

Environmental Turbulence and Entrepreneurship: A Systematic Review

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Abstract

Environmental turbulence (ET) is an essential variable in the economic and business discourse. This paper focuses more on the incidence of ET in business studies, particularly in marketing and entrepreneurial studies. A systematic analysis is conducted using the 52 most relevant articles from 1991 till 2022. Textual analysis using a word crunching tool yielded essential terms in the complied papers. Results indicate that ET is connected with innovation, which entrepreneurship must indulge in performing well in markets. Most studies have considered ET as a moderator in affecting entrepreneurship and its marketing aspects. The second most common application has been as a mediator, followed by the role of an antecedent. From a purely theoretical basis, ET may have a much more significant role in fostering or eliminating entrepreneurship and keeping entrepreneurship focused on innovation. Future research can focus more on the service sector and study environmental turbulence's mediating and antecedent positions.

Keywords: Environmental Turbulence, Business, Marketing, Entrepreneurship, Entrepreneurial Marketing

Introduction

Turbulence in the environment is an age old concern in every aspect of the human experience. In the economic a business realm is the tenat that changes in the system can be made but a comprehensive design that covers all aspects of the environment surrounding a system are almost impossible to encompass. Still it has been and will be a constant human endeavor to understand the causes of turbulence in the environment to improve forecasts and minimize the loss or maximize the benefit from turbulence in the environment. Entrepreneurship is an area characterized more so by risk, uncertainty and turbulence stemming form the environment. Environmental turbulence (ET) is a significant concern in the fields of economics and business particularly in the areas with uncertainty and risk exposure as a central part of

their discourse, for example, the study of business performance, strategy, and entrepreneurship (Wong, 2014; Samson, 2015; Turulja & Bajgoric, 2018; Rofiq & Promono, 2019). Studies on entrepreneurship are a relatively recent addition to the body of knowledge as compared to other areas, but research on environmental turbulence in the context of entrepreneurship is still at the early stages of development. There is a renewed interest in this area as well due to the current turbulence in the economic and political environment globally. In this context the current study is an effort to extract important aspects from published literature on the effect of Environmental Turbulence as a phenomenon discussed in business, marketing and entrepreneurship studies. Environmental turbulence is the rate of unpredictability in the environment caused by the highly varied events in which a particular industry operates (Wong, 2014; Tsai and Yang, 2014). Environmental turbulence can be classified to:

- “Market turbulence – the rate of change in the composition of customers or their preferences for products and services (Wong, 2014; Tsai and Yang, 2013a, b; Hartono and Sheng, 2016). In turbulent markets, firms’ customers often change their product preferences or tend to seek new products continually (Hanvanich et al., 2006).
- Technological turbulence – the rate of technological change in the industry (Huang and Tsai, 2014). Hanvanich et al. (2006) defined technological turbulence as “the degree of change associated with product and process technologies in the industry in which a firm embeds.”
- Competitive intensity – the degree of competition in an industry (Tsai and Yang, 2013). Competitive intensity relates to the activities of competing firms, including promotion competition, price competition, and new arrivals (Cui et al., 2005).”

Environmental turbulence is characterized by changes that are dynamic and complex, quick and unpredictable, and cause uncertainty (Volberda & Bruggen, 1997; Morris et al., 2002; González-Benito et al., 2009; Lee and Tang, 2018). The characteristics of changes trigger and demand businesses to take strategic steps and adjust business strategies. Some studies showed that environmental turbulence could support competitive strategies that achieve competitive advantage (Ward & Duray, 2000; Kuivalainen et al., 2004; Shalender & Sharma, 2022; Khourouh, Sudiro, Rahayu, & Indrawati, 2020). Some research findings differ from those of other studies that state that environmental turbulence negatively affects performance (Li & Atuahene-Gima, 2001; Lin & Germain, 2003; Power & Reid, 2005; Turulja & Bajgoric, 2018; Calantone, Garcia & Dröge, 2003).

Scholars believe environmental turbulence supports companies in developing an ability to overcome risks and see market opportunities. It also helps to build momentum and creative ability to take the opportunities and overcome the risks and uncertainty the turbulence provides and to channel and utilize internal efforts to achieve the goals to change opportunities into benefits (Morris et al., 2002; González-Benito et al., 2009). Environmental turbulence is considered an antecedent of innovation by some scholars (Witschel, Baumann & Voigt, 2022; Lee and Tang, 2018; Turulja & Bajgoric, 2018; Ojha, Struckell, Acharya C & Patel, 2020; Gemici & Zehir, 2021) and business performance (Witschel, Baumann & Voigt, 2022; Jaworski & Kohli, 1993; Huang and Tsai 2014; Wong 2014). In understanding the contribution of ET to business performance, the environmental context must be kept in clear focus (Tsai and Yang, 2014).

