Passion drives innovation; hence, passion intricacies must be learned and taught to young entrepreneurs through workshops, seminars and mentoring at the universities.

Future research should explore the nuances of these relationships and their implications for innovation and entrepreneurship. Future research could be conducted on the ingrained dimensions of the effectuation, i.e. how each dimension impacts the product and service innovativeness. The survey method was used to gather respondents' views. Future studies could employ the qualitative study of the effectuation process, which can lead to better insights.

Conclusion and Recommendations

This study contributes to understanding the complex relationships between inventive passion, effectuation, and product innovativeness. The findings suggest entrepreneurs should cultivate inventive passion and engage in effectual behaviour to increase product innovativeness. Moreover, the situations that concern the relationship between resource orchestration and product innovation need further investigation. The present research informs, extends, and encourages entrepreneurs to utilize multiple resource orchestration with suppliers and other stakeholders to assist their firms in integrating their network through the framework provided by the elements of effectuation to be a source of competitive advantage through product and service innovation. SMEs are predominantly resource-constrained, and their chances of success can be enhanced through an inventiveness echo system. This echo system can be developed through compelling logic of effectuation through internal and external partnerships and networks. The effectual logic enables the SMEs to scale their risk-taking and experimentation and develop an inventive culture and echo system in the dynamic and uncertain environment.

References

- Abdullah, A., Taliang, A., Efendi, B., Kasmi, M., & Aman, A. (2024). Examining The Effects of Entrepreneurial Mindset, Digital Marketing Innovation and Networking on SME Performance. *Journal of System and Management Sciences*, 14(6), 113-127.
- Ahmed, S. K., Taj, T., & Masud, F. (2024). Effectuation Orchestration the Process for Innovation. *Journal of Innovations in Education and Social Sciences*, 2(October), 86-91.
- Alam, M. N., Masroor, I., Nabi, M. N. U., & Dornberger, U. (2024). Unveiling the synergy: entrepreneurial effectuation and alliance-driven SME diversification. *Review of International Business and Strategy*.
- Alam, M. N., Masroor, I., Rifat, S. M., Dey, S., Nabi, M. N. U., & Khan, S. M. (2022). Service co-creation in destination exporting-does decision-making logic foster the service co-creation process in designing new services?. *International Journal of Export Marketing*, 5(1), 4-31.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, 10, 123-167.
- Antonioli, D., Marzucchi, A., Rentocchini, F., & Vannuccini, S. (2024). Robot adoption and product innovation. *Research Policy*, 53(6), 105002.
- Babina, T., Fedyk, A., He, A., & Hodson, J. (2024). Artificial intelligence, firm growth, and product innovation. *Journal of Financial Economics*, 151, 103745.
- Banerjee, D., & Pandey, M., (2024). How Passionate The Entrepreneurs? A Bibliometric Analysis. *Accountancy Business and the Public Interest ISSN: 1745-7718*. 40(8).
- Berends, H., Jelinek, M., Reymen, I., & Stultiëns, R. (2014). Product innovation processes in small firms: Combining entrepreneurial effectuation and managerial causation. *Journal of Product Innovation Management*, 31(3), 616-635.
- Brodny, J., & Tutak, M. (2024). Assessing the level of innovativeness and digitalization of enterprises in the European Union States. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100210.
- Burnell, D., Neubert, E., Fisher, G., Marvel, M. R., Stevenson, R., & Kuratko, D. F. (2024). Entrepreneurial hustle: Scale development and validation. *Journal of Business Venturing*, 39(4), 106407.
- Calik, E. (2024). A validated measurement scale for sustainable product innovation performance. *Technovation*, 129, 102882.
- Cardon MS, Glauser M, Murnieks CY (2017) Passion for what? Expanding the domains of entrepreneurial passion. *J Bus Venture Insights*, 8, 24–32.
- Cheng, C. F., Chang, M. L., & Li, C. S. (2013). Configural paths to successful product innovation. *Journal of Business Research*, 66(12), 2561-2573.
- Cowden, B., Karami, M., Tang, J., Ye, W., & Adomako, S. (2024). The spectrum of perceived uncertainty and entrepreneurial orientation: Impacts on effectuation. *Journal of Small Business Management*, 62(1), 381-414.
- Dinibutun, S. R. (2024). The impact of entrepreneurial passion on business model innovation on Turkish SMEs. *Cogent Business & Management*, 11(1), 2291864.
- Distanont A, Khongmalai O (2020) The role of innovation in creating a competitive advantage. *Kasetsart J Soc Sci*, 41(1), 15–21.
- Edeh FO, Zayed NM, Nitsenko V, Brezhnieva-Yermolenko O, Negovska J, Shtan M (2022) Predicting innovation capability through knowledge management in the banking sector. *J Risk Financ Manag*, 15(7), 312.

