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Environmental Turbulence, New Product Development and Innovation

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***Abstract*— *This study aimed to implement a systematic review of literature, in order to find theoretical support on the relationship between new product development and product innovation, moderated by environmental turbulence in the technological and market dimensions. It was used the qualitative approach, with data and information collected from published articles on the subject. The criteria researched consisted of: temporal cut from 2000 to May 2015, the article must belong to the area of Business Management or Economy, to present relationship with Environmental Turbulence, Development of New Products and product innovation. In the literature used, it was not possible found any article presenting an integrative model using New Product Development or Product Innovation moderated by environmental turbulence in its two dimensions. Based on the review accomplished, it is possible to define more four subjects to be studied in future empirical works approach these elements.*

Keywords*— *New Product Development. Product Innovation. Environmental Turbulence.

I. INTRODUCTION

The relevance of the environment is to verify critical points and favorable points to change. These changes could be different aspects: behavioral, economic, technological, market demographic and social (Gonçalves, 2011).

Historically, the environment was consider a key element in the definition of organizational strategies (Oliveira et al., 2016). In most organizations today, the prevailing perception is that the turbulent environment becomes complex and difficult to perceive and uncertainty is a constancy (Zhao; Zhu; Zuo, 2015).

In the 60's, during the post-war recovery still had observed the growth of the organizations occurred, with a tendency to diversify products. In the 1970s, the period of inflation and stagnation began, with conservative management and creation of strategic business units, while in the 1980s a series of factors contributed to exaggerated concern about organizational effectiveness, with a Japanese economy. Research at the time focused mainly on restructuring processes. However, in the 1990s, there was rapid economic and political change. The changes that occurred in the environment required a redirection regarding uncertainty, mainly technological changes (Hamel; Prahalad, 1995; Bonjour; Micaelli, 2010).

The 21st century, accelerated changes in the economy, the market and uncertainties, it seems necessary to revise environmental concepts, especially when talking about turbulence and economics. New trends come with new impacts, new needs, arise to intra-organizational networks at various levels. As a result, the process is accelerated in search of new studies, management tools, as well as the constant need to innovate in new products, agility in the processes with the ability to predict the needs of the market and attentive to the needs (Porter, 2004; Prahalad, 1995).

The environment is everything that involves the company, also related beyond the boundaries or limits of the organization. The environment has characteristics by intense competition, economic difficulties, technological changes, uncertainties about government policies, and other factors that threaten the future of companies.

However, there is a need to interact with the economic and political system, where the companies then inserted. So that they act together to become competitive to face the adversities imposed by the system. The nameof this set of adversities economic turbulence or even Environmental Turbulence (Thompson, 1967; Millillen, 1987). Zhao, Zuo, and Zillante (2015) argue that economic turbulence is a precursor to innovation and therefore to New Product Development.

The present study aimed to carry out a systematic review to find theoretical support on the relationship between New Product Development and Product Innovation, moderated by the technological and market environmental turbulence.

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II. THEORETICAL REFERENCE

2.1 ENVIRONMENTAL TURBULENCE

Companies were immersion in the globalized market in order to meet the requirements and their permanence, in this way they need to adhere to the procedures and requirements of the market without frontiers. "Among these is the requirement that companies have the ability to offer quality products and services at ever more affordable prices. One of the ways to obtain competitive advantage"(Vieira, page 13, 2002).

According to Gimenez (2000), Bandeira de Mello e Cunha (2004) and Ramos (2005) there is no consensus on the definition of Environmental Turbulence. Authors like Downey, Hellriegel and Slocum Jr (1975), Miles (1978), Jauch and Kraft (1986) and Milliken (1987) consider it as synonymous with environmental uncertainty. For these authors, Environmental Turbulence refers to the difficulty of anticipating the environmental changes that the organizations are subject to, that is, the relation between them and the environment in which they are inserted (Thompson, 1967; Milliken, 1987).