A turbulent environment characterized by a high level of uncertainty unlocks opportunities for firms to break through traditional industry boundaries. In such a situation, the options available for firms it to embrace risk, develop new products and technologies, and enter new

markets (Calantone et al., 2003). Environmental turbulence's adverse effects can force firms to exit a market quickly. Firms have to remain current by monitoring relevant information and adapting to market changes otherwise, they face the risk of losing their competitive advantage (Dai et al., 2014).

Methodology

The methodology used in this study started with searching the term "environmental turbulence" with Google Scholar. The result of this query obtained ranged from the year 1991 to 2022. Then, the keywords referring to "business studies," "marketing," and "entrepreneurship" was selected. This yielded a total of 52 papers which were then utilized to perform the analysis. A textual analysis was performed using the qualitative research software Atlas.ti. A word cruncher tool was also used to find the keywords utilized in these papers. Then, the key patterns and mechanisms of ET are identified.

Results & Discussion

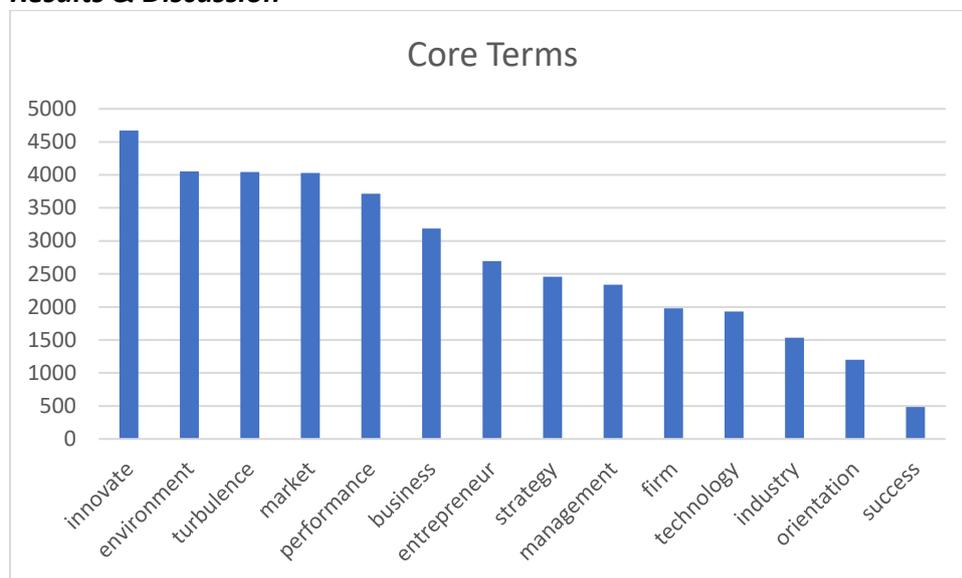


Fig 1: Core words connected with environmental turbulence

The results of the textual analysis are given in Fig 1.0. The core study is about turbulence and the environment. These two words appear the most in the selected studies. Interestingly, the root word innovate has the highest frequency of occurrence. This suggests that innovation has a strong connection with the environment and turbulence. As they say that 'necessity is the mother of invention'. The situation in which needs are mostly felt or exposed is a turbulent environment that is characterized by dynamism. 'Market' is the next root word that occurs most. It is pertinent to suggest here that for a business, the primary source of opportunity and the main source of turbulence is the market. Another interesting fact is that the 'market' is part of the immediate external environment for a business. From the opportunity side, the market is plain for innovation. From the side of risk, the market is the plain where competition exists and is the source of competitive intensity. The word performance is the next most occurring word, actually more than turbulence. This indicates that most studies have conducted the 'business' and 'entrepreneur' performance perspectives. Incidentally, these are the following two most recurring words. Moving forward, we see the next set of words: 'strategy,' 'management,' and 'firm.' It is crucial for

management to develop strategies in turbulent environments as this is the biggest challenge that managements face in their operative capacity. ‘Technology’ is the next word, which is connected and augments the idea of innovation. ‘Industry’ is associated with business and firm, while ‘orientation,’ based on most of the literature, is used in market orientation and entrepreneurial orientation. Eventually, all efforts of businesses and entrepreneurs were aimed at gaining success, which many of the studies have mentioned.