- Farokhmanesh, T., Davari, A., Baghersad, V., & Sajadi, S. M. (2024). Exploring the dynamics of firm growth: the interplay of decision-making logic. *Journal of Business & Industrial Marketing*.
- Flores, P. J. J., & Guevara, R. (2023). Mediating effect of entrepreneurial passion in the relationship between entrepreneurial orientation and innovative work behaviour. *Measuring Business Excellence*, 27(open in a new window)(3(open in a new window)), 483–500. <https://doi.org/10.1108/MBE-10-2022-0126>
- Georgewill, I. A (2024) Entrepreneurial Innovativeness and Business Success of Small and Medium Enterprises in Rivers State. *International Research Journal of Economics and Management Studies IRJEMS*, 3(3).
- Hassan, N., Zhang, G., Arslan, F., Caraballo, J., Jimenez, D., Gawsane, S., & Tremayne, M. (2017). Claimbuster: The first-ever end-to-end fact-checking system. *Proceedings of the VLDB Endowment*, 10(12), 1945-1948.
- Jajja, M. S. S., Kannan, V. R., Brah, S. A., & Hassan, S. Z. (2017). Linkages between firm innovation strategy, suppliers, product innovation, and business performance: Insights from resource dependence theory. *International Journal of Operations & Production Management*, 37(8), 1054-1075.
- Jamin, M. C. (2024). The Role of Business Incubation in Shaping Decision-Making Styles of Novice Entrepreneurs: A Study on Effectuation and Causation (Master's thesis, University of Twente).
- Karami, M., & Hossain, M. (2024). Marketing intelligence and small firms' performance: the role of entrepreneurial alertness and effectuation. *Marketing Intelligence & Planning*, 42(1), 168-189.
- Kiani, A., A. Ali, S. Kanwal, and D. Wang. 2020. How and When Entrepreneurs' Passion Lead to Firms' Radical Innovation: Moderated Mediation Model. *Technology Analysis & Strategic Management*, 32(4), 443–456.
- Kiani, A., Yang, D., Ghani, U., & Hughes, M. (2022). Entrepreneurial passion and technological innovation: the mediating effect of entrepreneurial orientation. *Technology Analysis & Strategic Management*, 34(10), 1139-1152.
- Kumar, R., Saxena, S., Kumar, V., Prabha, V., Kumar, R., & Kukreti, A. (2024). Service innovation research: a bibliometric analysis using VOSviewer. *Competitiveness Review: An International Business Journal*, 34(4), 736-760.
- Li, F., & Sukpasjaroen, K. (2024). The impact of the digital capability of college students' new enterprises on business model innovation driven by the digital economy: the mediating effect of digital opportunity discovery. *Journal of Risk and Financial Management*, 17(4), 152.
- Luu, N. (2023). Linking entrepreneurial passion and innovation under the dynamic influence of entrepreneurs' age: The case of Vietnamese SMEs. *The International Journal of Entrepreneurship and Innovation*. <https://doi.org/10.1177/14657503221148305>
- Morfaki, C. (2025). From Passion to Success: A Journey Through the Emotional Landscape of Entrepreneurial (He) arts. In *Real-World Tools and Scenarios for Entrepreneurship Exploration* (pp. 169-202). IGI Global.
- Murtini, M., Safii, A. A., & Anom, L. (2024). Exploring The Relationship Between Entrepreneurial Networking, Entrepreneur Leadership, Innovation capability, and MSMEs Performance. *Innovation Business Management and Accounting Journal*, 3(1), 37-47.
- Noone, B. M., Lin, M. S., & Sharma, A. (2024). Firm performance during a crisis: Effects of adhocracy culture, incremental product innovation, and firm size. *Journal of Hospitality & Tourism Research*, 48(1), 153-183.