The environment was recognize as the internal and external scope of organizations, under the micro and macroeconomic context. Microeconomic factors correspond to physical resources, human resources, infrastructure, scientific knowledge, organizational skills, among others. In turn, the macroeconomic aspects refer to exchange and commercial policy, fiscal and monetary policy, for example (Porter, 1999).

Under another approach, Certo and Peter (1993) establish, in addition to internal and external, the existence of the operating environment. In turn, Daft and Weick (2005) define the relevance of the social-cultural, political-legal, technological and economic environment, whereas Hitt, Ireland and Hoskisson (2005) and Johnson, Scholes and Whittington (2005) determinant of the demographic aspect.

A set of all phenomena external to the organization that have some kind of direct or potential influence on their operations. In this sense, Certo and Peter (1993) point out that through the analysis of the environment it is possible to verify the critical points of environmental pressure and identify the change bias, besides maximizing the organization's predictability and control power over external elements and development environmental impact management mechanisms.

For Rossetto and Rossetto (2005), the environment was consider as endowed with fundamental relevance for the determination of organizations' actions.

Concurrently, Jansen and Van Den Bosch and Volberda (2005) point out those turbulent environments are identify by technological changes, as well that changes in customer preferences and demand fluctuations. Thus, these dynamic environmental conditions affect the obsolescence of current products and / or services, driving the development of new products.

It should be most impactful, that technological and marketing aspects are complementary, so that their integration based on organizational learning maximizes innovation and consequently performance (Song et al., 2005; Lane; Koka; Pathak, 2006). However, environmental turbulence is fraught with divergence, volatility, quantity of changes, and was impact by the speed with which they happen (Jauch; Kraft, 1986).

From another perspective, Gimenez (1993) elucidates that the changes are linked to the way the threats occur, with globalization being the phenomenon that causes Environmental Turbulence (Ramos; Gimenez; Ramos; Ferreira, 2005) since the environment is understood as a set (Mintzberg and Lampel, 2000). In this sense, Cochia and Machado-da-Silva (2004) emphasize the relevance of dominating and identifying the spheres of the organization in their environment.

However, Wischnevsky, Damanpour and Méndez (2011), in a study carried out in the United States during the 1970s and 1990s, found that environmental changes interfere in rates of exchange variation, as well as in products, technological and administrative processes, and consequently in the Product Gross Domestic Product (GDP). Thus, according to the authors, unpredictability is define as influencing the development of organizations and nations.

According to Zhao, Zuo and Zillante (1985) "Environmental turbulence is used to describe temporary disruptions in the organization caused by environmental factors, such disruptions often have devastating and harmful effects on organizations." It wassuppose the environment as a dynamic element of all organizational phenomena undergoes constant changes as a form of competitive survival (Zhao; Zuo; Zillante, 2015).

While the multidimensional model has been adopted to classify Environmental Turbulence, Duncan (1972) argues that this is endowed with complexity, which is complemented by Child (1972) by assigning him aspects related to diversity and by Sharfman and Dean (1991) and Rosenbush, Hong and Eastman (2007) characterizing it as unstable. However, there is no lack of standard for Environmental Turbulence dimensions. What exists are different ways of perceiving it. Under this context, in turbulent environments with uncertainty and complexity, market and technological aspects are challenging, where innovation is the highlight (Buganza, 2010).

2.2 DEVELOPMENT OF NEW PRODUCTS

It is recognize as Development of New Products, all strategy and strategic concepts of implementation of a new

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process, destined to place it in the market, in order to market it (Sang; Crawford; Stuessy, 1997). The development of new products becomes an alternative to new strategies and necessary to continue in the market, with which it is possible to increase their competitiveness (Kotler, 2000; Parasuraman; Colby, 2002).

It could be accept that Development of New Products is a process where changeshappen to the characteristics of the products in order to meet the needs of the customers. New Product Development is composed of several stages, where it generates continuous knowledge (Trott, 2012).

