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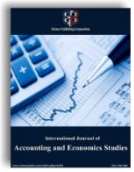

Entrepreneurial Marketing and Customer Value Creation: The Mediating Roles of Technology, Customization, and Customer Orientation Under Varying Customer Complexity

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Abstract

The current study focuses on the interrelations between entrepreneurial marketing (EM), technology customization (TC), customer orientation (CO), and customer satisfaction (CS), incorporating customer complexity (CC) as a moderating variable. The study builds and empirically tests an integrated framework using data from 279 tech-based firms across diverse industries, leveraging resource-based view and dynamic capabilities theories. Entrepreneurial marketing positively affects customer satisfaction both directly and indirectly through technology customization, product innovation, and customer orientation, as shown by structural equation modeling. These relationships are moderated (in a positive sense) by customer complexity, which enhances the effects of entrepreneurial marketing on technology customization and the effect of technology customization, respectively, on customer orientation. Theoretical implications of these findings advance research on entrepreneurial marketing with practical implications for technology-based firms aiming to increase customer satisfaction in ever more complex market contexts.

Keywords: *Entrepreneurial Marketing; Technology Customization; Customer Orientation; Customer Satisfaction; Product Innovation; Customer Complexity.*

1. Introduction

As organizations navigate an ever-changing business environment defined by challenges emerging from increased competition, technological disruption, and evolving customer expectations (Doluca et al., 2018; Morgan & Anokhin, 2023; V, 2024)They increasingly recognize the importance of addressing environmental sustainability. (Irshad et al., 2023; Musah et al., 2024). In such fast-paced and volatile environments, this market tension would require a novel approach to marketing that can provide a breather from uncertainty, while being uniquely positioned to differentiate with superior customer value. Emerging as a strategic response to these challenges is entrepreneurial marketing (EM) — a philosophy that embodies the balance between entrepreneurial spirit and market needs. (Eggers et al., 2020; Gazi et al., 2024; Peterson, 2020; Whalen et al., 2016).

That said, entrepreneurial marketing is broadly defined here as a multidimensional construct that distinguishes itself from the marketing of yesterday (Kraus et al., 2019), as innovators are exceptional opportunity-focused participants of the fast-paced technology-based network economy. Marked by its ability to find and exploit market prospects that traditional marketing methods would miss, EM is defined as the sum of processes needed to create, communicate, and deliver customer value, with a focus on entrepreneurial thinking. (Alqahtani & Uslay, 2020; Guerola-Navarro et al., 2024). Drawing upon the Resource-Based View (RBV) theory, firms can gain a competitive advantage through unique organizational capabilities and resources, creating a theoretical basis for EM. (Barney, 2007; Barney & Hesterly, 2019).

While academic interest is rising, our understanding of entrepreneurial marketing is still limited, especially in technology-intensive environments where customer demands are sophisticated and tailored solutions are becoming the norm. (Kulova, 2024; Peterson, 2020). There are several crucial gaps in the existing literature. First, previous research has mostly concentrated on direct effects, overlooking the complex mediating mechanisms that underpin the process of how entrepreneurial marketing affects customer outcomes. (Dubey et al., 2020; Kulikovskaja et al., 2023). Second, unlike the numerous studies on the interface between entrepreneurial marketing and the customer customization of technology, the study notes a dearth of research on NOI, with limited results across market segments. (Anshari et al., 2019; Björkander et al., 2019).

The study at hand seeks to bridge these gaps by outlining an integrated framework that explores the complex interplay between entrepreneurial marketing, technology customization, and customer outcomes. More specifically, the objectives of this research are to: (1) investigate both the direct and indirect impacts of entrepreneurial marketing on satisfaction; (2) investigate technology customization and customer orientation as potential mediators; and (3) understand the moderating influence of customer complexity on these relationships. The research provides insight into how entrepreneurial marketing can be harnessed to deliver superior results for customers in situations with differing levels of technological and market complexity through a cross-industry investigation.
The paper contributes to the entrepreneurial marketing literature in several ways. First, it offers a more nuanced theoretical perspective on how entrepreneurial marketing creates value. Second, it advances and tests an integrated conceptual framework that fills important research gaps in the existing literature. Third, the cross-industry approach allows for high generalizability of conclusions to be drawn and provides insights into the strategic operationalisation of entrepreneurial marketing across differing business contexts. The research progresses the theoretical understanding and practical implementation of entrepreneurial marketing strategies by sequentially examining the interactions among entrepreneurial marketing, technology customization, and customer results.

2. Theoretical Background and Hypotheses Development

2.1. Entrepreneurial marketing

Theoretical efforts have increasingly identified the construct of entrepreneurial marketing as a dynamic field that breaks with the traditional lines of marketing as they are observed in established domains and a market as a strategic arena at its intersection with entrepreneurship. (S. C. Morrish, 2011; Peterson, 2020). In line with this view, while approaching marketing with a broad view, this view distinguishes itself from other perspectives through its specific focus on opportunity-creation, active market-driving behaviors, and strategic value co-creation (Alonso-Tapia et al., 2023). Two interrelated theoretical lenses fundamentally ground the entrepreneurial marketing theory landscape: the Resource-Based View (RBV) and Dynamic Capabilities Theory. The Resource-Based View provides a nuanced theoretical lens for conceptualizing entrepreneurial marketing as a strategic capability that enables organizations to achieve superior performance and sustainable competitive advantage through the effective deployment of valuable, rare, inimitable, and organization-specific resources. (Barney, 2001; Barney et al., 2021). This viewpoint essentially transforms the use of resources into a fluid process where dormant resources within the organization are discovered, attracted, and strategically utilized, often missed by established market operators. (S. Morrish et al., 2020). At the same time, the Dynamic Capabilities Theory (Teece, 2020)Provides an advanced analytical lens that elucidates how firms strategically realign their bundles of resources to react to volatile, emergent market conditions.
Empirical research has slowly confirmed the strategic relevance of entrepreneurial marketing in multiple organizational settings. Classic studies by Eggers et al., (2020) Clearly show that entrepreneurial marketing strategies act as a key driver of improved organizational performance via a range of mechanisms, with the ability to create better customer value propositions and a higher degree of market aggressiveness being the most dominant two. The multidimensional construct of entrepreneurial marketing, comprising opportunity focus, sophisticated risk management capability, continuous innovation, proactive approach towards the market, customer-centricity, and value creation, emerged as a strategic asset for organizations leveraging on technologically advanced and complex market environments. (Alqahtani & Uslay, 2020; Dressler & Paunovic, 2021; Z. Li et al., 2024). The theoretical debates have matured greatly, moving from viewing entrepreneurial marketing as a specific operational tactic for small businesses, and reframing it as a multidimensional strategic process suitable for organizational ecologies of different forms and stages of development. (Amjad, 2022; Koka & Prescott, 2002; Van Tonder et al., 2023). For example, one could cite the research of Whalen et al. The same notion is corroborated by (Taneja et al., 2023), who explain the mechanics underpinning how entrepreneurial marketing capabilities empower organizations to discover, assess, and rapidly capitalize on nascent market opportunities with enhanced efficacy than traditional competitive strategies. The relationship between entrepreneurial marketing and customer outcomes is more challenging and has received less attention in the literature, leading to a gap in our understanding of the underlying mechanisms and specific pathways through which entrepreneurial marketing affects customer outcomes, thus providing an important avenue for future research and theoretical development.

2.2. Technology customization

Technology customization in this context relates to the strategic tailoring of technology to fulfil the needs of customers and the circumstances of their use of that technology. (Abu Issa Gazi et al., 2024; Shi et al., 2024). This capability has become a critical source of differentiation (Tarafdar and Tanriverdi, 2022) as markets are increasingly fragmented and customer needs are more diverse. Although various factors contribute to a firm-level single-tech adoption within technology customization, our perspective combines a resource-based view to reveal insights into this phenomenon at the organizational complexity level, where technical know-how, customer-centric knowledge, and organizational dynamic capabilities coalesce into complex organizational capabilities that enable firms to develop specific value propositions. (Collis, 1994; M. L. Sheng, 2017; Wenzel et al., 2021). The reason behind the theoretical value of customization is its nonimitability. Competitors can see the customized outcome, but they do not know the effective practices of organizational routines, knowledge integration mechanisms, and technical skills of customization. (Barney et al., 2021; Yen Wong et al., 2020). Recent academic work has backed this theoretical foundation; scholars have consistently identified a strong positive association between entrepreneurial marketing capabilities and initiatives that customize technology, especially in B2B environments. (Elgarhy & Abou-Shouk, 2023; Ferreira et al., 2018; Johnson & Reimer, 2023).
Technology customization can be understood from four dimensions, namely, functionality adaptation, interface personalization, system integration, and evolutionary scalability (Queiroz et al., 2019). These dimensions cover a wide spectrum from superficial parameter tuning to structural architectural changes (Xie & Wang, 2025). This implies that the impact of technology customization as a strategic advantage goes beyond providing direct advantages to customers; it also represents a crucial connection between market intelligence and the ultimate value that an organization can offer (Bulchand-Gidumal et al., 2024; Gao & Liu, 2023). Evidence that suggests firms with superior customization capabilities are considerably more customer-oriented has been published in top-tier journals such as the Information Systems Research and Journal of Retailing and Consumer Services (Mao et al., 2024; X. Sheng & Zolfagharian, 2014). This relationship is especially pronounced in complex market settings, with studies published in International Marketing Review and Journal of Service Research confirming that the customer complexity considerably reinforces the relationship between technology customization initiatives and customer orientation practices (Lee & Wei, 2023; Salojärvi et al., 2015). Customization operationalizes the opportunity recognition of entrepreneurial marketing and the responsiveness of customer orientation by translating customer insights into practical technological adaptations (Rupp

et al., 2021). In meta-analyses published jointly by the Journal of Strategic Marketing and the Journal of the Academy of Marketing Science, more recent evidence validates these relationships even further, such as the finding that the relationship between entrepreneurial marketing and various customer outcomes is consistently stronger in dynamic and uncertain environments than in stable markets, which is precisely where the critically different nature of technology customization capabilities become most strategically important (Dessart et al., 2015; Morgan & Anokhin, 2020).

2.3. Customer orientation

An orientation towards customers is a strategic mindset and organizational capability focused on understanding customers, their needs, preferences, and problems. Theoretical Background: Customer Orientation Theory. Conceptually grounded in market orientation theory, customer orientation is defined as a firm-wide, cross-functional business strategy that puts customer interests in the forefront of strategic and operational decision making. (Jaworski & Kohli, 1993; Kohli & Jaworski, 1990). This orientation is reflected in the systematic collection, analysis, and use of customer data to inform decision-making and strategy. Recent studies have shown that customer orientation is a significantly important differentiation strategy for businesses in competitive markets, positively impacting innovation performance, quality of relationship, and customer loyalty. These effects are theoretically underpinned by customer orientation's potential to (1) lessen information asymmetries between providers and customers, (2) create value more intricately to satisfy all stakeholders, and (3) establish relational capital that is not easily imitated by competitors.

Customer orientation includes three distinct yet interrelated dimensions that feed into a cycle of ongoing learning and adaptation: customer knowledge acquisition (systematically collecting information about articulated and latent customer needs), knowledge dissemination (spreading customer insights across organizational boundaries and hierarchical levels), and responsive action (transforming customer knowledge into strategic decisions and operational changes). In technology-intensive contexts, customer orientation is critical as it links technical capabilities to market applications, enabling firms to connect nascent customer needs with viable technological solutions.(Arkadan et al., 2024; Lee & Wei, 2023; Smith & Jambulingam, 2018). This bridging role establishes natural synergies with both the opportunity recognition capabilities of entrepreneurial marketing and the need-matching processes of technology customization. Although the performance advantages of customer orientation are well-documented, these impacts are dependent on contextual elements such as market dynamism, intensity of competition, and the attributes of customers. (Bayighomog Likoum et al., 2020; Purwanti et al., 2022). The predictive element of customer orientation, understanding customers' future needs even before such needs are acknowledged by customers themselves, is congruent with entrepreneurial marketing's forward-thinking, proactive, and reactive behaviours to ensure market realisation that imply potential complementarities between both strategic orientations. (Lopes et al., 2021).

2.4. Customer complexity

Customer complexity is how the common factors view customer needs, wants, and behaviours in a more permanent multidimensional way in terms of technical needs, service needs, and relationship needs of the product. (Charan, 2007; Guilbault, 2018; Ni et al., 2024). All these dimensions together shape how firms engage and create value for customers in current markets. This complexity takes several forms as summarized below: differences in needs across different customer segments, complexity of technical specifications that require expertise, dynamism of preferences changing over time, interdependence of elements of the customer relationship, and creating complex webs of value. (Andrew Petersen et al., 2022; Thoumrungroje & Racela, 2022). Technological progress, industry fragmentation, globalization, and rising expectations from customers have made customers more complex than ever across sectors in recent years. This expanding complexity renders traditional, one-size-fits-all marketing strategies ineffective and forces firms to develop increasingly fine-grained understandings of the diverse and evolving demands of their customers. (Andrew Petersen et al., 2022; Kreuzer et al., 2020).

