# Role of Entrepreneurial Orientation in Developing Entrepreneurial Competencies: Contingent Influence of Environmental Turbulence

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## ABSTRACT

Entrepreneurship has an integral role in the development of the country's economy. In achieving firm success, the role of entrepreneurial orientation (EO) and entrepreneurial competencies (EC) is an important mechanism to explore. In this study, a model was developed to examine the consequential influence of EO on ECs and environmental turbulence (ET) as a moderator. The population of the study were entrepreneurs from different industries in Pakistan. Based on the Resource-Based view (RBV) and Giessen Amsterdam Model (GAM), a survey of 600 entrepreneurs was conducted to collect data and 422 valid responses were analyzed using Jeffrey's Amazing Statistics Program (JASP). Results suggest a significant influence of EO on EC. ET also has a significant moderating role on the aforementioned relationship. Further, this study concluded that in times of higher ET, firms with an EO have a good chance of survival. In this respect, entrepreneurs are advised to develop and maintain an EO. Policy makers are encouraged to provide support to entrepreneurs during times of high environmental turbulence. Future studies can look at the role of market orientation on EC, as further explore the role of ET

**Keywords:** Entrepreneurship, Environment, Turbulence, Entrepreneurial Orientation, Entrepreneurial Competencies, JASP

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## INTRODUCTION

In the age of turbulence global and national economies are facing multiple challenges due to social and environmental causes. It is becoming quite a challenge for governments to generate employment particularly from public exchequer. In many developing countries, like Pakistan, that have already constrained finances, creating employment opportunities is a big challenge. It is inevitable that, these countries have to create entrepreneurial opportunities. Thus, entrepreneurship is becoming a major priority for these countries. Entrepreneurship is seen as a key factor in determining the dynamism of country's economy (Farinha, Lopes, Bagchi-Sen, Sebastiao & Oliveira, 2020). In the current economic situation like Pakistan, the turbulence in the economic, political and technological environments, is a cause of great interest of researchers and practitioners. In the context, these turbulences have an effect on the development of firm performance (Pesha, 2024). In such a situation, an issue of concern for entrepreneurships is to decide upon which competencies (Al Mamun & Fazal, 2018; Ahmad, 2011; Man & Lau 2000) and orientation (Neumann, 2023; Aulakh & Kotabe, 2005) to develop in order to overcome the challenges posed by turbulence in the business environment. The case is more acute for entrepreneurs who are working in developing economies where the opportunity is available but fragile due to the turbulence in the environment, (Trade and Environment Review*, 2021*) (UNCTAD).

There is a lot of focus on entrepreneurship researched for long about the role of entrepreneurship in generating economic development (Neumann, 2021). But, more work is required for empirically testing the notion (Doran, McCarthy & O'Connor, 2018; Behling & Lenzi, 2019). In any entrepreneurship studies, especially in environmental situation, the development of competencies for growth should be an essential endeavor. Entrepreneurship is not just about risk taking or going for a hit and trial, but about having the right set of skills, knowledge and abilities (Khan, Zubair, Rathore, Ijaz, Khalil & Khalil, 2021). According to Behling & Lenzi (2019), EC can be used to develop stable strategies to respond to unstable social and economic situations. EC are considered as a group of competencies that enable and support successful entrepreneurship (Madichie, 2009; Man, Lau, & Chan, 2002; Thomas & Herrisier, 1991).

On the other side, the significant influence of EO on firm performance has been widely examined (Ibrahim & Aliyu, 2023; Kiyabo & Isaga, 2020; Amin, Thurasamy, Aldakhil & Kaswuri, 2016; Zehir, Can, & Karaboga, 2015). There are a few studies on the effect of EO on SMEs performance. Scholars examined EO to explain performance on the direct effect (Lechner & Gudmundsson, 2014; Van Doorn, Heyden, & Volberda, 2017), the moderating effect (Richard et al., 2004; Ibrahim & Mas'ud, 2016; Ndungu, Wanjau, Gichira, & Mwangi, 2017; Ferreira, Coelho, & Moutinho, 2018), and the mediation effect (Abdul Aziz, 2010; Zainol, 2011; Cho & Jung, 2014; Khedhaouria et al., 2015; Swoboda & Olejnik, 2016). However, a review of the EO literature found that even though this construct improves performance, the empirical results are mixed (Shirokova et al., 2016; Hermann et al., 2010).