Development of New Products can be consider as the whole process or as a total process of strategy, concept generation, product planning and marketing, as well as marketing aimed at the implementation of a new supply (Crawford, 1997). However, "experiences show that no other activity seems to take more time, more money, involves more pitfalls or more anguish than a New Products program" (Dhalla; Yuspeh, 1976, p.108)

In this sense, Clift and Vandenbosh (1999) point out that the main objective of new product development is to minimize the time of the manufacturing cycle (Cooper; Kleinschimst, 1994), as well as to maximize consumer involvement (Gruner; HOMBURG, 2000). Thus, "the key to its survival and growth lies in the continued development of new and improved products" (Kotler, 1980, p.240).

According to Cooper (1996), the Development of New Products is relate to three main factors, namely: process, resources and strategies. On the other hand, Calantone, Di Benedetto and Bhoovaraghavan (1994) emphasize that most organizations generally carry out the complete cycle of technological innovation, so that it adopts a reference model for the systematic and integrated management of such process.

The New Product Development process is composed of three stages, namely: pre-development, development and post-development. The first objective is to define the relationship between the organizational objectives and the projects to be developed, as well as the individual development planning of each of these. The second, in turn, corresponds to the definition of the functional structures of the product and its technical and technological information, covering the activities of designing, constructing, testing and optimizing the product until its approval. Finally, the third step includes the systematic monitoring of information about the results of the product in the market, including its distribution and life cycle assessment (Clark; Wheelwringht, 1993; Rozenfeld; Forcellini; Amaral, 2000).

However, empirical research by Rocha, Borini and Spers (2010) found that there is a negative correlation between the degree of global integration of companies and strategic alignment with marketing autonomy in new products, which justifies the fact that certain subsidiaries have a superior advantage in relation to other corporate units. From this perspective, Sbragia and Lima (2013) elucidate that companies that have market orientation have greater integration between the functional areas related to the Development of New Products and consequently acquire high results. It is also worth noting that New Product Development indirectly affects profitability, whose relationship is intermediate by market share (Sampaio; Perin; Ferreira, 2008).

2.3 INNOVATION

The concept of innovation was earn in 1911 after the publication of Economic Development Theory elaborated by Joseph Schumpeter, where under a capitalist approach; this is defined as the process of "creative destruction" that promotes the rupture with the current economic system.For this, the author bases the innovation in five assumptions (Avila Neto et al. 2016; 2017).

Namely the introduction to the market of a new good or service; introduction of a new production method;The creation of a new market in a given country; the acquisition of a new source of supply of raw materials or semi-manufactured products; the implementation of a new structure in a market (Schumpeter, 1982).

Then, innovation is endow with economic rationality through financial returns from new products, processes and / or procedures (Freeman, 1982). Innovation can still be recognize as "the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service" (Drucker, 1986, p.25). Thus, while invention and creativity are associated with the individual and personal aspect of generating a new idea, innovation corresponds to an organizational process of implementing this idea (Van de Ven, 1986).

Based on the Schumpeterian assumptions, the Oslo Manual (2005, p.55) defines innovation as the "implementation of a new or significantly improved product (good or service), or a process, or a new marketing method, or a new organizational method in business practices "and thus establishes the four dimensions of innovation.

With regard to the types of innovation, there is radical and incremental innovation. The first provides a significant impact under a given market (Schumpeter, 1982), promoting its rupture (Christensen; Snyder, 1997). Incremental innovation refers to the one that subsidizes continuous technical improvement (Bessant and Tidd, 2009).

In turn, Bessant and Maher (2009) emphasize that innovation has many different forms, but we can summarize them in different dimensions: product, process,

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position and paradigm innovation. For these authors, product innovation consists of the change of the product / service that a company offers, while process innovation corresponds to the transformation in the way in which the things / services are create and offered to the consumer. Consequently, paradigm innovation refers to change in the context in which product / service is introduce and, finallythe paradigm of innovation relates to change in the basic mental models that guide what the company performs.