Given this multifaceted composition, customer complexity is predicted to act as a crucial moderating variable in the relationships among entrepreneurial marketing, technology customization, customer orientation, and customer satisfaction. It could also be that, with greater customer complexity, entrepreneurial marketing capabilities and technology customization become more critical to attaining desired customer outcomes. (S. C. Morrish et al., 2010; Peterson, 2020). However, when customer needs grow more diverse and sophisticated, there is a premium on "market sensing" and "opportunity recognition" entrepreneurial approaches, and customized technological solutions that address specific customer requirements. However, firms must have sophisticated capabilities for understanding the customers, developing solutions, and managing relationships to effectively manage customer complexity capabilities that align closely with entrepreneurial marketing and technology customization core elements. Indeed, as markets continue to grow more complex, the diversity of customer needs can challenge many firms, yet entrepreneurial marketing, with its focus on innovation, adaptability, and a sharper focus on the customer, is well equipped to address this, and firms with greater organizational agility and more sophisticated marketing approaches will be essential to meet such needs. (Dubey et al., 2020; Guerola-Navarro et al., 2024).

2.5. Hypotheses development

2.5.1. Direct effects of entrepreneurial marketing

Entrepreneurial marketing (EM) enables the integration of the entrepreneurial mindset with those of marketing, through which an entrepreneur can use the novelty of their business to achieve superior organizational performance focused on the customer. From a theoretical point of view, this can be explained by two complementary theoretical frameworks. The resource-based view (RBV) considers entrepreneurial marketing a dynamic capability leading to competitive advantage through unique resource configuration that cannot be imitated by competitors. In this sense, a firm's entrepreneurial marketing capabilities fit into the VRIN framework (valuable, rare, imperfectly imitable, non-substitutable) and are deeply associated with customer orientation, as they allow a firm to discover unmet needs in a more effective way than its competitors can (Barney et al., 2021; Barney & Hesterly, 2019). This line of thought is deepened when incorporating the dynamic capabilities theory, which highlights that entrepreneurial marketing allows firms to act as a vessel to sense market changes, seize customization opportunities, and realign their offering. (Teece, 2020). This ability to adapt is especially crucial in fast-changing markets where customer requirements undergo swift alterations.

The empirical findings about the relationship between EM and customer orientation are nuanced and context contingent. Research confirming this association shows that entrepreneurial marketing increases technology customization (Kowalkowski et al., 2024; Srivastava et al., 2024) and customer responsiveness (C Homburg, 2007; Miocevic et al., 2023)across contexts. Contradictory findings were reported by Ahmadi & O'Cass (2016; Haki et al., 2024), who found significance in manufacturing firms, suggesting that entrepreneurial marketing

cannot be seen as a single entity, but rather as a construct comprising different elements, as also discussed by Beugelsdijk et al. (2017). Explicitly, dimensions of proactiveness and resource leveraging are more favorable than dimensions of risk-taking and value creation. Such variation illustrates how the industry context, company size, and the environment may serve as moderating variables in the entrepreneurial marketing–customer orientation link. In settings with limited resources, such as small- and medium-sized enterprises (SMEs), the relationship seems to be notably strong; entrepreneur marketing allows SMEs to counter resource shortages by means of creative strategies regarding customer interaction (S. Morrish et al., 2020).
H1: Entrepreneurial Marketing has a positive effect on Customer Orientation
H2: Entrepreneurial Marketing has a positive effect on Customer Satisfaction

2.5.2. Mediating mechanisms

This study suggests that technology customization is a critical mediating mechanism in the links between entrepreneurial marketing, customer orientation, and customer satisfaction. The main feature of entrepreneurial marketing is to provide capabilities to firms for recognising opportunities for adapting technologies that you create, which in turn improves your customer orientation because of the wealth of knowledge you have about the needs and preferences of your customers. (X. Li et al., 2023). Framed within the context of dynamic capabilities theory, this mediation process is further explicated in that entrepreneurial marketing enables the organization to acquire technology customization capabilities, and then, this enables the firm to enhance customer-focused organizational processes. (Crick et al., 2023; Zahedi & Naghdi Khanachah, 2021). This relationship is supported by three complementary theoretical mechanisms: first, the need for developing customized technological solutions triggers systematic collection and analysis of granular customer data, strengthening customer knowledge acquisition directly as a foundational dimension of customer orientation; second, technology customization efforts necessitate cross-functional collaboration across technical and customer-facing functions, facilitating the organization-wide dissemination of customer insights; third, observed success in customization efforts serves as a tangible demonstration of responsiveness to customer needs, reinforcing customer-centric decision processes across the organization. (Imran & Jingzu, 2022; Liu et al., 2023). Empirical research also supports the theoretical mechanisms, Baah et al. (2024) & Münch et al. (2022)Firms with advanced technical capabilities to customize their "technology" exhibited significantly higher customer orientation within digital platform contexts. (Bekata & Kero, 2024; Utami & Nuvriasari, 2023). Kankam-Kwarteng et al. (2021)Found that technology personalization initiatives affect organizational customer orientation positively by improving acquisition and cross-functional dissemination of customer knowledge.
The second mediation pathway proposed that the impact of entrepreneurial marketing on customer satisfaction is partially transmitted through technology customization capabilities, and is then amplified through customer orientation. (Arkadan et al., 2024; Hussain et al., 2021) . At a theoretical level, this is based on user expectation-confirmation theory and value co-creation theoretical frameworks, which suggest that tailored technological solutions are a more direct solution to a consumer demand than commodity-type technological solutions, enhancing perceived value, decreasing the gap between customer expectations and performance of the actual product, and enhancing satisfaction in the end. Customization allows firms to go beyond market-average offerings to deliver individualized solutions that better match specific customers' idiosyncratic needs. (Yousaf et al., 2020). Also, the study introduces a sequential mediation mechanism wherein customer orientation mediates the connection between technology customization and customer satisfaction, completing an integrative causal path whereby rich customer insights produced by technology customization strengthen customer orientation through improved understanding of customer needs that are then transformed into superior customer satisfaction by systematically ensuring that firm offerings always align with both overt and tacit customer expectations. (Fruchter & Wiszniewska-Matyszkiel, 2024; Nair & Manohar, 2024). This sequential process builds on one another, leading to a wider theoretical framework where the concept of entrepreneurial marketing ultimately leads to customer satisfaction, not necessarily through a direct effect but multiple channel effects complementing one another. The resulting model builds on resource-based view, dynamic capabilities, and market orientation theories to demonstrate the complex mechanisms through which entrepreneurial marketing leads to superior customer outcomes. (Ahmed, 2024; Wenzel et al., 2021).
H3: Technology customization has a positive effect on customer orientation.
H4: Technology customization has a positive effect on customer satisfaction.
H5: Customer orientation has a positive effect on customer satisfaction.
H6: Technology customization mediates the relationship between entrepreneurial marketing and customer orientation.
H7: Customer orientation mediates the relationship between technology customization and customer satisfaction.

2.5.3. Moderating role of customer complexity

Customer complexity moderates two important relationships within our proposed framework. Customer complexity enhances the relationship between entrepreneurial marketing and technological customization first. (Han et al., 2018; Thoumrungroje & Racela, 2022). The more sophisticated the customers' needs are, the more valuable the opportunity-driven and innovative dimensions of entrepreneurial marketing are for potential opportunity detection for customization. (Peterson, 2020). The moderating effect is transmitted through three complementary channels: the greater the customer complexity. (Wang et al., 2025), the greater the leverage of entrepreneurial marketing's opportunity detection capability because it is more difficult yet potentially more profitable to spot potential opportunities for customization where customers' needs are diversified and sophisticated; diversified and sophisticated needs of the customer generate greater opportunity for differentiation through innovative marketing approaches, with the payoff on investments on entrepreneurial marketing; and greater customer complexity generates greater uncertainty regarding best means of value creation, amplifying the value of entrepreneurial marketing focus on experimentation and flexibility. There is empirical evidence by(Xu et al., 2022). As well as Li et al. attesting to the moderating effect, demonstrating entrepreneurial marketing effectiveness on technological adaptation as well as on creation of solutions is much greater within markets with greater diversity and sophistication of customers, especially within diversified B2B settings, compared to mass customized B2C settings (Kowalkowski et al., 2024).
Second, technological customization is aided by customer complexity through various channels (Xin et al., 2024). Higher customer complexity increases the value of customized technological solutions for the creation of customer insights, further entrenching customer orientation. It is through these activities that this moderating influence is achieved: higher customer complexity implies greater necessity for deeper understanding of customers, which makes insights garnered through technological customization of greater strategic worth; complex demands entail more extensive, deeper interactions with customers through the customization process, enabling greater learning for customers; and more customer complexity makes customer insights of greater strategic worth, resulting in more extensive deployment and communication of customer knowledge arising from customization activities (Camară, 2024). Morgan et al. (2019), empirical evidence supports this moderating influence by demonstrating that the relationship between customization ability for developing customer

knowledge is stronger under more heterogeneous as well as advanced customer environments, and technology personalization affects organizational customer-orientation more strongly in high-complexity service environments compared to standardized product markets. These theoretical formulations, combined with these findings, suggest that customer complexity is a robust boundary condition by which entrepreneurial marketing as well as technological customization are more effective at influencing customer outcomes (Dou et al., 2019; Yachou Aityassinec et al., 2022).

H8: Customer complexity positively moderates the relationship between entrepreneurial marketing and technology customization, such that the relationship is stronger when customer complexity is higher.

H9: Customer complexity positively moderates the relationship between technology customization and customer orientation, such that the relationship is stronger when customer complexity is higher.

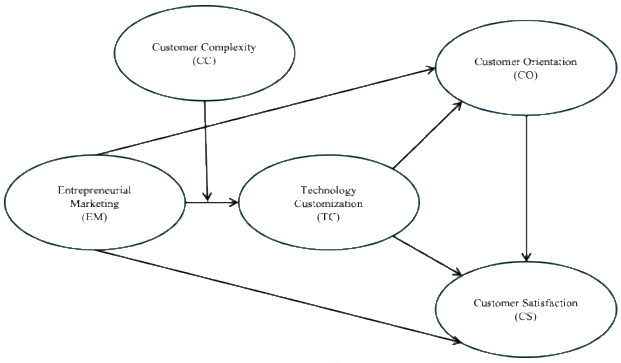

Fig. 1: Conceptual Framework.

3. Research Methodology

3.1. Sample and data collection

This research used system integrator start-ups as the unit of analysis, focusing on emerging companies founded in the last seven years that employ fewer than 100 people. These are specialized technology companies that provide integrated solutions, mostly focusing on SMEs but catering to clients of all sizes in a wide range of industry sectors. The sampling method for this study painstakingly zeroed in on system integrators providing a wide range of technology integration services, ranging from enterprise software and IoT systems to cloud infrastructure, data analytics, and security solutions. The purposeful concentration toward system integrator start-ups creates an excellent climate to investigate entrepreneurial marketing and technology tailoring, as these companies continually must modify standardized technologies that can be made to order to serve distinct consumer demands in multiple industries and organizational sizes.

Between December 2023 and February 2024, the survey was distributed to 945 prospective respondents. After discarding incomplete answers and respondents that did not pass attention check questions, this study was left with a final sample of 279 valid responses, giving a response rate of 24.3% Table 1: Minimum Sample Size for Path Models with (based onHair & Alamer, (2022) with 9 Parameters, thus the Required Sample Size is sufficient for > 1% level of testing significance hypothesis testing. Data Source: Data was collected through a structured online survey sent only to those in C-level positions (CEO, CFO, CTIO, COO) of system integrator start-ups, ensuring respondents had a global perspective regarding the strategic aspects of technology and those that were market-facing.

Except for performance measures, all constructs were measured using 7-point Likert scales, with 1 = strongly disagree and 7 = strongly agree, to obtain nuanced assessments of entrepreneurial marketing practices, technology customization capabilities, customer orientation, and customer satisfaction. The 7-point scale was selected instead of a different number to ensure that there was adequate discrimination in the responses, while also ensuring reliability and ease of use for C-level respondents who may have limited time availability. Machine learning warfare 4 data at scale Trends system integrator start-ups are a particularly apt context for this research: their key value proposition is indeed the customization of technological solutions, and they cater to a wide market, from small start-ups to large corporations in many industries, hence needing to integrate entrepreneurial marketing with technology customization capabilities at scale.