Sajilan & Tehseen (2015) suggested the role of ET affecting the relation between EC and success of SMEs. A study by Wang, Chen & Fang (2021) studied the effect of ET on EC. However, limited studies have been found on the integral role of the relationship between EO and EC on SMEs performance, and ET as a moderator in unstable and dynamic turbulent environments like in Pakistan. Therefore, there is an existing gap requiring focus on the above relationship. Although some theories talk about the effect of ET on success, like the Giessen Amsterdam Model, but there is little in the way of research on the effect of ET on the relationship between EO and EC. Most of the studies referred to above have presented a specific application of the concepts in focused settings, targeted to specific industries. This study aimed at providing a comprehensive view of the effects of EO and ET on EC at a generic level, incorporating all the sub-dimensions available to form an overall view of the phenomenon.

## LITERATURE REVIEW

This study used the Resource-based view and the Giessen Amsterdam Model (GAM) as its theoretical foundation. The resource-based view is one of the most intensive and advanced theory of testing firm performance (Barney & Ketchen, 2021). The resource-based view has been extensively applied in entrepreneurship research to examine the factors that impact firms utilize the resources and capabilities to establish firm strategy. On

the other hand, the GAM model presents the elements that are encountered in the path to success. According to GAM model, performance or success is achieved through strategies, which are developed by using the inputs of goals, environment, personality and human capital, Rauch & Frese (2000).

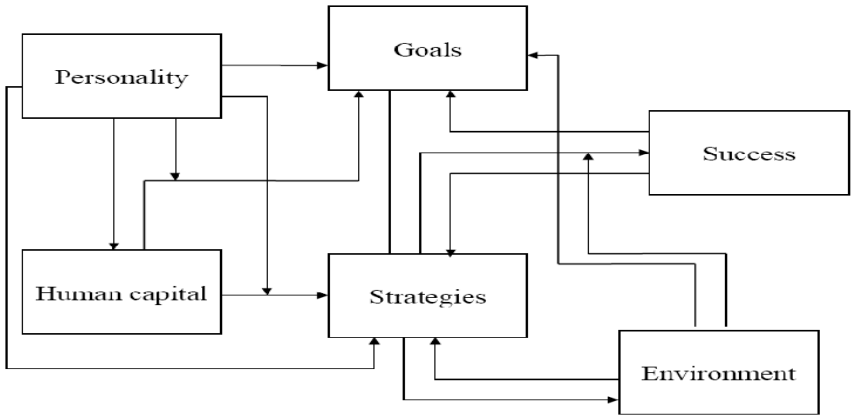


**Figure 1: Giessen Amsterdam Model of Entrepreneurship- Rausch & Frese (2000)**

The GAM model explains the effect of personality on human capital. Personality is akin to the concept of orientation at the firm level. While human capital is an important and foundational element of competencies. We selected the resource-based view and GAM model because it has better explanatory power regarding firm performance and success (Barney & Ketchen, 2021). Previous research in entrepreneurship studies has extensively applied the resource-based view and GAM model to examine the firm performance, and the majority of these studies found the resource-based view and GAM model more valid and beneficial in achieving better results in entrepreneurship (Barney & Ketchen, 2021). Moreover, the resource-based view and GAM model are vital to study the levels and effects of orientation and competencies and the environment in business (Barney & Ketchen, 2021).

Therefore, the theory and model were relevant for this study considering the fact the study aimed to exclusively investigate the firm orientation, competencies and environmental turbulence that may impact firm performance.

## Entrepreneurial Orientation (EO)

EO is a strategic posture that shapes a firm's behaviors and decision-making processes, particularly in how it identifies and exploits new opportunities, allocates resources, and competes in the market. As a core construct in entrepreneurship studies, EO has gained prominence as a framework for understanding entrepreneurial activities. It influences firms at all levels, guiding them toward pursuing new ventures and fostering innovation, risk-taking, and proactiveness (Lumpkin & Dess, 1996; Wales, Gupta, & Mousa, 2013; Rauch, Wiklund, Lumpkin, & Frese, 2009).