Innovation corresponds to a process whereby organizations must be attentive to market demands (Bessant and Maher, 2009). Therefore, because it is a process and not an isolated event, it is manageable (Tidd; Bessant; Pavit, 2005). Innovation requires implementation of new ways of perceiving it, as well as new markets (Bessant and Maher, 2009), especially in uncertain environments.

In the scope of innovation are the Development of New Products whose contribution refers to the maximization of the market differentiation that occurs as the competitors differentiate each other (Bessant and Maher, 2009). Therefore, it is imperative to analyze the set of elements related to the marketing, financial and technological dimension, as well as internal organizational resources (Ladders, Takekeuch, Takekeuch, 2007).

III. METHOD

For the selection of articles, which were studies, initially bibliometric search used in the Scopus, Science Direct, Emerald and Ebsco databases. As a search guideline we used the 1st Law of Bibliometrics (Law of Zipf), which consists of the occurrence of words (Bufrem; Prates, 2005), limited to the descriptors (keywords), since they strictly cover the subject treated in empirical investigations (Brandau; Monteiro; Braile, 2005). Thus, the definition and descriptions of these following terms and Booleans are "*environmental turbulence*" and "*development of new products*" and "*innovation*".

It was determined as a search filter in relation to the type of document "article", whose time cut corresponded from the year 2000 to the date of May 30, 2015. No exclusions were established regarding the language of the publications. In this way, 92 (ninety-two) articles were preliminarily obtained, of which 62 (sixty-two) were excluded after careful reading because they did not present research objectives related to the three proposed constructs (innovation, environmental turbulence and new product development).

Two papers were also exclude because they are published twice only by reversing the author's order of importance. Thus, the portfolio of articles to be analyzes was composed of twenty-eight publications that used different types of empirical investigations. However, it was found that of these, twenty-two did not deal with the relationship between the proposed constructs, so that the final analysis was composed of six publications.

Then, the qualitative analysis of the selected articles was carried out, whose guiding question consisted of the following question: what is the relationship between Environmental Turbulence, New Product Development and Product Innovation? From this, a systematic review of the literature was carried out, which consists in the identification, selection and critical evaluation of relevant research (Clark, 2001), which provided subsidies for the preparation of prepositions and consequent of the theoretical model.

IV. ANALYSIS AND RESULTS

The convergences found that, environmental turbulence has a direct effect on the organizations, also how it operate. On the other hand, in the uncertainty aspect, organizations must be alert to new requirements, to act quickly in uncertain environments and that innovation is a success factor (Stefenon et al., 2017). However, there are also studies where organizations act on process and not product innovation, because of this process innovation has a rapid financial return, while product returns may be uncertain. They are complex questions and sometimes there is a divergence between authors, it is perceive that they deal with the same subject, but with economic bias and geographic issues. That could be one of the factors. Like the case study below.

Kam-Sing Wong (2014), reports that the success of a new product is a complex issue, Buganza (2010) also stresses that requirements and complexities are relevant factors when designing a new project. Thus, Bessant and Maher (2009, p.387) also found that "innovation does not happen simply, because we desire it, is a complex result that involves risks and needs careful and systematic management."

Pratono and Mahmood (2014) in their studies found that Environmental Turbulence has moderate and direct effects on New Product Development and business performance. Already for Zhao, Zuo and Zillante (2015), Environmental Turbulence is manage by flexibility within the context where it is insert. While for Ambridi, Li and Ren (2015), Environmental Turbulence has the moderating role between project teams and project performance. Droge, Calantone, and Harmancioglu (2008) emphasize that the Environmental Turbulence relationship has a moderating effect on intra-organizational relationships. That said the reflexes could affect organizations regardless of where they may be install. For Kam-Sing Wong (2014), Environmental Turbulence is a form of unpredictability with this having direct impact on the product. Wang et al.

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(2013) reports that Environmental Turbulence has a moderating affect managerial relations, on the acquisition of resources.