The final sample included firms from information technology (27.6%), financial services (23.8%), healthcare (16.2%), manufacturing (19.4%), and telecommunications (12.9%). In terms of firm size, 30.8% were small enterprises (less than 100 employees), 44.2% were medium-sized (100-1,000 employees), and 25.0% were large enterprises (more than 1,000 employees). Regarding respondent positions, 37.5% were marketing executives, 30.1% were technology or IT executives, 22.2% were general managers, and 10.2% held other senior positions with cross-functional responsibilities.

Table 1: Comprehensive Sample Characteristics

Characteristic	Category	Frequency (n)	Percentage (%)
Industry	Information Technology	77	27.6
	Financial Services	66	23.8
	Manufacturing	54	19.4
	Healthcare	45	16.2
	Telecommunications	36	12.9
Firm Size	Medium (100-1,000 employees)	123	44.2
	Small (<100 employees)	86	30.8
	Large (>1,000 employees)	70	25.0
Respondent Position	Marketing Executive	105	37.5
	Technology/IT Executive	84	30.1
	General Manager	62	22.2
	Other Senior Positions	28	10.2
Respondent Experience	6-10 years	120	43.0
	3-5 years	95	34.1
	>10 years	64	22.9
Total Sample		279	100%

3.2. Measures

All constructs were measured using multi-item scales adapted from established literature, with modifications to fit the research context, employing seven-point Likert scales (1 = strongly disagree, 7 = strongly agree). Entrepreneurial Marketing (EM) (Eggers et al., 2020; Whalen et al., 2022). Technology Customization (TC) (Müller et al., 2024; Shi et al., 2024). Customer Orientation (CO) (Smith & Jambulingam, 2018; Thoumrungroje & Racela, 2022). Customer Satisfaction (CS) (Abrar et al., 2020; Indriastiningsih et al., 2023; Söderlund & Oikarinen, 2018). Customer Complexity (CC) (Han et al., 2018; Thoumrungroje & Racela, 2022). Table 2 presents the complete list of measurement items, factor loadings, average variance extracted (AVE), and composite reliability (CR) values.

Table 2: Measurement Items, Factor Loadings, and Reliability Statistics

Construct and Item	Loading	CA	AVE	CR
Entrepreneurial Marketing (EM)		0.780	0.695	0.872
We consistently look for new business opportunities	0.825			
We leverage our limited resources effectively to accomplish seemingly impossible goals	0.809			
We are willing to take calculated risks in pursuing new business opportunities	0.866			
We are frequently the first to market with new products and services	0.825			
Technology Customization (TC)		0.864	0.785	0.917
We can effectively tailor our technological solutions to meet specific customer requirements	0.883			
Our technological offerings can be easily adapted to different customer contexts	0.887			
We have established processes for adapting our technologies to customer specifications	0.889			
Customer Orientation (CO)		0.906	0.842	0.941
We continuously collect information about customer needs and preferences	0.904			
Customer insights are regularly shared across departments	0.915			
Customer interests are a top priority in our decision-making processes	0.933			
Customer Satisfaction (CS)		0.902	0.773	0.932
Our customers are highly satisfied with our offerings	0.869			
Our solutions consistently meet or exceed customer expectations	0.910			
Our customers prefer our solutions over competing alternatives	0.878			
Our customers frequently recommend our solutions to others	0.859			
Customer Complexity (CC)		0.874	0.725	0.913
Our customers have highly diverse needs and preferences	0.847			
Our customers have sophisticated and technically advanced requirements	0.855			
Our customer relationships involve multiple stakeholders with different priorities	0.879			
Identifying true customer needs is often a complex process	0.825			

Note: All factor loadings are significant at $p < 0.001$. AVE = Average Variance Extracted; CR = Composite Reliability.

3.3. Measurement validation

The reliability and validity of measures were assessed through a measurement model using partial least squares structural equation modeling (PLS-SEM). The measurement model included all multi-item constructs (entrepreneurial marketing, technology customization, customer orientation, customer satisfaction, and customer complexity). Model assessment followed established PLS-SEM evaluation criteria rather than covariance-based fit indices.

All items had significant loadings on their respective constructs (p 0.50), which provides further support for convergent validity. (Carlson & Herdman, 2012; Cheung et al., 2024). Two common methods used in PLS-SEM for assessing discriminant validity were applied. First, the analysis validated that the square root of AVE for every construct was larger than its correlations with other constructs. (Fornell & Larcker, 1994, 1981). Second, the heterotrait-monotrait (HTMT) ratios were calculated, all of which were lower than 0.85, also confirming discriminant validity (Dijkstra & Henseler, 2015; Henseler & Sarstedt, 2013) . The correlation matrix, reliability statistics, and square roots of AVE values are shown in Table 2 with the data on the diagonal.

Table 3: Fornell Larcker

	Customer Complexity	Customer Orientation	Customer Satisfaction	Entrepreneurial Marketing	Technology Customization
Customer Complexity	0.852				
Customer Orientation	0.581	0.917			
Customer Satisfaction	0.592	0.787	0.879		
Entrepreneurial Marketing	0.649	0.644	0.620	0.834	
Technology Customization	0.679	0.733	0.717	0.699	0.886

3.4. Analytical approach

The hypotheses were examined using partial least squares structural equation modelling (PLS-SEM). Because PLS-SEM is well-suited for prediction-oriented research, capable of constructing and estimating complex models from a large number of constructs, and can be employed to assess direct and indirect relationships (J. Hair & Alamer, 2022). Furthermore, PLS-SEM is suitable for this study due to its ability to estimate moderating effects in complex models.

To test the moderation hypotheses (H8-H9), the approach was used in two stages, as suggested by J. Hair & Alamer (2022), which is especially powerful in terms of multiple moderator analysis in PLS-SEM. Mediation effects were evaluated through bootstrapping procedures with 5,000 resamples that yielded bias-corrected confidence intervals, which is the recommended method for assessing indirect effects in PLS-SEM (J. F. Hair et al., 2021; J. F. Hair et al., 2020).

The structural model was assessed according to a systematic assessment procedure. Collinearity was first checked before analyses by looking at the variance inflation factor (VIF) values, whereby no VIF value was above 3.3. Then, bootstrapping was used to evaluate the significance and relevance of the path coefficients. The explanatory power of the model was assessed through the R^2 values associated with

endogenous variables, which were 0.37 for technology customization, 0.42 for customer orientation, and 0.48 for customer satisfaction. This was also confirmed via blindfolding (Q^2 values > 0), and affirmed the predictive validity of our model.

4. Results

4.1. Hypothesis testing

4.1.1. Model fit

Using recommended PLS-SEM goodness-of-fit indices, model-fit assessment supports the appropriate specification of the model in the current study. Both saturated (0.061) and estimated (0.064) model Standardized Root Mean Square Residual (SRMR) values are below the conservative cutoff of 0.08 suggested by (J. F. Hair & Sarstedt, 2019), which indicates an acceptable approximation fit. The very small difference in SRMR values indicates that the theoretically constrained estimated model fits empirical data as well as the perfectly fit saturated model. The unweighted least squares discrepancy (d_ULS) and geodesic distance (d_G) offer further perspectives on model-data correspondence, with d_ULS performing slightly better for the saturated model (0.562 vs. 0.624) and d_G indicating a marginally better fit for the estimated model (0.352 vs. 0.382). Modeling this pattern is conceptually aligned with the differing sensitivities of these indices to different types of model misspecification. Although the chi-square statistics and Normed Fit Index (NFI) values are typically used in covariance-based SEM, they serve as supplementary indicators of an adequate fit in a PLS-SEM model. The NFI values of the saturated (0.834) and estimated (0.854) models also approach the recommended cut-off of 0.90, with the estimated model fitting the data better, which is consistent with the theoretical linkages articulated in the research model. Although the latter fit indices provide useful diagnostic information in PLS-SEM contexts, it should be noted that these indices are to be interpreted alongside the main evaluation criteria of predictive relevance (Q^2) and explanatory power (R^2), both of which had already shown good values in the present study. In general, the structural relationships between entrepreneurial marketing, technology customization, customer orientation, customer complexity, and customer satisfaction are presented well in the proposed theoretical model.

Table 4: Model Fit

	Saturated model	Estimated model
SRMR	0.061	0.064
d_ULS	0.562	0.624
d_G	0.382	0.352
Chi-square	591.283	518.184
NFI	0.834	0.854

4.1.2. Direct and mediating effects

The PLS-SEM analysis of direct effects provides substantial support for the hypothesized structural relationships, with six of seven proposed paths demonstrating statistical significance. Technology customization emerges as a pivotal mediating construct, receiving significant influence from both entrepreneurial marketing ($\beta = 0.420$, $t = 7.152$, $p < 0.001$) and customer complexity ($\beta = 0.337$, $t = 5.234$, $p < 0.001$), consistent with resource-based view propositions that emphasize the importance of complementary organizational capabilities and external market conditions in developing distinctive competencies. Technology customization subsequently exerts a significant positive influence on both customer orientation ($\beta = 0.553$, $t = 7.360$, $p < 0.001$) and customer satisfaction ($\beta = 0.256$, $t = 3.474$, $p < 0.01$), although with notably different magnitudes—a pattern that aligns with prior research suggesting customization capabilities more directly impact organizational processes before translating to external outcomes. Entrepreneurial marketing significantly enhances customer orientation ($\beta = 0.258$, $t = 3.609$, $p < 0.001$) but fails to establish a direct significant pathway to customer satisfaction ($\beta = 0.094$, $t = 1.798$, $p = 0.072$, CI95% [-0.008, 0.194]), contradicting some previous findings but supporting the argument that entrepreneurial approaches primarily influence customer outcomes through intermediate organizational capabilities rather than direct effects. The strongest relationship in the model exists between customer orientation and customer satisfaction ($\beta = 0.538$, $t = 6.447$, $p < 0.001$), reinforcing the well-established market orientation-performance linkage in the context of technology integration startups. The model demonstrates substantial explanatory power for all endogenous variables ($R^2TC = 0.37$, $R^2CO = 0.42$, $R^2CS = 0.48$), exceeding the moderate thresholds recommended for complex organizational phenomena and suggesting robust predictive relevance in managerial applications.

Table 5: Structural Model Results - Direct Effects

Path	Path coefficient	Standard deviation	T- Statistic	P values	95% Confidence Interval Lower	95% Confidence Interval Upper	Decision
Customer Complexity -> Technology Customization	0.337	0.064	5.234	0.000	0.221	0.475	Support
Customer Orientation -> Customer Satisfaction	0.538	0.083	6.447	0.000	0.372	0.700	Support
Entrepreneurial Marketing -> Customer Orientation	0.258	0.071	3.609	0.000	0.118	0.398	Support
Entrepreneurial Marketing -> Customer Satisfaction	0.094	0.053	1.798	0.072	-0.008	0.194	Not Support
Entrepreneurial Marketing -> Technology Customization	0.420	0.059	7.152	0.000	0.300	0.532	Support
Technology Customization -> Customer Orientation	0.553	0.075	7.360	0.000	0.397	0.690	Support
Technology Customization -> Customer Satisfaction	0.256	0.074	3.474	0.001	0.108	0.397	Support
R^2							
TC	0.37						
CO	0.42						
CS	0.48						

Table 6. The bootstrapping analysis (5,000 resamples) reveals a complex network of significant indirect effects that illuminate the mediating mechanisms through which entrepreneurial marketing and customer complexity influence downstream outcomes. Technology customization serves as a central mediating construct, enabling the strongest observed indirect pathway from technology customization to customer satisfaction through customer orientation (β = 0.297, t = 4.730, p < 0.001, CI95% [0.186, 0.430]). This robust sequential mediation validates the theoretical premise that customized technical solutions primarily enhance customer satisfaction by first strengthening a firm's capacity to understand and respond to customer needs—a finding consistent with capabilities-based perspectives in system integration contexts.

Entrepreneurial marketing exhibits significant indirect effects through three complementary pathways: via technology customization (β = 0.108, t = 3.246, p = 0.001, CI95% [0.044, 0.175]), via customer orientation (β = 0.139, t = 3.039, p = 0.002, CI95% [0.059, 0.235]), and through sequential mediation involving both technology customization and customer orientation (β = 0.125, t = 4.107, p < 0.001, CI95% [0.072, 0.190]). These multiple significant indirect paths, coupled with the previously identified non-significant direct effect on customer satisfaction, indicate full mediation—a pattern suggesting that entrepreneurial marketing approaches in system integrator startups translate into customer satisfaction primarily by enhancing intermediate organizational capabilities. Particularly noteworthy is the strong indirect effect of entrepreneurial marketing on customer orientation through technology customization (β = 0.232, t = 5.591, p < 0.001, CI95% [0.152, 0.314]), which reinforces the theoretical argument that entrepreneurial approaches foster customer-centricity by enabling technological adaptation.