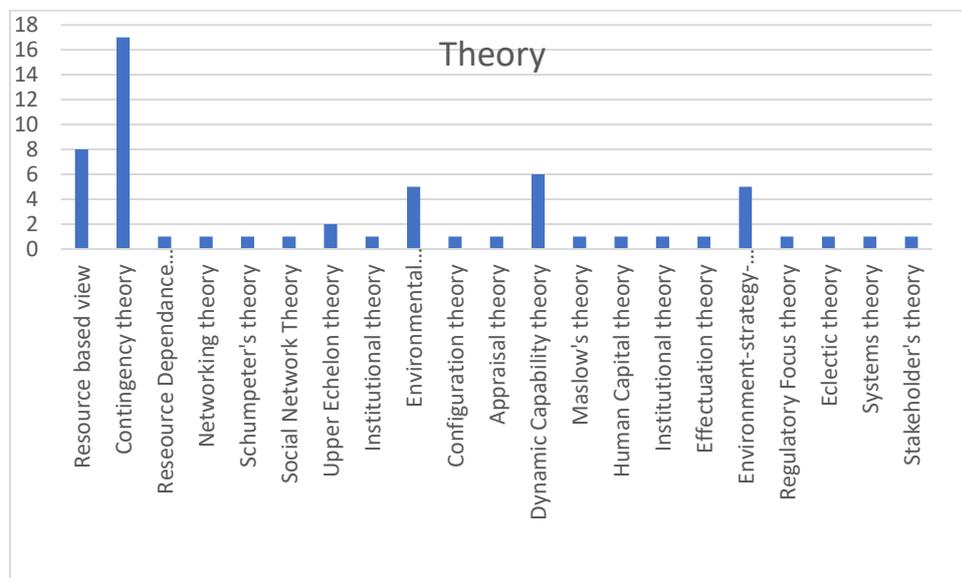


Fig 2: Theories used in Environmental Turbulence studies

For the theory used in this analysis, Fig 2.0 gives the frequencies of the ideas discussed in the studies. Most studies have used the contingency theory and the resource-based view as important theoretical constructs for managing environmental turbulence. The second group of theories providing important frameworks includes dynamic capability theory, environmental contingency theory, and environment-strategy-performance theory.

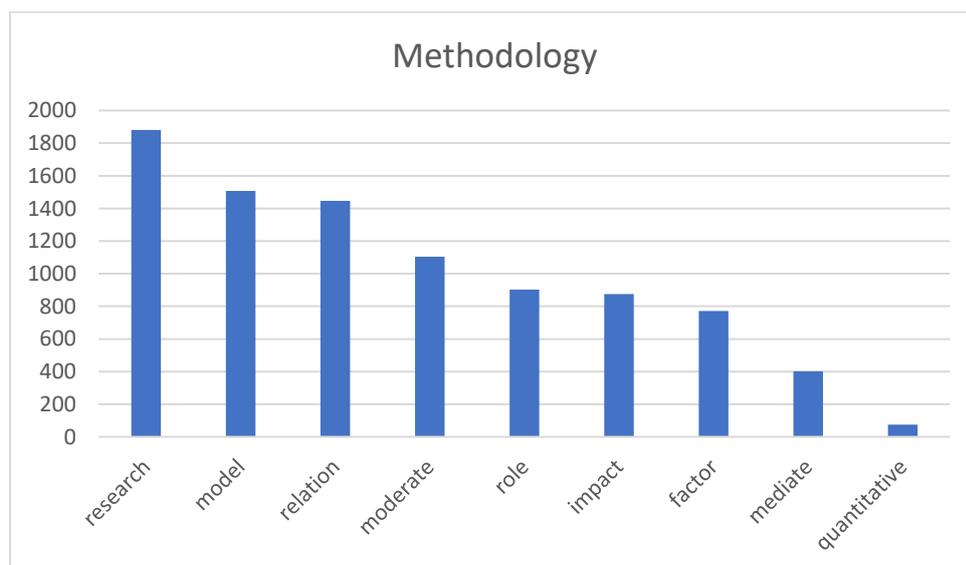


Fig 3: Methodology-related words in Environmental Turbulence studies

Regarding the methodology-related terms most frequently used in the studies, it is quite clear that as all the studies were research-based, 'research' is the most common term. Most studies have developed conceptual, theoretical or measurement models, so the root word 'model' is the second most occurring root word. Moving on, most of the studies were 'relational' studies that have studied the 'role' of environmental turbulence and the 'impact' of different 'factors' in the context of varying dependent variables. Most importantly, the role of ecological turbulence conceptualized in most studies in the business, market and entrepreneurial context is as a 'moderator,' which has the root word 'moderate.' Some studies also tried to investigate environmental turbulence as a 'mediator,' but these are much less than the moderator role. There is very little in the view of qualitative studies as most of the studies are quantitative in nature.