Based on the premise prospects of adding a logical character of relationships between Environmental Turbulence, New Product Development and Innovation, identified in the study. It can be seen that it was not possible to verify if the Development of New Products is directly related to Environmental Turbulence and if Innovation is directly related to Environmental Turbulence. Only the study by Zhao, Zuo and Zillante (2015), emphasized that environmental turbulence has a positive effect on New Product Development.

Droge, Calantone and Harmancioglu (2008) have tested the direct and indirect effects that link the antecedents to the success of a new product. These are: (i) proactive strategic guidance along with skills; (ii) organizational structures (iii) innovation (iv) market intelligence. Emphasizes that innovation is link to intelligence and market, in turn is the success of a new product and that the background may be of intra-organizational domain. However, the relationships of intra-organizational constructs for product success are hypotheses whose moderator is environmental turbulence. While Kam-Sing Wong (2014) emphasizes that Environmental Turbulence was strategically leverage, it can play a positive role in New Product Development.

However, Buganza (2010) investigates the management of innovation in high turbulence environments, with uncertainty and complexity, market demands accompanied by technology are challenges. Recent studies in the management academy have suggested that when facing turbulent environments, companies, organizations or even nations must implement more flexible development processes (Eissmann et al., 2017; Arruda et al. 2017). The same authors carried out a case study with nine constructs in five Italian companies, the results found were that the companies studied should analyze TA as an uncertainty factor and in a specific way for each project. In addition, they may come from both changes in the market and technology.

However, having quick changes is not enough. In the case of turbulence, both market and technological, the companies studied need to wait to do the implementation of their projects. If the turbulence is only of the market, one should streamline the experiments involving clients.

In the study of Piening and Salge (2015) it was identified that Environmental Turbulence is expected positively to moderate the relationship with innovation and performance of the company. The main idea of the study was to analyze the antecedents, contingencies, and consequences of the differences between successful companies and innovation. Despite widely recognized economic value, however, process innovation has received less conceptual and empirical attention than products. The main antecedent for innovation isfocused on financial resourcefulness.

Pratono and Mahmood (2014) developed a study that aimed to determine the moderating effect of Environmental Turbulence between business performance, business orientation and business management. The study also found evidence that Environmental Turbulence is significant in relation to the performance of corporate social capital.

Yang and Huang (2016) conducted a study where the purpose was to empirically investigate a sample of projects in the construction industry of Taiwan. The results pointed out that Information Technology can improve the involvement with the owner, and later, improve the performance of the project. The results indicate a positive relationship with the team that owns the project, and organizational capacity depends on Environmental Turbulence.

Su et al. (2013) have developed a study to verify whether technological capacity and marketing capacity are complementary or supplementary capacities, and how technological and marketing capacity could be appropriately used to respond to Environmental Turbulence. Based on research in 212 Chinese companies, these authors found that technological capability and marketing ability have synergistic effects, but that technological turbulence increases the effect of performance capacity, but impedes marketing ability. Considering also that, the market turbulence advances on the effect of the marketing capacity and performance, but it impedes the technological capacity.

The study developed by Wang, Lo and Yang (2004), unlike previous studies, focuses on the decomposition of the impacts of the essential competences on the performance of the company and its moderating effects of Environmental Turbulence. With this, the studies verified that the competences influence the performance of the company and that they are moderate by Environmental Turbulence, as well as by the turbulence of market and technology.

While, Wang et al. (2013) presented a study that developed and tested a model that establishes the role of external resources as a mediation mechanism and examines the moderating role of Environmental Turbulence and also explains the impact of managerial relationships on resource acquisition. In China, this survey was conduct in 253 companies, indicating the acquisition of resources plays a partial mediating role in the relations between management and organizational performance.

Tsai and Yang (2014) studied resource-based theory, and investigated how technology turbulence and market

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turmoil influence the effect of innovation on business performance. In Taiwan 452 manufacturing companies are controlled by this survey. They used moderate hierarchical regression analysis to test the hypotheses of two interaction pathways.