Customer complexity demonstrates significant indirect influence through multiple pathways, with substantial effects on customer orientation through technology customization (β = 0.186, t = 4.097, p < 0.001, CI95% [0.108, 0.286]) and on customer satisfaction through both simple (β = 0.086, t = 2.645, p = 0.008, CI95% [0.031, 0.158]) and sequential mediation (β = 0.100, t = 3.456, p = 0.001, CI95% [0.054, 0.166]). These findings illuminate how complex customer requirements drive the development of customization capabilities that subsequently enhance both organizational processes and ultimate customer outcomes. Collectively, these mediation results provide empirical validation for the theoretical model while offering nuanced insights into how entrepreneurial marketing and customer complexity influence customer satisfaction in system integrator startups primarily through the development of technology customization capabilities and enhanced customer orientation.

Table 6: Bootstrapping Results for Indirect Effects

Indirect path	Boot SE	T statistics	P values	95% Confidence Interval	
				Lower	Upper
Entrepreneurial Marketing -> Technology Customization -> Customer Satisfaction	0.108	3.246	0.001	0.044	0.175
Entrepreneurial Marketing -> Customer Orientation -> Customer Satisfaction	0.139	3.039	0.002	0.059	0.235
Technology Customization -> Customer Orientation -> Customer Satisfaction	0.297	4.730	0.000	0.186	0.430
Customer Complexity -> Technology Customization -> Customer Orientation -> Customer Satisfaction	0.100	3.456	0.001	0.054	0.166
Customer Complexity -> Technology Customization -> Customer Orientation	0.186	4.097	0.000	0.108	0.286
Entrepreneurial Marketing -> Technology Customization -> Customer Orientation -> Customer Satisfaction	0.125	4.107	0.000	0.072	0.190
Customer Complexity -> Technology Customization -> Customer Satisfaction	0.086	2.645	0.008	0.031	0.158
Entrepreneurial Marketing -> Technology Customization -> Customer Orientation	0.232	5.591	0.000	0.152	0.314

4.1.3. Moderating effects

The moderated mediation analysis reveals significant but negative interaction effects, presenting an unexpected theoretical nuance in the moderating role of customer complexity. Hypothesis H8, which posited that customer complexity would strengthen the indirect relationship between entrepreneurial marketing and customer orientation through technology customization, is supported in terms of statistical significance (β = -0.037, t = 2.216, p = 0.027) but with directionality contrary to expectations. The confidence interval [-0.078, -0.012] excludes zero, confirming the robustness of this effect. Similarly, H9 testing the moderated indirect path to customer satisfaction shows a significant negative moderation (β = -0.017, t = 2.001, p = 0.045, CI95% [-0.038, -0.005]), indicating that customer complexity attenuates rather than amplifies the effectiveness of entrepreneurial marketing in enhancing customer satisfaction through technology customization.

These counterintuitive findings suggest an important boundary condition in the theoretical framework: while customer complexity directly drives technology customization (as demonstrated in the direct effects analysis), it simultaneously dampens the ability of entrepreneurial marketing to effectively leverage customization capabilities for enhancing customer orientation and satisfaction. This pattern aligns with recent theoretical developments in complexity theory, suggesting that beyond certain thresholds, environmental complexity can overwhelm organizational capabilities, creating diminishing returns or even negative outcomes from otherwise effective strategic approaches. In highly complex customer environments, entrepreneurial marketing initiatives may face challenges in effectively translating market insights into precisely targeted customization solutions, potentially due to information overload, conflicting customer requirements, or increased coordination costs. These findings contribute important theoretical refinement to our understanding of when and how entrepreneurial marketing approaches may be most effective in technology-intensive business contexts.

Table 5: Presents The Results of the Moderation Analyses Testing H8-H9

Path	Hypothesis	Coefficient	T statistics	P values	95% Confidence Interval	
					Lower	Upper
Customer Complexity x Entrepreneurial Marketing -> Technology Customization -> Customer Orientation	H8	-0.037	2.216	0.027	-0.044	-0.006
Customer Complexity x Entrepreneurial Marketing -> Technology Customization -> Customer Satisfaction	H9	-0.017	2.001	0.045	-0.078	-0.012

5. Discussion of Research Findings

5.1. Economic foundations of entrepreneurial marketing's dual influence mechanism

This study clarifies a crucial shift in the stream of entrepreneurial marketing theory, moving from direct effect-oriented frameworks to capability-mediated ones, which hold immense economic as well as accounting implications. The findings suggest that the impact of entrepreneurial marketing on the satisfaction of the customer is solely capability-mediated by technology customization capabilities, hence refuting earlier thoughts, which proposed direct causal linkages. (Chang et al., 2024; Mikalef & Parmiggiani, 2022; Shi et al., 2024)This capability-mediation model contrasts with the mainstream entrepreneurial marketing literature, whose dominant tradition has been to posit entrepreneurial orientation's direct implications for the markets (Hultman & Oghazi, 2024). This paradigm shift, however, requires careful consideration of the limitations placed by resource scarcity or new entrepreneurial contexts whose infrastructural base for capability formation is weak.

The theoretical contribution is in line with current empirical evidence showing that marketing capabilities serve as mediators of the entrepreneurial orientation-performance relationship, with digital marketing capabilities producing better performance results compared to conventional approaches. (Muñoz et al., 2020). Nevertheless, it is necessary to examine alternative explanations, including those rooted in institutional theory, which suggest that direct entrepreneurial marketing effects continue to exist in situations where institutional settings are poor and formal capability-enhancing mechanisms face significant barriers. Another rival explanation comes from resource scarcity theory, which suggests that startups with limited resources might find themselves relying on direct marketing efforts until they have enough capital for investments in capability improvement.

Financial performance implications related to this capability-mediated model are substantial as well as measurable. Rather than emphasizing immediate returns from the market, entrepreneurial marketing investments need to be judged based on their performance in terms of capability-building outcomes, suggesting payback periods can stretch longer but possibly generate higher sustainable returns in the longer term. Chang et al, (2024)Present empirical evidence that shows a sizable improvement in ROI for companies with high congruence of marketing capabilities and strategy in the context of international markets. This evidence strengthens the theoretical postulation that entrepreneurial marketing is a "meta-capability" that requires stringent cost-benefit analysis as against the usual practices of direct allocation of marketing expense based on costs, as in the case of direct marketing costs, which has important implications for management accounting systems as well as clarity in financial reporting, particularly for new startups in the quest for investment, where the capability asset's value is most often under-valued using mainstream accounting conventions.

The theoretical contribution posits the "Capability-Mediated Entrepreneurial Marketing Model" (CMEMM), which operates under three successive stages with distinct economic features: sensing capabilities (the detection of market opportunities in tandem with corresponding market research costs), seizing capabilities (the development of technology solutions with implications for R&D costs), and reconfiguring capabilities (the reorganization of organizational processes, including costs of operational restructuring). Muñoz et al, (2020)provide empirical support for the model, showing cost implications for transaction costs within entrepreneurial settings, thus highlighting the significance of trade-offs in resource allocation during capability implementation. The model allows for more accurate cost-benefit evaluation of entrepreneurial marketing investments and supports evidence-based financial planning for activities involved in capability development, highlighting an important gap in the literature on the determinants of capability development in the context of dynamic capabilities.

5.2. The technology customization as an economic value driver: examining costs and maximizing revenues

The customization of technology is recognized as a dynamic ability that provides enormous economic returns, thus creating what economists call "relationship-specific assets," with important economic consequences. Customization research shows that return on investment in customization activities on behalf of organizations exceeds that of standardized activities despite the high upfront implementation costs and longer amortization periods. Abraham & Edelman, (2024) Present strong empirical evidence to support assertions that customized experiences provide high returns on marketing investments, which have been demonstrated through Netflix's focus on extended viewing times because of personalized recommendations. The evidence supports the technology customization theoretical model as central in creating economic value compared to operational capabilities.

Alternative theoretical frameworks are worthy of close inspection. Transaction cost economics suggests that customization can lead to hold-up problems and issues of asset specificity, which can threaten the creation of long-term value. (Gibbons, 2010). Resource-based view proponents argue that standardization can bring economies of scale and resource efficiency that could overwhelm the benefits of customization in certain settings. Institutional theory provides an alternative view, arguing that the success of customization is contingent upon institutional drivers for innovation and intellectual property protection. These differing interpretations highlight the need for contingent explanations to describe the conditions under which customization capabilities can create or destroy value.

The modern economic landscape, defined by digital transformation, highlights the relevance of technology customization in value creation. A study by Gagan Deep, (2023) & Zhao et al, (2024)Proved that digital leaders in this space reported significantly higher annual total shareholder returns compared to their less-effective counterparts, realizing dramatic decreases in operational expenses through systematic digital transformation strategies along with considerable productivity improvements specific to their industries. Such findings support theoretical models that claim technology customization uses artificial intelligence and machine learning algorithms to minimize customization costs while maintaining differentiation benefits. Ziakis et al, (2022) Provide extensive evidence in the form of a thorough scrutiny of research studies, showing that neural networks enjoy unparalleled accuracy in predicting end-users' buying intentions, thus supporting the economic viability of AI-driven customization platforms.

A rigorous analysis suggests potential constraints on the effectiveness of customization. In mature markets with commoditized products, the advantages of customization can be lost as customers are less willing to pay higher premiums. Similarly, in regulated industries, the scope for customization can be limited by compliance requirements, thus minimizing the prospects for value creation. As theorized by network effects theory, in platform markets, standardization can generate more value by driving compatibility and increasing users, thus challenging the universalizability of customization strategies.

5.3. Paradox of complexity: trade-off considerations regarding resource allocation and economic constraints

The paradox of complexity is an important development in economic theory, explaining cost-benefit considerations that were previously unaddressed and impacting entrepreneurial performance within a range of environmental settings, along with measurable trade-offs in

resource management. The paradox explains that while customer complexity develops the ability to customize technology, it simultaneously lowers entrepreneurial marketing effectiveness, with certain economic constraints. Lafuente et al, (2017)Reaffirm this assertion in a comparative study that was carried out in several countries, with a negative correlation between levels of entrepreneurial activity and GDP per capita, and coordination costs increasing exponentially in complex entrepreneurial environments. Empirical data also bolsters the theoretical model, putting complexity as a systemic constraint on the effectiveness of entrepreneurial marketing.

Several alternative theoretical frameworks deserve close inspection. Organizational learning theory holds that complexity can initially hinder performance but eventually enhance an organization's abilities through experiential learning processes. (Levinthal, 1997; Rerup & Levinthal, 2014). Dynamic capabilities theory further maintains that repeated exposure to complexity may develop the sense, seize, and reconfigure capabilities over time, potentially reversing the negative impacts evident in cross-sectional analysis. Evolutionary economics presents an additional perspective, contending that complexity is an environmental selection pressure, thus improving the competencies of surviving firms, leading to the possibility of the complexity paradox as temporary rather than permanent.

The economic underpinnings are based on measurable coordination costs, with startups as system integrators facing high cost increases as they traverse varied stakeholder expectations. (Naskar et al., 2025)Also supports this statement by demonstrating that high-performance work systems can undermine organizational effectiveness due to structural rigidity in challenging conditions, thus substantiating the complexity paradox by systematic quantification of performance measures. The coordination cost mechanism that governs this is in line with the transaction cost economics principles, where complex customer environments lead to high transaction costs stemming from uncertainty, longer decision-making times, and investments committed solely to relationships.

Institutional theory offers a variety of interpretations, suggesting that the effect of complexity varies according to institutional contexts. Where strong institutional frameworks promote entrepreneurship, complexities could be better managed by well-established networks and supportive structures. However, in weak institutional environments, the effect of complexity could be exacerbated by a lack of supporting infrastructure. Cognitive psychology-based arguments focus on the limitations of bounded rationality, such that the complexity may outstrip the cognitive capacities of decision-makers, causing them to use simplified heuristics that are not necessarily maximizing performance.

5.4. Customer focus, satisfaction, economic justification, and digital integration

Customer orientation and satisfaction enrich the market orientation theory through the integration of measurable economic outcomes while establishing the validity of performance measurement systems that are critical in management accounting systems. The empirical support through the sequential mediation model enhances the value creation concept based on the service-dominant logic, in addition to measurable financial outcomes. Barth et al, (1998) & Truong & Berrone, (2022)Demonstrate that customer lifetime value has a great impact on market valuation, and services that are need-oriented have high correlations with repurchase behavior. This evidence validates the theoretical claim that customer orientation acts as a mediator mechanism, translating technical competence into market results and not a pure organizational attribute.