- Nurgraha, J., & Mulyadi, H. (2018). Creating product innovation in micro creative industry in Indonesia. *Journal of Entrepreneurship Education*, 21(2), 1-11.
- Perry, J. T., G. N. Chandler, and G. Markova. (2012). Entrepreneurial Effectuation: A Review and Suggestions for Future Research. *Entrepreneurship: Theory and Practice*, 36(4), 837–61, <https://doi.org/10.1111/j.1540-6520.2010.00435.x>.
- Racat, M., Ricard, A., & Mauer, R. (2024). Effectuation and causation models: an integrative theoretical framework. *Small Business Economics*, 62(3), 879-893.
- Read, S., Sarasvathy, S. D., Dew, N., & Wiltbank, R. (2009). Myths about the entrepreneur's experience. *Academy of Management Perspectives*, 23(3), 72-84.
- Rod, M. (2024). Effectuation and Bricolage and their Applicability to Sub-Saharan African Entrepreneurship. *Understanding Entrepreneurship in Sub-Saharan Africa: A Venture-Ship Approach*, 99-123.
- Ryman, J. A., & Roach, D. C. (2024). Innovation, effectuation, and uncertainty. *Innovation*, 26(2), 328-348.
- Saari, U. A., Damberg, S., Schneider, M., Aarikka-Stenroos, L., Herstatt, C., Lanz, M., & Ringle, C. M. (2024). Capabilities for circular economy innovation: Factors leading to product/service innovations in the construction and manufacturing industries. *Journal of cleaner production*, 434, 140295.
- Sarasvathy, S. (2024). *Effectuation and Open Innovation*. Edward Elgar Publishing.
- Sarasvathy, S. D. (2009). *Effectuation: Elements of entrepreneurial expertise*. Edward Elgar Publishing.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from necessity to entrepreneurial opportunity. *Entrepreneurship Theory and Practice*, 25(4), 11-23.
- Taques, F. H., Lopez, M. ., Basso, L. F., & Areal, N. (2021). Indicators used to measure service innovation and manufacturing innovation. *Journal of Innovation & Knowledge*, 6(1), 11-26.
- Tužnik, F. (2024, June). Values influencing innovativeness of Baltic States and Poland. Comparative analysis. In *ISPIM Innovation Symposium* (pp. 1-18). The International Society for Professional Innovation Management (ISPIM).
- Vettik-Leemet, P., & Mets, T. (2024). Entrepreneurship and Innovation—Process Overlap or the Same? Systematic Overview and Converging Process-Dynamic Model. *Administrative Sciences*, 14(2), 38.
- Xu, S., Wu, X., He, J., Zhu, R., Morrison, A. M., & Xie, C. (2024). Turning entrepreneurial networks into business model innovation for start-ups. *Management Decision*.
- Zeb, A., & Ihsan, A. (2020, March). Innovation and the entrepreneurial performance in women-owned small and medium-sized enterprises in Pakistan. In *Women's Studies International Forum* (Vol. 79, p. 102342). Pergamon.
- Zhou, C., Wenhong, Z., Chengli, S., & Shanshan, H. (2021). Same source but different effects?—A study on the influence of invention passion and development passion on business model innovation. *Foreign Economics & Management*, 43, 85–98.