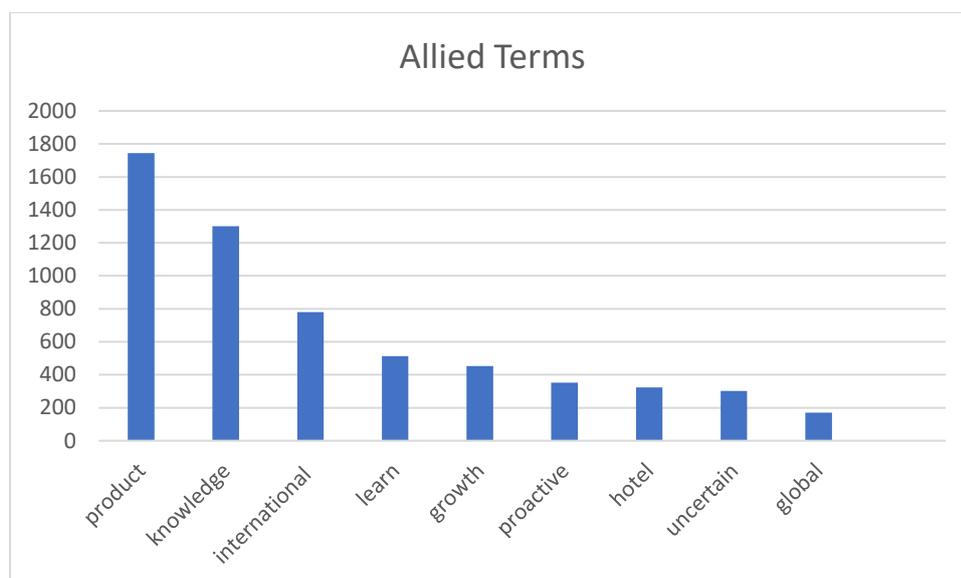


Fig 4: Allied words connected to Environmental turbulence

A few allied terms are also used that have been used in most studies. Their analysis will give some insights. The word that occurs the most is 'product.' Most studies dealt with products rather than services in business and entrepreneurship. Next, an important word is 'knowledge,' which is entirely in the context of tackling environmental turbulence. Another set of meaningful words is 'international' and 'global,' as most of the studies are done in various international contexts. 'Learn' and 'growth' are connected with environmental turbulence as such situations provide learning opportunities and open avenues for a firm's growth. 'Proactive' shows that some studies have looked at proactive strategies to prepare for turbulent situations triggered in the environment. The industry where most studies are done is the 'hotel' industry and in 'uncertain' environmental concerns.

Environmental Turbulence and Entrepreneurship

The environment is a universal construct that has a lot of influence during the formation and throughout the life cycle of entrepreneurship. A particular state of the environment, environmental turbulence, also carries the same influence in the formation stage of entrepreneurship and throughout its life cycle. Whichever industry shows good potential for growth becomes the focus of entrepreneurs and studies on entrepreneurs. Based on the review, about twenty-seven studies have used environmental turbulence as a moderator.

Two studies have studied a mediating effect of ecological turbulence, while nineteen studies have utilized environmental turbulence as an antecedent or determinant. Most recent studies on the variable of environmental turbulence in entrepreneurship have focused on micro, small, and medium enterprises (MSME's) and SMEs. The studies range from IT industries (Kuankuan & Zhang, 2022; Havakhor, Sabherwal, Steelman & Sabherwal, 2019; Weingarh, Richter & Rosenkranz, 2018) to the culinary industry (Waty, So, Indrajit & Abdinagoro, 2022; Panjaitan, 2022). Febriyantoro, Nasuredin & Rashid (2022) have studied the moderating effect of environmental turbulence on the relationship between entrepreneurial marketing and business performance for MSMEs in Batam city, Malaysia. Environmental turbulence has also gained some attention in the context of entrepreneurship in Pakistan. Sajjad, Ibrahim, and Shamsuddin (2022) found in their study that environmental turbulence plays an essential role in translating learning orientation into the performance of SMEs in the manufacturing sector of Pakistan. Mokhtarzadeh, Mahdiraji, and Jafarpanah (2022) investigated the role of environmental turbulence on firm innovation in the context of car OEMs in Iran. The results indicate that environmental turbulence improves an organization's innovation performance. Stock, McDermott, and McDermott (2022) studied the effect of environmental turbulence, strategic blur, and strategic focus on performance in developing entrepreneurial performance. Results suggest that the interaction between environmental turbulence and strategic blur significantly affects firm performance. A study by Omar (2022) reconfirms that environmental turbulence strongly affects entrepreneurial orientation in the context of firms in Bahrain.