It is necessary to consider competing conceptual frameworks. With intense market competition, customer orientation might create lower returns due to all competitors adopting similar approaches, which could lead to customer orientation capabilities being commoditized. Based on resource dependence theory, overemphasis on customer orientation might create dependencies that hamper strategic agility. In addition, agency theory highlights potential agency conflicts with investments in customer orientation that benefit customers but harm shareholders, particularly in the short run. These different interpretations present considerable boundary conditions affecting the efficacy of customer orientation.

Contemporary AI-driven customer analytics platforms demonstrate measurable ROI improvements through enhanced customer orientation capabilities. Berger et al, (2006) & Gadgil et al, (2023)Validate machine learning workflow, achieving exceptional accuracy in customer lifetime value prediction with substantial average CLV increases per customer through optimized targeting. Investment in customer orientation capabilities requires systematic evaluation, with analysis showing significant implementation costs for comprehensive systems, demonstrating reasonable payback periods through improved customer retention and enhanced pricing power.

Critical evaluation reveals potential limitations and boundary conditions. In B2B markets with sophisticated customers, excessive customer orientation may signal weakness rather than strength, potentially reducing negotiating power. Cultural contexts may moderate customer orientation effectiveness, with relationship-oriented cultures potentially benefiting more than transaction-oriented cultures. High-technology environments demonstrate competitive intensity effects where customer orientation becomes necessary but insufficient for superior performance, suggesting that customer orientation may evolve from competitive advantage to competitive parity over time, requiring continuous capability enhancement to maintain differentiation.

5.5. Policy implications and the regulatory framework considerations

The findings have significant implications for fintech regulatory frameworks, particularly regarding personalization algorithms and customer data utilization. The European Digital Services Act and similar regulations require algorithmic transparency in customization processes, creating compliance costs for affected firms. Atz et al, (2024)Provide empirical validation demonstrating that bid-ask spreads decrease following ESG disclosure mandates, with larger liquidity improvements when mandates are implemented by government institutions. These findings support regulatory frameworks that balance transparency requirements with innovation incentives.

Policy implications should include an evaluation of potential unforeseen consequences. Higher compliance costs can impose an unfair disadvantage on smaller entrepreneurial firms, potentially creating entry barriers favoring established industry players. Regulatory theory posits that complex regulations can disproportionately favor large firms with regulatory know-how at the expense of nascent innovative firms. Issues of reduced national competitiveness arise when local regulations place costs on firms that are not incurred by foreign rivals, especially on local entrepreneurial firms.

ESG disclosure requirements increasingly intersect with technology customization capabilities. (Momtaz et al., 2024)Demonstrate positive effects of ESG disclosure on SME financial performance in the post-Paris Agreement regulatory environment, affecting entrepreneurial compliance costs and benefits. Reber et al, (2022) Provide evidence that voluntary ESG disclosure reduces idiosyncratic volatility, with higher ESG ratings correlating with lower firm-specific volatility.

The policy implications in promoting entrepreneurship show that government funding programs for innovation should recognize the intrinsically capability-oriented nature of entrepreneurial marketing, where grant evaluation criteria need reformation to emphasize capability improvement milestones over short-term market achievements. Ács et al (2014)demonstrate that policy interventions are more successful when targeted towards ecosystems rather than individual entrepreneurs, citing that cost-effectiveness ratios improve through targeted

ecosystem development. A critical analysis of such policies reveals potential weaknesses, where government interference can create moral hazard, causing entrepreneurs to over-depend on subsidies rather than promoting sustainable business practices.

5.6. Methodological contributions and cross-cultural economic validation

The methodological approach demonstrates PLS-SEM's superiority for entrepreneurial finance research involving small sample sizes and complex mediation relationships. J. F. Hair et al, (2019)Provide updated guidelines, including HTMT discriminant validity assessment and PLSpredict for predictive model assessment, representing current best practices for rigorous entrepreneurial finance studies. Manley et al, (2024)Specifically validate PLS-SEM's suitability for entrepreneurship researchers, demonstrating effectiveness for complex entrepreneurial models and small sample sizes typical in entrepreneurial marketing research.

Methodological limitations require acknowledgment. Cross-sectional design constrains causal inference capabilities, potentially leading to reverse causality concerns where successful firms may invest more in entrepreneurial marketing rather than entrepreneurial marketing causing success. Common method bias from single-respondent data collection may inflate relationships between self-reported measures. Temporal considerations suggest that entrepreneurial marketing effects may vary across organizational lifecycles, with cross-sectional analysis potentially missing important dynamic relationships.

Cross-cultural economic validation reveals significant performance variations across different economic and institutional contexts. Runyan et al, (2012)Provide rigorous cross-cultural validation across the US and China with performance implications varying across contexts, demonstrating the importance of cultural considerations in entrepreneurial marketing effectiveness. Kreiser, (2011)Extend this validation through multi-country analysis across multiple countries, showing that cultural dimensions explain substantial variance in entrepreneurial risk-taking with significant performance outcomes.

Cultural relativism perspectives highlight potential limitations in generalizing findings across cultural contexts. Hofstede's cultural dimensions theory suggests that entrepreneurial marketing effectiveness may vary systematically with cultural values such as individualism, power distance, and uncertainty avoidance. Institutional theory emphasizes that formal and informal institutional environments shape entrepreneurial behavior, potentially moderating the relationships identified in this study. Social capital theory highlights the importance of relationship networks that may substitute for formal entrepreneurial marketing activities in relationship-oriented cultures.

5.7. Venture capital integration and financial market implications

The complexity paradox has significant implications for the valuation models used in venture capital and for the due diligence frameworks. Risk-adjusted return calculations should include complexity management abilities as key value drivers, while portfolio diversification procedures will seek to offset investments with high complexity and balance high returns with more stable and lower complexity alternatives. Cumming et al, (2025)Demonstrate that investments in cryptocurrency funds have significantly higher valuations compared to conventional venture capital, with greater success rates than standard VC, highlighting the need to value technological capabilities in current venture appraisals.

Venture capital implications must consider market timing and cyclical effects. During market downturns, complexity management capabilities may become more valuable as investors seek quality over growth, potentially reversing valuation premiums. Behavioral finance theory suggests that venture capitalists may systematically over- or under-value complexity management capabilities depending on recent experience and availability heuristics. Principal-agent problems between entrepreneurs and venture capitalists may create incentive misalignments regarding optimal complexity levels.

Due diligence frameworks need to evolve to incorporate capability-mediated performance models, as opposed to the usual direct-effect hypotheses. Empirical studies by M. Berger & Gottschalk, (2025)Illustrate that angel investment programs drastically enhance startup valuations, and due diligence frameworks drastically decrease failure rates. Studies by Shin et al, (2025)Indicate that longer venture investment timeframes dramatically increase research and development effectiveness, with portfolio firms having several-fold higher patent generation rates when backed by patient capital, thus supporting the priority on long-term capability building in the theoretical model.

The capability-mediated entrepreneurial marketing model (CMEMM) requires integration of the methodologies applied in assessing venture capital. Traditional valuation strategies that place a high priority on short-term market traction risk permanently undervaluing capability-mediated strategy firms, notably in high-technology industries where customization capabilities are essential competitive advantages. The model encourages venture capitalists to develop customized evaluation frameworks to adequately capture the progress of capability development, which should include indicators related to sensing capabilities, seizing capabilities, and reconfiguring capabilities, all of which share distinct risk-return profiles along with investment horizons.

5.8. Theoretical development agenda and economic policy integration

The conceptual foundation places entrepreneurial marketing as a meta-capability that generates measurable economic outcomes, thus testing prevailing strategic management paradigms and supporting the development of evidence-based policy recommendations to promote favorable entrepreneurial environments. Future research must investigate the contextual constraints in which the economic viability of the direct effects of entrepreneurial marketing holds, especially in newly formed or emerging economies with unique cost structures and institutional settings. Such contextual constraints are likely to include emerging businesses with limited capabilities, fast-changing markets where capability development does not lag market evolution, regulated industries that limit customization, and institutional settings that do not promote capability growth and innovation.

Development of theoretical frameworks has to grapple with numerous competing paradigms and divergent interpretations. Proposals for extending the resource-based perspective suggest entrepreneurial marketing processes can differ depending on the specifications of the base resources and capabilities. Dynamic capability theory stresses that the capability development processes can evolve in the course of time, possibly impacting the relationships specified in this study. Complexity science findings suggest the success of entrepreneurial marketing can emerge from non-linear relationships, which the standard mediation models inadequately present.

The implications of economic expansion suggest that policy interventions for building capability development infrastructure can be more potent than explicit market interventions. Regional innovation systems should focus on developing technology customization skills with training in managing complexity, enhancing rates of entrepreneurial achievement, and overall economic impact. The integration of entrepreneurial marketing theory with frameworks of digitalization, the platform economy, and ecological thinking offers a sound theoretical framework for understanding entrepreneurial marketing's role in more interconnected business environments enabled by technological progress.

The theoretical implications speak to fundamental questions about the nature of entrepreneurial marketing as a distinct theoretical construct. The results posit that entrepreneurial marketing is better understood as a meta-capability enabling the development of other capabilities than as a standalone strategic model. This poses a challenge for the field to reach a more fundamental theoretical understanding needed to explain the capability-mediation and condition-based bases of entrepreneurial marketing performance. This perspective is consistent with the theory of dynamic capabilities, but extends its purpose to include the explicit consideration of entrepreneurial contexts. This approach takes questions about the nature of entrepreneurial value creation and seeks to explore how entrepreneurial strategy can develop a sustainable competitive advantage in more complex and technologically driven market settings.

A broad theoretical analysis identifies potential limits in addition to varied interpretations. Support for social constructionists can argue that the capability-mediated approach mirrors institutionally driven pressures, not performance benefits per se. Institutional entrepreneur theory argues that entrepreneurs hold the potential for shaping institutional settings, in contrast to passive responses to them, which can alter the relationships in question during this research. Future research must extend these alternative theoretical frames in helping the broader understanding of entrepreneurial marketing dynamics.

6. Conclusion

This study establishes a fundamental paradigmatic shift in entrepreneurial marketing theory through the development and validation of the Capability-Mediated Entrepreneurial Marketing Model (CMEMM), which demonstrates that entrepreneurial marketing effects are fully mediated by technology customization capabilities rather than operating through direct causal relationships with market outcomes. This theoretical advancement challenges two decades of literature assuming direct linkages between entrepreneurial orientation and performance. (Chang et al., 2024; Mikalef & Parmiggiani, 2022; Shi et al., 2024), repositioning entrepreneurial marketing from a direct strategic response to a meta-capability that enables the development of operational capabilities through three successive stages: sensing, seizing, and reconfiguring capabilities, each with distinct economic characteristics and resource allocation implications. The complexity paradox emerges as the most significant theoretical innovation, revealing that customer complexity simultaneously enhances customization capabilities while reducing entrepreneurial marketing effectiveness, extending March's exploration-exploitation framework by demonstrating "capability-constrained exploration" where environmental complexity dampens performance-enhancing roles of exploratory entrepreneurial moves. (Gimenez-Nadal et al., 2019). The CMEMM framework validates dynamic capabilities theory while extending it specifically to entrepreneurial contexts, addressing significant gaps in capability development determinants and challenging conventional assumptions about entrepreneurial adaptability in complex environments. Technology customization emerges as a relationship-specific asset generating superior economic returns through premium pricing capabilities and enhanced customer lifetime value, validating Chamberlinian differentiation theory in entrepreneurial contexts, while requiring fundamental changes in entrepreneurial accounting systems through activity-based costing principles rather than traditional direct marketing expense allocation. (Abraham & Edelman, 2024).

The study has important economic and practical implications for various stakeholder groups, suggesting that entrepreneurial marketing investments must be measured in terms of outcomes related to enhanced capabilities rather than immediate return to the market. This has profound implications for management accounting systems, transparency in financial reporting, and venture capital valuation models. A review of risk management shows riskier customers create more volatile revenue while providing longer payment periods, which calls for the adoption of sophisticated protocols for credit risk assessment and enhanced working capital management. Moreover, a review of coordination costs shows an exponential cost rise in transaction costs corresponding with customer complexity, thus supporting the imposition of hierarchical governance schemes in high-complexity settings over market-based ones. Government policies to support innovation must take cognizance of entrepreneurial marketing as capability-mediated by transforming evaluation criteria to emphasize steps toward capability development rather than short-term market performance. Moreover, ecosystem-focused policy interventions show higher success rates for investment in comparison to individual-based measures. (Ács et al., 2014). The compliance requirements for ESG disclosure increasingly overlap with technology customization capabilities, thus producing compliance expenses alongside competitive benefits, while reducing market volatility and enhancing liquidity. This implies that regulatory settings favoring transparency can facilitate entrepreneurial access to capital markets. (Krueger et al., 2000). Venture capital valuation models must adapt by incorporating capability-building progress rather than applying traditional performance measures, as the latter may systematically underprice firms adopting capability-mediated strategies, especially in technological industries where customization capabilities are key competitive strengths. (M. Berger & Gottschalk, 2025; Cumming et al., 2025).