The results indicate that Technological Turbulence has a positive effect on innovation and New Business Development, but that Technological Turbulence, and Market Turbulence does not. They also found that when Technology Turbulence increases, Innovation has a positive effect on the success of the new business. The results suggest that managers and manufacturing companies must adopt innovation to ensure that their companies can thrive under the effect of Technology Turbulence.

Auh and Menguc (2005) report that a strategic orientation is needed that is initiated in the top management team, but very little is known about the composition of the functional diversity of the components and the effectiveness of the strategic orientations. Thus, they developed a contingency model that examines this relationship under different levels of Environmental Turbulence and cross-functional coordination. The results show that, under strong Environmental Turbulence, companies will have more difficulties to achieve greater strategic orientation due to their functional differences.

Dayan and Di Benedetto (2010) examined the mediating effects of team commitment between longevity, confidence and managerial performance, team learning and product success, under the moderating effect of Environmental Turbulence. The results show that the impact of managerial confidence is associated to the success of the product. In addition, the results show that business confidence influences team commitment.

After analysis and importance of the study in relation to Environmental Turbulence, New Product Development and innovation. It was verified that there is a need to verify critical points regarding the issue of Environmental Turbulence that organizations and managers face. With the need to identify possible changes, besides increasing pro-activity of the organizations on external elements, management mechanisms to guard against the uncertainties imposed. In all thesearticles, it was verified absence of studies where it involved Environmental Turbulence as antecedent of the Development of New products and the innovation. Environmental Turbulence had a moderating effect on the Development of New Products, and in others, the effect was as an antecedent, only for innovation and still separately for the Development of New Products.

One factor that could be asked is when the strategies that can be adopted, as well as the defensive strategies, prospective strategies, strategies, analytics and reactive strategies. In the case of defensive strategies, it is a process, by which the individual perceives the reality that is around them, both can be individually and collectively used (Martins, Robbini, 2012).

An analysis of mobilization by all prospective intelligence, as well as all classical analysis, and in terms of where threats and opportunities may occur, should still be considered. Looking at all the diffusion of ideas of the strategic expression prospective and verify if it is no longer applied. Companies need to be aware of any changes that occur, be they product, processes or services. The changes that the market is imposing in front of the new demands of the markets, both nationally and internationally. Mainly in exchange, political and social changes. Companies must always observe the geopolitical factor in order to face environmental turbulence.

Thus, Table 1 demonstrates how the studies define the role of Environmental Turbulence and its dimensions in the relationship between Product Innovation and New Product Development.

Table.1: Environmental Turbulence Relationships Based on Literature

Dimension of Turbulence	Relationships	Authors
Market Turbulence	Market turbulence is a precursor to innovation and therefore to New Product Development (DNP).	Zhao, Zuo e Zillante (2015)
Environmental Turbulence	It found that Environmental Turbulence has moderate effects with direct relation on New Product Development and company performance.	Pratono e Mahmood (2014)
Environmental Turbulence	Environmental Turbulence has the moderating role between project teams and project performance. That said the reflexes could affect	Afridi, Li e Ren (2015)

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	organizations regardless of where they may be install.	
Environmental Turbulence	Emphasizes that the Environmental Turbulence relationship has a moderating effect on intra-organizational relationships.	Droge, Calantone e Harmancioglu (2008)
Environmental Turbulence	It is a form of unpredictability with this has direct impact on the product.	Kam-Sing Wong (2014)
Environmental Turbulence	It reports that Environmental Turbulence has a moderating impact on management relations, the acquisition of resources	Wang et al. (2013)

Source: Prepared by the authors.

Given the above, Figure 1 presents the propositions, considering the relationships between the constructs found in the literature. Such findings may serve as a basis for future research.