Miller (1983) defined an entrepreneurial firm as one that "engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch." This definition highlights the three central elements of EO: innovation, risk-taking, and proactiveness. Firms with strong EO leverage these qualities to navigate uncertainties in the market and stay ahead of competitors.

EO provides direction for firms by encouraging them to exploit available resources to develop new products, ideas, and opportunities. More than just a collection of traits, EO represents a strategic orientation that drives a firm's decision-making processes and behavior in relation to entrepreneurship. According to Kraus, Rigtering, Hughes, and Hosman (2012), EO influences the way firms enter new or established markets with either new or existing products and services. It describes how organizations behave, focusing on how they operate rather than what they produce.

Lumpkin and Dess (1996) expanded on this by noting that EO is concerned with the "methods, practices, and decision-making styles" that managers use in strategy-making. EO embodies how entrepreneurs act autonomously, innovate, take risks, and proactively respond to opportunities in the market. The influence of EO is not limited to new ventures; it is also critical to understanding how firms respond to changes and seek competitive advantages.

Wales (2015) argued that EO should be viewed as an essential component of an organization's overall strategy, often referred to as an "entrepreneurial strategy." This suggests that EO is not only a driver

of entrepreneurial behavior but also a significant contributor to firm performance. Many researchers, therefore, believe that EO plays a crucial role in enhancing different aspects of organizational success.

Anderson, Kreiser, Kuratko, Hornsby, and Eshima (2015), building on the work of Miller (1983) and Covin and Slevin (1991), defined EO as the simultaneous exhibition of entrepreneurial behaviors and a managerial inclination towards strategic actions with uncertain outcomes. This reinforces the notion that EO is a managerial tool, applicable not only to entrepreneurial ventures but also to a wide range of organizations.

Initially, any firm that adopted and adapted to market changes was considered entrepreneurially oriented. However, theorists later clarified that true EO requires firms to be risk-takers, initiating changes such as product innovation or technological advancements, rather than simply following the lead of others (Miller, 1983). Thus, EO involves taking proactive steps to innovate and seize opportunities before competitors, rather than relying on imitation.

Over the years, landmark studies on EO have recognized it as a key contingency supporting organizational performance. While EO has consistently been viewed as a core driver of firm success, it remains a critical framework for understanding how firms navigate and succeed in dynamic markets (Wales, Kraus, Filser, Stockmann, & Covin, 2021). EO thus reflects not only a firm's strategic orientation but also its ability to sustain competitive advantage in a constantly evolving business environment.

## Entrepreneurial Competencies (EC)

An entrepreneur is an embodiment of a set of characteristics and competencies that enable individuals to add value through organizing resources and opportunities for their businesses (Bird, 1995). Competencies as a phenomenon is mainly considered as a group of characteristics that support and enable entrepreneurship in a successful manner (Madichie, 2009; Man, Lau, & Chan, 2002; Thomas & Herrisier, 1991). Competence is taken as the minimum requirement in order to get the launch of new venture or the baseline for that specific venture. Man, Lau, & Chan (2002) defined competency as the capability of a person to perform a specific role or job.

This conceptualization has been extended in entrepreneurship, as the ability to go beyond this base and to outperform the standards for better survival and growth of the firm. EC in an entrepreneur or any other individual can be created as it is a learnable process. Therefore, EC can be defined as any characteristics among individuals such as their values, traits, roles, skills, aims or knowledge etc. which can help form a business and makes its growth and survival easier (Bird, 1995).

Entrepreneurial competencies can be construed as a set of basic characteristics such as skills, specific knowledge, social roles, self-images, traits and motives which result in the creation, growth and continuation of a business venture (Bird, 1995). In line with Bird, Man et al., (2002) posited that entrepreneurial competencies as the overall ability of the entrepreneur to conduct a job related task successfully. Bartlett and Ghoshal (1997) in their study, described three categories of competencies namely skills/ abilities, knowledge/experience, and attitudes/traits. Hence, a study by Hood and Young (1993) came to the conclusion that the most important entrepreneurial competency was leadership skills, followed by written and oral communication skills and human relational skills.