Despite the theoretical and practical contributions, this research acknowledges important limitations that constrain generalizability, including a cross-sectional design preventing definitive causal inference, potential reverse causality concerns, and common method bias from single-respondent data collection, necessitating future longitudinal research with multiple respondents and objective performance measures. Boundary conditions for the CMEMM framework include early-stage ventures with severe resource constraints where direct marketing approaches may be necessary, rapidly changing markets where capability development lags market evolution, highly regulated industries with constrained customization flexibility, and institutional environments with weak innovation support infrastructure. Cross-cultural validation reveals significant performance variations across institutional and cultural contexts, with cultural dimensions explaining substantial variance in entrepreneurial risk-taking and marketing effectiveness, highlighting that capability-mediated approaches may be more effective in developed institutional environments compared to emerging markets, where execution speed may be more critical. (Kreiser, 2011; Runyan et al., 2012). Future research should investigate temporal dynamics of capability development across organizational lifecycles, explore integration with digital transformation and platform economics, employ configurational analysis to identify optimal combinations of entrepreneurial marketing and complexity management, and utilize experimental designs to test specific causal mechanisms while addressing the methodological limitations identified in this cross-sectional study. The capability-mediated perspective fundamentally reconceptualizes entrepreneurial marketing as a foundational element of dynamic capabilities theory while providing actionable frameworks for entrepreneurial decision-making, venture capital valuation, and policy development, offering a robust theoretical foundation for advancing entrepreneurial marketing scholarship while addressing practical challenges facing contemporary entrepreneurial ventures in increasingly complex and technology-driven market environments.

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References

[1] Abraham, M., & Edelman, D. C. (2024). Personalization Done Right: The five dimensions to consider and how AI can help. *HARVARD BUSINESS REVIEW*, *103*(11–12), 104–115.
[2] Abrar, K., Saeed, M. A., Ahmad, I., & Ali, S. (2020). How Customer Experience Quality affects Customer Satisfaction-Loyalty with Moderating role of Competitive Choices and Familiarity: Assessment of Private Hospitals in Pakistan. *Sukkur IBA Journal of Management and Business*, *7*(1), 75–91. https://doi.org/10.30537/sijmb.v7i1.471
[3] Ács, Z. J., Autio, E., & Szerb, L. (2014). National Systems of Entrepreneurship: Measurement issues and policy implications. *Research Policy*, *43*(3), 476–494. https://doi.org/10.1016/j.respol.2013.08.016.
[4] Ahmadi, H., & O'Cass, A. (2016). The role of entrepreneurial marketing in new technology ventures first product commercialisation. *Journal of Strategic Marketing*, *24*(1), 47–60. https://doi.org/10.1080/0965254X.2015.1035039.
[5] Ahmed, E. H. E. H. (2024). Dynamic Capabilities—Alternative Perspectives. *Studies in Systems, Decision and Control*, *538*, 575–586. https://doi.org/10.1007/978-3-031-62102-4_48.
[6] Alonso-Tapia, J., Merino-Tejedor, E., & Huertas, J. A. (2023). Academic engagement: assessment, conditions, and effects—a study in higher education from the perspective of the person-situation interaction. *European Journal of Psychology of Education*, *38*(2), 631–655. https://doi.org/10.1007/s10212-022-00621-0.
[7] Alqahtani, N., & Uslay, C. (2020). Entrepreneurial marketing and firm performance: Synthesis and conceptual development. *Journal of Business Research*, *113*(December), 62–71. https://doi.org/10.1016/j.jbusres.2018.12.035.
[8] Amjad, T. (2022). Digital entrepreneurial marketing: A bibliometric analysis reveals an inescapable need of business schools. *International Journal of Management Education*, *20*(2). https://doi.org/10.1016/j.ijme.2022.100655
[9] Andrew Petersen, J., Paulich, B. J. W., Khodakarami, F., Spyropoulou, S., & Kumar, V. (2022). Customer-based execution strategy in a global digital economy. *International Journal of Research in Marketing*, *39*(2), 566–582. https://doi.org/10.1016/j.ijresmar.2021.09.010
[10] Anshari, M., Almunawar, M. N., Lim, S. A., & Al-Mudimigh, A. (2019). Customer relationship management and big data enabled: Personalization & customization of services. In *Applied Computing and Informatics* (Vol. 15, Issue 2, pp. 94–101). Elsevier B.V. https://doi.org/10.1016/j.aci.2018.05.004.
[11] Arkadan, F., Macdonald, E. K., & Wilson, H. N. (2024). Customer experience orientation: Conceptual model, propositions, and research directions. *Journal of the Academy of Marketing Science*, *52*(6), 1560–1584. https://doi.org/10.1007/s11747-024-01031-y
[12] Atz, U., Dai, R., Dumitrescu, A., Flammer, C., Hung, M., Jang, Y., Kim, J., Lai, Z., Liang, H., Matos, P., Shan, C., Simonov, A., Wang, Y., Shi, Y., Xie, F., Zhang, J., Zhang, B., Zhang, W., & Sautner, Z. (2024). The Effects of Mandatory ESG Disclosure Around the World. *Journal of Accounting Research*, *62*(5), 1795–1847. https://doi.org/10.1111/1475-679X.12548
[13] Baah, C., Rijal, A., Agyabeng-Mensah, Y., Afum, E., & Acquah, I. S. K. (2024). Does circular economy entrepreneurship drive technical capabilities for circular economy performance? The moderating role of environmental dynamism. *Management of Environmental Quality: An International Journal*, *35*(3), 567–586. https://doi.org/10.1108/MEQ-07-2023-0233
[14] Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, *27*(6), 643–650. https://doi.org/10.1177/014920630102700602
[15] Barney, J. B. (2007). *Resource-based theory: Creating and sustaining competitive advantage*. Oxford University Press. https://doi.org/10.1093/oso/9780199277681.001.0001.
[16] Barney, J. B., & Hesterly, W. S. (2019). *Strategic management and competitive advantage: Concepts and cases*. Pearson.
[17] Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-Based Theory and the Value Creation Framework. *Journal of Management*, *47*(7), 1936–1955. https://doi.org/10.1177/01492063211021655
[18] Barth, M. E., Clement, M. B., Foster, G., & Kasznik, R. (1998). Brand values and capital market valuation. *Review of Accounting Studies*, *3*(1–2), 41–68. https://doi.org/10.1023/A:1009620132177
[19] Bayighomog Likoum, S. W., Shamout, M. D., Harazneh, I., Abubakar, A. M., Dawood Shamout, M., Harazneh, I., & Mohammed Abubakar, A. (2020). Market-Sensing Capability, Innovativeness, Brand Management Systems, Market Dynamism, Competitive Intensity, and Performance: an Integrative Review. *Journal of the Knowledge Economy*, *11*(2), 593–613. https://doi.org/10.1007/s13132-018-0561-x
[20] Bekata, A. T., & Kero, C. A. (2024). *Customer orientation, open innovation and enterprise performance, evidence from Ethiopian SMEs*. *11*(1). https://doi.org/10.1080/23311975.2024.2320462.
[21] Berger, M., & Gottschalk, S. (2025). Amplifying angels: Evidence from the INVEST program. *Journal of Business Venturing*, *40*(1), 106456. https://doi.org/10.1016/j.jbusvent.2024.106456
[22] Berger, P. D., Eechambadi, N., George, M., Lehmann, D. R., Rizley, R., & Venkatesan, R. (2006). From customer lifetime value to shareholder value: Theory, empirical evidence, and issues for future research. *Journal of Service Research*, *9*(2), 156–167. https://doi.org/10.1177/1094670506293569
[23] Beugelsdijk, S., Kostova, T., & Roth, K. (2017). An overview of Hofstede-inspired country-level culture research in international business since 2006. *Journal of International Business Studies*, *48*(1), 30–47. https://doi.org/10.1057/s41267-016-0038-8.
[24] Björkander, H., Fong, E., Hoffmann, O., Larsson, E., Melkersson, J., Ramberg, D. F., Stenvall, J., Wallin, E., Sodhro, A. H., & Sjölund, M. (2019). *Impact of Product Customization Interface Design on Customer Satisfaction*. www.liu.s
[25] Bulchand-Gidumal, J., William Secin, E., O'Connor, P., & Buhalis, D. (2024). Artificial intelligence's impact on hospitality and tourism marketing: exploring key themes and addressing challenges. *Current Issues in Tourism*, *27*(14), 2345–2362. https://doi.org/10.1080/13683500.2023.2229480
[26] C Homburg, M. G. M. K. (2007). Responsiveness to customers and competitors: the role of affective and cognitive organizational systems. *J Mark*, *71*(3), 18–38. https://doi.org/10.1509/jmkg.71.3.018
[27] Camară, A. B. (2024). The Impact of Digitalization on Customer Knowledge Management. *Management Dynamics in the Knowledge Economy*, *12*(1), 21–38. https://doi.org/10.2478/mdke-2024-0002.
[28] Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods*, *15*(1), 17–32. https://doi.org/10.1177/1094428110392383
[29] Chang, H. H. S., Knight, G., & Fong, C. M. (2024). Marketing Capabilities, Strategy, and Performance in International Small- and Medium-Sized Enterprises. *Journal of International Marketing*, *32*(4), 21–37. https://doi.org/10.1177/1069031X231221804.
[30] Charan, R. (2007). *What the Customer Wants You to Know: How Everybody Needs to Think Differently About Sales*. Ram Charan.
[31] Cheung, G. W., Cooper-Thomas, H. D., Lau, R. S., & Wang, L. C. (2024). Reporting reliability, convergent and discriminant validity with structural equation modeling: A review and best-practice recommendations. In *Asia Pacific Journal of Management* (Vol. 41, Issue 2). Springer US. https://doi.org/10.1007/s10490-023-09871-y
[32] Collis, D. J. (1994). Research Note: How Valuable are Organizational Capabilities? *Strategic Management Journal*, *15*(1 S), 143–152. https://doi.org/10.1002/smj.4250150910

[33] Crick, J. M., Crick, D., & Ferrigno, G. (2023). Coopetition and the marketing/entrepreneurship interface in an international arena. *International Journal of Entrepreneurial Behaviour and Research*. https://doi.org/10.1108/IJEBR-01-2022-0099.

[34] Cumming, D., Drobetz, W., Momtaz, P. P., & Schermann, N. (2025). Financing decentralized digital platform growth: The role of crypto funds in blockchain-based startups. *Journal of Business Venturing*, *40*(1), 106450. https://doi.org/10.1016/j.jbusvent.2024.106450.

[35] Dessart, L., Veloutsou, C., & Morgan-Thomas, A. (2015). Consumer engagement in online brand communities: a social media perspective. *Journal of Product & Brand Management*, *24*(1), 28–42. https://doi.org/10.1108/JPBM-06-2014-0635.

[36] Dijkstra, T. K., & Henseler, J. (2015). *Consistent partial least squares path modeling*. *39*(2), 297–316. https://doi.org/10.25300/MISQ/2015/39.2.02.

[37] Doluca, H., Wagner, M., & Block, J. (2018). Sustainability and Environmental Behaviour in Family Firms: A Longitudinal Analysis of Environment-Related Activities, Innovation and Performance. *Business Strategy and the Environment*, *27*(1), 152–172. https://doi.org/10.1002/bse.1998.

[38] Dou, X., Zhu, X., Zhang, J. Q., & Wang, J. (2019). Outcomes of entrepreneurship education in China: A customer experience management perspective. *Journal of Business Research*, *103*, 338–347. https://doi.org/10.1016/j.jbusres.2019.01.058

[39] Dressler, M., & Paunovic, I. (2021). Reaching for Customer Centricity—Wine Brand Positioning Configurations. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 7, Issue 2). https://doi.org/10.3390/joitmc7020139

[40] Dubey, P., Bajpai, N., Guha, S., & Kulshreshtha, K. (2020). Entrepreneurial marketing: an analytical viewpoint on perceived quality and customer delight. *Journal of Research in Marketing and Entrepreneurship*, *22*(1), 1–19. https://doi.org/10.1108/JRME-09-2016-0033

[41] Eggers, F., Niemand, T., Kraus, S., & Breier, M. (2020). Developing a scale for entrepreneurial marketing: Revealing its inner frame and prediction of performance. *Journal of Business Research*, *113*, 72–82. https://doi.org/10.1016/j.jbusres.2018.11.051

[42] Elgarhy, S. D., & Abou-Shouk, M. (2023). Effects of entrepreneurial orientation, marketing, and innovation capabilities, on market performance: the mediating effect of sustainable competitive advantage. *International Journal of Contemporary Hospitality Management*, *35*(6), 1986–2004. https://doi.org/10.1108/IJCHM-04-2022-0508.