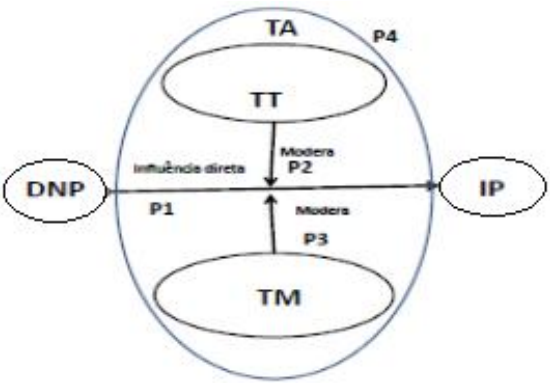

Fig.1: Research Proposals
Source: Prepared by the authors.
P1 - Direct Influence
P2, P3 - Moderate

The first proposition refers to the direct relationship between New Product Development and Product Innovation, where P1: New Product Development positively influences Product Innovation. In turn, the second proposition corresponds to the relationship between New Product Development and product innovation being moderate by the Technological Turbulence variable, that is, P2: Technological Turbulence moderates the relationship between New Product Development and product innovation. In the same sense, we have the third proposition that highlights the relationship between New Product Development and product innovation being moderate by the other dimension of Environmental Turbulence, Market Turbulence, thus, P3: Market Turbulence moderates the relationship between Development of New Products and Product Innovation. Finally, the fourth proposition corresponds to Environmental Turbulence as moderator of the relationship between New Product Development and Product Innovation, equivalent to P4: Environmental Turbulence moderates the relationship between New Product Development and product innovation.

V. FINAL CONSIDERATIONS

This study aimed to carry out a systematic review to find theoretical support on the relationship between new product development and product innovation, moderated by the technological and market environmental turbulence.

These twenty-eight articles selected, only six articles reported that Environmental Turbulence has a moderating effect on Innovation and New Product Development. Pienig (2015) corroborates the proposition that Environmental Turbulence has a moderating effect on the Development of New Products and predicts the needs of consumers. It was found that most of the studies were conducted in China andrecent periods. It may be due to the transition China has been going through in recent years.

In an insignificant percentage, Environmental Turbulence had a moderating effect on the Development of New Products, other the effect was as an antecedent for Innovation, and still separately with the development of new products. In that notice there is a lack of studies that prove the influence of Environmental Turbulence on New Product Development. There is no supporting data, only assumptions. This opens up a range of opportunities to develop new research with clear objectives. To meet this demand there is a need to research the three items at the same time, that is, the effects of Environmental Turbulence directly influence the Development of New Products and Innovation? But in a longitudinal period, because it is known that the effects of economic plans political crises are factors that directly affect and in this way Environmental Turbulence is present, but it is not possible to say if it can occur in a short period of time.

If there is not data, it is practically impossible to conjecture whether Environmental Turbulence has moderating or mediating influence on Development and

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Innovation. This reinforces the idea that the triple alliance must act together. Each link does its part; the Government should support the academy, which is the owner of the knowledge and means of acquiring them and the government financially supporting the surveys, and organizations open to new opportunities.

A reflection in the light of the debate, there are not enough studies that prove the unanimity between the factors that affect New Product Development and Innovation (Oliveira et al., 2017a; 2017b; 2017c). We could make several conclusions, but to stick to only the reflection is already enough, because if it did so we would be concluded in a subjective way, and yet it is not object of the study. Thus, from the analysis of bibliometric research, the present study sought to understand how organizations are acting in the face of Environmental Turbulence in relation to the Development of New Products and Innovation. It would be interesting that future works would bring together studies in Eastern countries and compare them with South America.

In technical terms of thesestudies, it is also verified that there is a gap that needs to be studied longitudinally, which is to verify if the Environmental Turbulence affects the profitability of the organizations. Having said this, we also verify that Environmental Turbulence is a determining factor for innovation or for the Development of New Products.

In a turbulent environment where competitiveness takes on the role of globalization, the company to be competitive must assume asymmetries in the form of competitive advantage and take an innovative position in product, process, and new sources of supply and market opportunities in an organized way and without loss in quality and price. However, the competitive advantage will be maintain with continuous improvements.

We recognize the limitations of the research regarding the scarcity of empirical investigations that address the relationship between the constructs presented, together. It is a highlight,because the limitation the number of databases consulted, as the time cut used.

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