Scholars often linked EC with entrepreneurial success (Sánchez, 2012; Colombo & Grilli, 2005; Low & Macmillan, 1998; Covin & Slevin, 1997; Bird, 1995). EC refer to the qualities and capability of the entrepreneur to get a job done (Singh, Kumar, Singh, Dwivedi, Kumar, 2024; Mishra, & Deshpande, 2023; Pratikto, Winarno & Restuningdiah, 2023; Mitchelmore & Rowley, 2013). Researchers recommended that entrepreneurs had different set of traits depending upon their personalities (Covin & Slevin, 1989). These various clusters of attributes lead to the EC of entrepreneurs (Lessem, 1986). It is taken into account that competency is incomplete without the inclusion of entrepreneurs. These entrepreneurs change the organization in a better way and also add value to the organization with respect to its resources, opportunities and prospects (Bird, 1995). They viewed EC as the ability of entrepreneurs to change and transform the different areas of business and companies. Even, Johnson & Winterton (1999), suggested that EC should be considered as the criteria that differentiate between entrepreneur and non-entrepreneurs.

According to competency theory, if entrepreneurs take into account their habits, behaviors, skills and attitude combined as per the requirement, competency can be generated resulting in better performance. This may even include the development of skills such as interpersonal, presentation and planning etc. (Ronstadt, 1988; Vesper & McMullan, 1988). Most of the previous studies on EC focused on the entrepreneurs' characteristics that lead to high capability and performance. These characteristics can further help to improve the performance and to add to the value of the organization (Thomas & Herrisier, 1991). Many research papers had suggested three forms of competencies depending upon the traits, knowledge and skill of the individual. The EC of any individual have been reviewed, whereas skills can vary up to a long range (Hunger & Wheelen, 1996, Lau, Chan, & Man, 1999; Stuart & Lindsay, 1997). Overall, entrepreneurs require specific competencies—such as foresight, opportunity recognition, and adaptability to manage and grow their organizations successfully (Kutzhanova, Lyons, & Lichtenstein, 2009).

In this study the important aspect to note was which competencies were more relevant to the context of the study. Also, there may be some work required to determine the weightage that each competency carries in effecting firm success in the given environment.

## Entrepreneurial Orientation & Competencies

EO is significantly linked to firm performance (Smart & Conant, 2011). According to Rauch & Frese (2000), entrepreneurs' personality leads to human capital development. Within the personality context, individual orientation is a psychological construct which is line with performance. Hence, human capital of entrepreneur is a generalized term depicting entrepreneur orientation and competencies.

An entrepreneurial orientation is a critical factor that enables SMEs to cope with the challenges of the fast-changing environment by building, integrating and reconfiguring the internal and external competencies (Darwis, 2017). Entrepreneurial orientation is a valuable and unique resource that instigates entrepreneurial competency and performance. This is in line with the concept of RBV and the findings of existing studies (Al Mamun & Fazal, 2018; Barney, 1991; Dimitratos et al., 2014; Grant, 1991).

**H1**: Entrepreneurial Orientation has a significant positive effect on entrepreneurial competencies

## Environmental Turbulence (ET)

ET is defined as 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). In entrepreneurship, a turbulent environment, which is 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/or enter new markets (Calantone, Garcia, & Dröge, 2003). Environmental turbulence is a strong trigger that encourages and forces companies to become more proactive and develop an ability to overcome risks and to see opportunities in market. Environmental turbulence may challenge companies to channel and utilize internal efforts to achieve the goals to change weaknesses into opportunities (Morris et al., 2002; González-Benito et` al., 2009). According to Lee and Tang (2018), environmental turbulence is considered as an antecedent of innovation, and therefore it is imperative that the environmental context be kept in clear focus (Tsai and Yang, 2014).

Environmental turbulence can be categorized into three main elements: market turbulence, technological turbulence, and competitive intensity. Market turbulence refers to the rate of change in customer composition or preferences for products and services, driven by factors such as psychological, economic, demographic, or geographic shifts (Wong, 2014; Tsai & Yang, 2013; Hartono & Sheng, 2015). In turbulent markets, customers frequently change their product preferences or seek new products (Hanvanich et al., 2006). Technological turbulence is the rate of technological change within an industry, defined as the degree of change in product and process technologies (Hanvanich et al., 2006; Huang & Tsai, 2014). As technologies rapidly advance and overlap, they create turbulence for products and services. Lastly, competitive intensity refers to the level of competition within an industry, including factors like promotion, pricing, and the entry of new competitors (Cui et al., 2005; Tsai & Yang, 2013). Competition is a key source of turbulence, as highlighted in Porter's five forces model (Porter, 1979).