[43] Ferreira, J., Cardim, S., & Branco, F. (2018). Dynamic capabilities, marketing and innovation capabilities and their impact on competitive advantage and firm performance. *Iberian Conference on Information Systems and Technologies, CISTI*, *2018-June*, 1–7. https://doi.org/10.23919/CISTI.2018.8399271.

[44] Fornell, C., & Larcker, D. (1994). Structural equation models with unobservable variables and measurement error: Algebra and statistics. Journal of marketing research. *Advances Methods of Marketing Research*, *18*(3), 382-388. https://doi.org/10.1177/002224378101800313

[45] Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1). https://doi.org/10.1177/002224378101800313

[46] Fruchter, G. E., & Wiszniewska-Matyszkiel, A. (2024). How responsive should a firm be to customers' expectations? *European Journal of Operational Research*, *314*(1), 323–339. https://doi.org/10.1016/j.ejor.2023.09.011

[47] Gadgil, K., Gill, S. S., & Abdelmoniem, A. M. (2023). A meta-learning based stacked regression approach for customer lifetime value prediction. *Journal of Economy and Technology*, *1*, 197–207. https://doi.org/10.1016/j.ject.2023.09.001.

[48] Gagan Deep. (2023). Digital transformation's impact on organizational culture. *International Journal of Science and Research Archive*, *10*(2), 396–401. https://doi.org/10.30574/ijsra.2023.10.2.0977

[49] Gao, Y., & Liu, H. (2023). Artificial intelligence-enabled personalization in interactive marketing: a customer journey perspective. *Journal of Research in Interactive Marketing*, *17*(5), 663–680. https://doi.org/10.1108/JRIM-01-2022-0023

[50] Gazi, M. A. I., Rahman, M. K. H., Yusof, M. F., Masud, M. A. Al, Islam, M. A., Senathirajah, A. R. bin S., & Hossain, M. A. (2024). Mediating role of entrepreneurial intention on the relationship between entrepreneurship education and employability: a study on university students from a developing country. *Cogent Business & Management*, *11*(1). https://doi.org/10.1080/23311975.2023.2294514

[51] Gibbons, R. (2010). Transaction-cost economics: past, present, and future? *Scandinavian Journal of Economics*, *112*(2), 263–288. https://doi.org/10.1111/j.1467-9442.2010.01609.x .

[52] Gimenez-Nadal, J. I., Lafuente, M., Molina, J. A., & Velilla, J. (2019). Resampling and bootstrap algorithms to assess the relevance of variables: applications to cross section entrepreneurship data. *Empirical Economics*, *56*(1), 233–267. https://doi.org/10.1007/s00181-017-1355-x

[53] Guerola-Navarro, V., Gil-Gomez, H., Oltra-Badenes, R., & Soto-Acosta, P. (2024). Customer relationship management and its impact on entrepreneurial marketing: a literature review. *International Entrepreneurship and Management Journal*, *20*(2), 507–547. https://doi.org/10.1007/s11365-022-00800-x

[54] Guilbault, M. (2018). Students as customers in higher education: The (controversial) debate needs to end. *Journal of Retailing and Consumer Services*, *40*, 295–298. https://doi.org/10.1016/j.jretconser.2017.03.006.

[55] Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3). https://doi.org/10.1016/j.rmal.2022.100027.

[56] Hair, J. F. ., Hult, G. T. M. ., Ringle, C. M. ., Sarstedt, Marko., Ringle, C. M. ., Hair, J. F. ., Hult, G. T. M. ., Ringle, C. M. ., Sarstedt, Marko., Danks, N. P., Ray, S., Ringle, C. M. ., & Hair, J. F. . (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587–632). Springer. https://link.springer.com/10.1007/978-3-030-80519-7. https://doi.org/10.1007/978-3-319-57413-4_15

[57] Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*(December 2019), 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

[58] Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

[59] Hair, J. F., & Sarstedt, M. (2019). Factors versus Composites: Guidelines for Choosing the Right Structural Equation Modeling Method. *Project Management Journal*, *50*(6), 619–624. https://doi.org/10.1177/8756972819882132

[60] Haki, K., Schmid, M., Aier, S., & Winter, R. (2024). *Generativity and p rofitability on b2b i nnovation p latforms : a s imulation -b ased t heory d evelopment 1*. *48*(2), 583–612. https://doi.org/10.25300/MISQ/2023/17701.

[61] Han, M., Wu, J., Wang, Y., & Hong, M. (2018). A Model and Empirical Study on the User's Continuance Intention in Online China Brand Communities Based on Customer-Perceived Benefits. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 4, Issue 4). https://doi.org/10.3390/joitmc4040046

[62] Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, *28*(2), 565–580. https://doi.org/10.1007/s00180-012-0317-1

[63] Hussain, I., Nazir, M., Hashmi, S. B., Di Vaio, A., Shaheen, I., Waseem, M. A., & Arshad, A. (2021). Green and Sustainable Entrepreneurial Intentions: A Mediation-Moderation Perspective. In *Sustainability* (Vol. 13, Issue 15). https://doi.org/10.3390/su13158627

[64] Imran, M., & Jingzu, G. (2022). Green Organizational Culture, Organizational Performance, Green Innovation, Environmental Performance: A Mediation-Moderation Model. *Journal of Asia-Pacific Business*, *23*(2), 161–182. https://doi.org/10.1080/10599231.2022.2072493.

[65] Indriastiningsih, E., Violin, V., Syafri, M., Nurbakti, R., & Judijanto, L. (2023). Analysis of The Influence of Customer Satisfaction, Experiental Marketing and E-Service Quality on Loyalty of KAI Commuter Customers. *Jurnal Sistim Informasi Dan Teknologi*, 69–73. https://doi.org/10.60083/jsisfotek.v5i3.305

[66] Irshad, A. ur R., Safdar, N., Younas, Z. I., & Manzoor, W. (2023). Impact of Corporate Governance on Firms' Environmental Performance: Case Study of Environmental Sustainability-Based Business Scenarios. *Sustainability (Switzerland)*, *15*(10). https://doi.org/10.3390/su15107775.

[67] Jaworski, B. J., & Kohli, A. K. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing*, *57*(3), 53. https://doi.org/10.2307/1251854.

[68] Johnson, N., & Reimer, T. (2023). The Adoption and Use of Smart Assistants in Residential Homes: The Matching Hypothesis. In *Sustainability* (Vol. 15, Issue 12). https://doi.org/10.3390/su15129224

[69] Kankam-Kwarteng, C., Sarpong, A., Amofah, O., & Acheampong, S. (2021). Marketing performance of service firms: Recognizing market sensing capability and customer interaction orientation. *Journal of Tourism, Heritage and Services Marketing*, *7*(2), 38–48.

[70] Kohli, A. K., & Jaworski, B. J. (1990). Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing*, *54*(2), 1. https://doi.org/10.2307/1251866.

[71] Koka, B. R., & Prescott, J. E. (2002). Strategic alliances as social capital: A multidimensional view. *Strategic Management Journal*, *23*(9), 795–816. https://doi.org/10.1002/smj.252

[72] Kowalkowski, C., Wirtz, J., & Ehret, M. (2024). Digital service innovation in B2B markets. *Journal of Service Management*, *35*(2), 280–305. https://doi.org/10.1108/JOSM-12-2022-0403

[73] Kreiser, P. M. (2011). Entrepreneurial orientation and organizational learning: The impact of network range and network closure. *Entrepreneurship: Theory and Practice*, *35*(5), 1025–1050. https://doi.org/10.1111/j.1540-6520.2011.00449.x.

[74] Kreuzer, T., Röglinger, M., & Rupprecht, L. (2020). Customer-centric prioritization of process improvement projects. *Decision Support Systems*, *133*. https://doi.org/10.1016/j.dss.2020.113286

[75] Krueger, N. F., Reilly, M. D., Carsrud, A. L., Krueger Jr, N. F., Reilly, M. D., Carsrud, A. L., Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, *15*(5–6), 411–432. https://doi.org/10.1016/S0883-9026(98)00033-0

[76] Kulikovskaja, V., Hubert, M., Grunert, K. G., & Zhao, H. (2023). Driving marketing outcomes through social media-based customer engagement. *Journal of Retailing and Consumer Services*, *74*. https://doi.org/10.1016/j.jretconser.2023.103445.

[77] Kulova, I. (2024). Impact of Blockchain Technology Development on Industries in the Context of Entrepreneurial, Marketing and Management Perspectives Worldwide. *AIP Conference Proceedings*, *2980*(1). https://doi.org/10.1063/5.0184740

[78] Lafuente, E., Vaillant, Y., & Vendrell-Herrero, F. (2017). Territorial servitization: Exploring the virtuous circle connecting knowledge-intensive services and new manufacturing businesses. *International Journal of Production Economics*, *192*, 19–28. https://doi.org/10.1016/j.ijpe.2016.12.006.

[79] Lee, R. P., & Wei, S. (2023). Do employee orientation and societal orientation matter in the customer orientation—Performance link? *Journal of Business Research*, *159*. https://doi.org/10.1016/j.jbusres.2023.113722

[80] Levinthal, D. A. (1997). Adaptation on rugged landscapes. *Manag Sci*, *43*(7), 934–950. https://doi.org/10.1287/mnsc.43.7.934

[81] Li, X., Gao, Z., & Liao, H. (2023). The Effect of Critical Thinking on Translation Technology Competence Among College Students: The Chain Mediating Role of Academic Self-Efficacy and Cultural Intelligence. *Psychology Research and Behavior Management*, *16*, 1233–1256. https://doi.org/10.2147/PRBM.S408477.

[82] Li, Z., Doğan, B., Ghosh, S., Chen, W. M., & Lorente, D. B. (2024). Economic complexity, natural resources and economic progress in the era of sustainable development: Findings in the context of resource deployment challenges. *Resources Policy*, *88*, 104504. https://doi.org/10.1016/j.resourpol.2023.104504

[83] Liu, C. H., Horng, J. S., Chou, S. F., Yu, T. Y., Lee, M. T., & Lapuz, M. C. B. (2023). Digital capability, digital learning, and sustainable behaviour among university students in Taiwan: A comparison design of integrated mediation-moderation models. *International Journal of Management Education*, *21*(3). https://doi.org/10.1016/j.ijme.2023.100835.

[84] Lopes, J., Oliveira, M., Silveira, P., Farinha, L., & Oliveira, J. (2021). Business Dynamism and Innovation Capacity, an Entrepreneurship Worldwide Perspective. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 7, Issue 1). https://doi.org/10.3390/joitmc7010094

[85] Manley, S. C., Williams, R. I., & Hair, J. F. (2024). Enhancing TQM's effect on small business performance: a PLS-SEM exploratory study of TQM applied with a comprehensive strategic approach. *TQM Journal*, *36*(5), 1252–1272. https://doi.org/10.1108/TQM-10-2021-0299

[86] Mao, Z., Yuan, R., & Wang, J. (2024). Precision marketing for newly-launched products: How to offer free trials to consumers? *Journal of Retailing and Consumer Services*, *81*. https://doi.org/10.1016/j.jretconser.2024.104013

[87] Mikalef, P., & Parmiggiani, E. (2022). An Introduction to Digital Transformation. *Digital Transformation in Norwegian Enterprises*, 1–10. https://doi.org/10.1007/978-3-031-05276-7_1

[88] Miocevic, D., Gnizy, I., & Cadogan, J. W. (2023). When does export customer responsiveness strategy contribute to export market competitive advantage? *International Marketing Review*, *40*(3), 497–527. https://doi.org/10.1108/IMR-02-2022-0043

[89] Momtaz, P. P., Parra, I. M., Momtaz, P. P., & Parra, I. M. (2024). Is sustainable entrepreneurship profitable? ESG disclosure and the financial performance of SMEs. *Small Business Economics 2024 64:4*, *64*(4), 1535–1564. https://doi.org/10.1007/s11187-024-00981-5.

[90] Morgan, T., & Anokhin, S. (2023). Entrepreneurial orientation and new product performance in SMEs: The mediating role of customer participation. *Journal of Business Research*, *164*. https://doi.org/10.1016/j.jbusres.2023.113921

[91] Morgan, T., & Anokhin, S. A. (2020). The joint impact of entrepreneurial orientation and market orientation in new product development: Studying firm and environmental contingencies. *Journal of Business Research*, *113*, 129–138. https://doi.org/10.1016/j.jbusres.2019.06.019

[92] Morgan, T., Anokhin, S. A., Song, C., & Chistyakova, N. (2019). The role of customer participation in building new product development speed capabilities in turbulent environments. *International Entrepreneurship and Management Journal*, *15*, 119–133. https://doi.org/10.1007/s11365-018-0549-9

[93] Morrish, S. C. (2011). Entrepreneurial marketing: A strategy for the twenty-first century? *Journal of Research in Marketing and Entrepreneurship*, *13*(2), 110–119. https://doi.org/10.1108/14715201111176390.