Measuring Environmental Turbulence

Volberda & Van Bruggen (1997) did a detailed analysis of the dimensions of environmental turbulence, where dynamism, predictability, and complexity were taken as the critical dimensions. This variable has been used in multitudes of studies as it is a universal phenomenon. Jaworski and Kohli (1993) used a scale for environmental turbulence with the market and technological turbulence as dimensions. Kmiecik, Michna, and Meczynska (2012) modified the scale and added a third dimension: competitive intensity. This scale has been used in further studies like the one by Turulja and Bajgoric (2019), analyzing the effect of environmental turbulence on innovation and firm performance.

Environmental turbulence is found to have a significant causal impact on the level of entrepreneurship and the marketing orientation of the firm (Davis, Morris & Allen, 1991). The effect of environmental turbulence has also been studied in conjunction with EO in many entrepreneurship studies. Environmental turbulence strongly affects all three dimensions of EO (innovativeness, proactiveness, and risk-taking) (Wong, 2014). Multiple studies confirm this effect. Recent studies focus on the application of environmental turbulence as an element in the system to achieve sustainable competitive advantage (Shalender & Sharma, 2022); corporate social responsibility, and disruptive innovation (Wang, Qureshi, Guo & Zhang, 2022); Eco-innovation and sustainable business (Larbi-Siaw, Xuhua, Owusu, Owusu-Agyeman, Fulgence & Frimpong, 2022).

Conclusions

Environmental turbulence is an essential phenomenon with many applications in many fields. The primary purpose of this study was to evaluate the literature on the phenomenon of environmental turbulence in the areas of business, marketing, and entrepreneurship, which are the subfields of economics. For this purpose, a compilation of papers was obtained

through searches in Google Scholar. The key search terms used were 'environmental turbulence,' 'business,' 'marketing,' and 'entrepreneurship.' A collection of 52 papers was selected based on their relevance to the search criteria. The year range of the articles is from 1991 to 2022. A qualitative research tool Atlas.ti was used to analyze the studies. A word crunching tool was used in the software and frequency analysis was applied to extract critical terms used in the study. The terms obtained were then divided based on their applicability in the studies. The first set was the core terms: innovation, environment, turbulence, business, entrepreneur, strategy, and management. Then all the studies were analyzed for the theories that have been used. Results suggest that the widely used theories are the contingency theory, followed by the resource-based view, dynamic capability view, environmental contingency theory, and the environment-strategy-performance theory. The third set of terms is related to methodology. The most used terms include research, model, relation, moderate, role, impact, factor, mediate, and quantitative. Some related allied terms include product, knowledge, learning, growth, proactive, hotel, uncertain, and global. . Industries on which these recent studies focused include entrepreneurs in IT and MSMEs.

The study's core findings suggest that environmental turbulence is fundamental in entrepreneurship and marketing. Environmental turbulence is very much connected to innovation which is a requirement for the performance of a firm in such environments. The market is the source of innovation caused by turbulence as it brings out innovation and technology development efforts by businesses and entrepreneurs. Contingency and environment-focused theories are mainly applicable in studies utilizing the construct of environmental turbulence. In terms of methodology, most studies have focused on the moderating role of environmental turbulence in cause and effect-based relationships and models. In the context of entrepreneurship, environmental turbulence has been studied in multiple international and global settings. Most studies have entrepreneurship and environmental turbulence in the context of products. Future studies can focus more on the service sector. Further studies can be carried out on proactive approaches to manage environmental turbulence. In methodological terms, more investigations are needed to examine environmental turbulence's mediation and antecedent roles. The key contribution of this study is to extract the key terms associated with environmental turbulence in published research in the context of business, marketing in general and entrepreneurship in particular. Further contribution is to determine the key theories that have been used to develop the constructs related to environmental turbulence.

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