[94] Morrish, S. C., Miles, M. P., & Deacon, J. H. (2010). Entrepreneurial marketing: Acknowledging the entrepreneur and customer-centric interrelationship. *Journal of Strategic Marketing*, *18*(4), 303–316. https://doi.org/10.1080/09652541003768087

[95] Morrish, S., Eggers, F., Pattinson, H., & Hills, G. E. (2020). Three decades in the making: The evolution of entrepreneurial marketing. *Journal of Business Research*, *113*, 59–61. https://doi.org/10.1016/j.jbusres.2020.03.023

[96] Müller, L., Czymai, M., Blättel-Mink, B., & Döll, P. (2024). How to assess conditions for the acceptance of climate change adaptation measures by applying implementation probability Bayesian Networks in participatory processes. *Environmental Modelling & Software*, *181*, 106188. https://doi.org/10.1016/j.envsoft.2024.106188.

[97] Münch, C., Marx, E., Benz, L., Hartmann, E., & Matzner, M. (2022). Capabilities of digital servitization: Evidence from the socio-technical systems theory. *Technological Forecasting and Social Change*, *176*, 121361. https://doi.org/10.1016/j.techfore.2021.121361.

[98] Muñoz, P., Cacciotti, G., & Ucbasaran, D. (2020). Failing and exiting in social and commercial entrepreneurship: The role of situated cognition. *Journal of Business Venturing Insights*, *14*, e00196. https://doi.org/10.1016/j.jbvi.2020.e00196

[99] Musah, M., Taiwo Onifade, S., Satrovic, E., & Akwasi Nkyi, J. (2024). Assessing the palliative aspects of green innovations in the non-linear tendencies of environmental sustainability-financial globalization nexus among West African states. *Geoscience Frontiers*, *15*(6). https://doi.org/10.1016/j.gsf.2024.101893

[100] Nair, A. J., & Manohar, S. (2024). Green Service Consumption: Unlocking Customer Expectations on Technological Transformations Enhancing Purchase Experience in Retail Store. *International Journal of Information Management Data Insights*, *4*(2). https://doi.org/10.1016/j.jjimei.2024.100277.

[101] Naskar, S. T., Hota, P. K., & Gupta, V. (2025). The efficiency paradox: How high-performance work systems interact with entrepreneurial orientation in hostile environments to impact firm performance in US firms. *International Entrepreneurship and Management Journal 2025 21:1*, *21*(1), 1–39. https://doi.org/10.1007/s11365-025-01069-6

[102] Ni, D., Liu, X., & Zheng, X. (2024). Render good for evil? The relationship between customer mistreatment and customer-oriented citizenship behavior. *Journal of Business Research*, *170*. https://doi.org/10.1016/j.jbusres.2023.114349

[103] Peterson, M. (2020). Modeling country entrepreneurial activity to inform entrepreneurial-marketing research. *Journal of Business Research*, *113*, 105–116. https://doi.org/10.1016/j.jbusres.2018.11.042

[104] Purwanti, I., Nisvul Lailyningsih, D. R., & Suyanto, U. Y. (2022). Digital Marketing Capability and MSMEs Performance: Understanding the Moderating Role of Environmental Dynamism. *Jurnal Manajemen Teori Dan Terapan | Journal of Theory and Applied Management*. https://doi.org/10.20473/jmtt.v15i3.39238

[105] Queiroz, M. M., Telles, R., & Bonilla, S. H. (2019). Blockchain and supply chain management integration: a systematic review of the literature. *Supply Chain Management: An International Journal*, *25*(2), 241–254. https://doi.org/10.1108/SCM-03-2018-0143.
[106] Reber, B., Gold, A., & Gold, S. (2022). ESG Disclosure and Idiosyncratic Risk in Initial Public Offerings. *Journal of Business Ethics*, *179*(3), 867–886. https://doi.org/10.1007/s10551-021-04847-8
[107] Rerup, C., & Levinthal, D. A. (2014). Situating the Concept of Organizational Mindfulness: The Multiple Dimensions of Organizational Learning. *CSR, Sustainability, Ethics and Governance*, 33–48. https://doi.org/10.1007/978-3-642-38694-7_3
[108] Runyan, R. C., Ge, B., Dong, B., & Swinney, J. L. (2012). Entrepreneurial Orientation in Cross–Cultural Research: Assessing Measurement Invariance in the Construct. *Entrepreneurship Theory and Practice*, *36*(4), 819–836. https://doi.org/10.1111/j.1540-6520.2010.00436.x
[109] Rupp, M., Schneckenburger, M., Merkel, M., Börret, R., & Harrison, D. K. (2021). Industry 4.0: A Technological-Oriented Definition Based on Bibliometric Analysis and Literature Review. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 7, Issue 1). https://doi.org/10.3390/joitmc7010068
[110] Salojärvi, H., Ritala, P., Sainio, L. M., & Saarenketo, S. (2015). Synergistic effect of technology and customer relationship orientations: Consequences for market performance. *Journal of Business and Industrial Marketing*, *30*(5), 511–520. https://doi.org/10.1108/JBIM-07-2012-0120
[111] Sheng, M. L. (2017). A dynamic capabilities-based framework of organizational sensemaking through combinative capabilities towards exploratory and exploitative product innovation in turbulent environments. *Industrial Marketing Management*, *65*, 28–38. https://doi.org/10.1016/j.indmarman.2017.06.001.
[112] Sheng, X., & Zolfagharian, M. (2014). Consumer participation in online product recommendation services: Augmenting the technology acceptance model. *Journal of Services Marketing*, *28*(6), 460–470. https://doi.org/10.1108/JSM-04-2013-0098
[113] Shi, H., Feng, T., Chen, L., & Lu, X. (2024). Linking dynamic capability with mass customization capability: the mediating role of supply chain resilience. *Journal of Manufacturing Technology Management*. https://doi.org/10.1108/JMTM-06-2023-0246
[114] Shin, M., Bae, J., & Ozmel, U. (2025). Effect of venture capital investment horizon on new product development: Evidence from the medical device sector. *Journal of Business Venturing*, *40*(1), 106454. https://doi.org/10.1016/j.jbusvent.2024.106454.
[115] Smith, B., & Jambulingam, T. (2018). Entrepreneurial orientation: Its importance and performance as a driver of customer orientation and company effectiveness among retail pharmacies. *International Journal of Pharmaceutical and Healthcare Marketing*, *12*(2), 158–180. https://doi.org/10.1108/IJPHM-07-2017-0038
[116] Söderlund, M., & Oikarinen, E. L. (2018). Joking with customers in the service encounter has a negative impact on customer satisfaction: Replication and extension. *Journal of Retailing and Consumer Services*, *42*, 55–64. https://doi.org/10.1016/j.jretconser.2018.01.013
[117] Srivastava, M., Sivaramakrishnan, S., & Pandey, N. (2024). Demystifying customer engagement in B2B markets. *Journal of Business and Industrial Marketing*. https://doi.org/10.1108/JBIM-08-2023-0481
[118] Taneja, A., Goyal, V., & Malik, K. (2023). Sustainability-oriented innovations – Enhancing factors and consequences. *Corporate Social Responsibility and Environmental Management*, *30*(6), 2747–2765. https://doi.org/10.1002/csr.2513
[119] Teece, D. J. (2020). Hand in glove: Open innovation and the dynamic capabilities framework. *Strategic Management Review*, *1*(2), 233–253. https://doi.org/10.1561/111.00000010
[120] Thoumrungroje, A., & Racela, O. C. (2022). Innovation and Performance Implications of Customer-Orientation across Different Business Strategy Types. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 8, Issue 4). https://doi.org/10.3390/joitmc8040178
[121] Truong, Y., & Berrone, P. (2022). Can environmental innovation be a conventional source of higher market valuation? *Journal of Business Research*, *142*, 113–121. https://doi.org/10.1016/j.jbusres.2021.12.040
[122] Utami, E. Y., & Nuvriasari, A. (2023). The Effects Of Customer Orientation, Competitor Orientation, And Promotion On The Marketing Performance Of Logistics Companies In Surakarta City. *International Journal of Social Service and Research*, *3*(6), 1436–1441. https://doi.org/10.46799/ijssr.v3i6.421.
[123] V, Dr. M. (2024). Technological disruption: Unravelling the impact of AI, blockchain, and IoT on entrepreneurship and industry evolution. *Asian Journal of Management and Commerce*, *5*(1), 110–116. https://doi.org/10.22271/27084515.2024.v5.i1b.244.
[124] Van Tonder, C., Sandra Hasanefendic, Bart Bossink, Chris Schachtebeck, & Cecile Nieuwenhuizen. (2023). Internal organizational factors driving digital transformation for business model innovation in SMEs. *Journal of Business Models*, *11*(2), 86–109. https://doi.org/10.54337/jbm.v11i2.7403
[125] Wang, S., Mumi, A., & Issarapaibool, A. (2025). The Effect of Effectuation on Entrepreneurial Intention: The Moderating Roles of Openness and Extraversion. *Sustainable Technology and Entrepreneurship*, 100106. https://doi.org/10.1016/j.stae.2025.100106
[126] Wenzel, M., Danner-Schröder, A., & Spee, A. P. (2021). Dynamic Capabilities? Unleashing Their Dynamics through a Practice Perspective on Organizational Routines. *Journal of Management Inquiry*, *30*(4), 395–406. https://doi.org/10.1177/1056492620916549
[127] Whalen, P., Uslay, C., Pascal, V. J., Omura, G., McAuley, A., Kasouf, C. J., Jones, R., Hultman, C. M., Hills, G. E., Hansen, D. J., Gilmore, A., Giglierano, J., Eggers, F., & Deacon, J. (2016). Anatomy of competitive advantage: towards a contingency theory of entrepreneurial marketing. *Journal of Strategic Marketing*, *24*(1), 5–19. https://doi.org/10.1080/0965254X.2015.1035036
[128] Xie, Z., & Wang, J. (2025). *Stupid is as stupid does ? The in fl uence of anthropomorphic stupidity on consumers ' product purchase intention*. *April*. https://doi.org/10.1108/JPBM-12-2023-4874
[129] Xin, B., Song, Y., & Xie, L. (2024). Dynamic pricing and service customization strategy for IoT-based smart products. *Technological Forecasting and Social Change*, *199*. https://doi.org/10.1016/j.techfore.2023.123046
[130] Xu, S., He, J., Morrison, A. M., de Domenici, M., & Wang, Y. (2022). Entrepreneurial networks, effectuation and business model innovation of startups: The moderating role of environmental dynamism. *Creativity and Innovation Management*, *31*(3), 460–478. https://doi.org/10.1111/caim.12514.
[131] Yachou Aityassinec, F. L., Al-Ajlouni, M. M., & Mohammad, A. (2022). The Effect of Digital Marketing Strategy on Customer and Organizational Outcomes. *Marketing and Management of Innovations*. https://doi.org/10.21272/mmi.2022.4-05.
[132] Yen Wong, W., Hai Sam, T., & Wen Yu, S. (2020). An Innovative, Practical-based and Commercial-based Approach: Techno-Commerce Entrepreneurship Shaping the Outcome-based Learning. *2020 IEEE 8th Conference on Systems, Process and Control (ICSPC)*, 140–145. https://doi.org/10.1109/ICSPC50992.2020.9305778.
[133] Yousaf, U., Ali, S. A., Ahmed, M., Usman, B., & Sameer, I. (2020). From entrepreneurial education to entrepreneurial intention: a sequential mediation of self-efficacy and entrepreneurial attitude. *International Journal of Innovation Science*, *13*(3), 364–380. https://doi.org/10.1108/IJIS-09-2020-0133
[134] Zahedi, M. R., & Naghdi Khanachah, S. (2021). The effect of knowledge management processes on organizational innovation through intellectual capital development in Iranian industrial organizations. *Journal of Science and Technology Policy Management*, *12*(1), 86–105. https://doi.org/10.1108/JSTPM-11-2019-0113
[135] Zhao, J., Wang, X., Yao, X., & Xi, X. (2024). Digital-intelligence transformation, for better or worse? The roles of pace, scope and rhythm. *Internet Research*. https://doi.org/10.1108/INTR-12-2023-1125
[136] Ziakis, C., Vlachopoulou, M., & Petridis, K. (2022). Start-Up Ecosystem (StUpEco): A Conceptual Framework and Empirical Research. In *Journal of Open Innovation: Technology, Market, and Complexity* (Vol. 8, Issue 1). https://doi.org/10.3390/joitmc8010035.