## Environmental Turbulence & Entrepreneurial Competencies

The environment plays a crucial role in the formation and life cycle of entrepreneurship, with environmental turbulence exerting significant influence throughout. Numerous studies have confirmed this effect, with recent research exploring its role in achieving sustainable competitive advantage (Shalender & Sharma, 2022), corporate social responsibility and disruptive innovation (Wang et al., 2022), and eco-innovation in sustainable business (Larbi-Siaw et al., 2022). Dahan (2023) specifically highlighted the strong impact of technological turbulence on EO. In turn, orientation itself effects EC (Al Mamun & Fazal, 2018). Most contemporary studies on ET in entrepreneurship focused on MSMEs and SMEs across various industries, from IT (Kuankuan & Zhang, 2022) to culinary (Waty et al., 2022). There have been a few studies related to the effects of ET on EC. Rosenbusch, Birkinshaw & Meyer (2011) have presented a moderating effect of industry characteristics and organizational culture on the relationship between environmental turbulence and entrepreneurial competencies. Wales & Shepherd (2013) are of the opinion that excessive ET can indirectly pose a negative influence on EC. Although this study was not done in the context of developing countries. Sajilan and Tehseen (2015) in their qualitative work suggested that ET and network competence improved the relationship between entrepreneurial competencies and entrepreneurial success. Ibidunni, Ogundana & Okonkwo (2021) in their findings presented that EC can help in mitigating the effects of environmental turbulence on firms. In Pakistan, Sajjad, Ibrahim, and Shamsuddin (2022) found that environmental turbulence played a key role in enhancing the performance of SMEs in the manufacturing sector. Similarly, studies in Iran and Bahrain confirmed the positive impact of ET on firm innovation and entrepreneurial orientation respectively (Mokhtarzadeh et al., 2022; Omar, 2022).

As evident from the review of literature given in the preceding paragraphs, it is quite clear that most of the studies have concentrated on presenting a moderating role of ET in effecting the relationships of entrepreneurial competencies either as an antecedent to success or as a consequence of orientation. According to the Giessen Amsterdam model, human capital is affected by personality. As stated earlier, personality is akin to orientation and human capital is a critical element of competencies for a firm. Further, both human capital and personality have an effect on goals and

strategies. Further, ET is a phenomenon of the environment. Furthermore, according to GAM the environment also has a direct effect on goals and strategies. Environmental influences may logically affect all the relationships given in the GAM. As a corollary turbulence being a part of the nature of the environment would affect personality, akin to orientation and human capital akin to competencies as well. Consequently, as a corollary it may be theorized that environmental turbulence may moderate the relationship between EO and ET.

**H2**: ET has a moderating effect on the relationship between EO and EC.

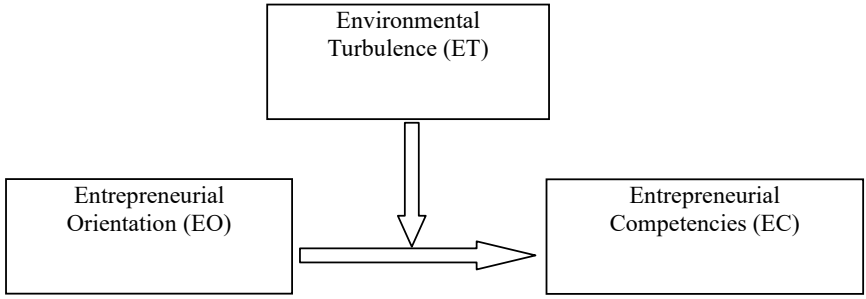


**Figure 2: Conceptual Model**

The conceptual model developed above depicts the direct effect of EO on EC, as conceptualized in H1. The second relationship is the moderating influence of ET on the relationship between EO and EC.

## METHODOLOGY

The study followed a cross-sectional design, conducted within a single time frame. A questionnaire-based survey was administered to entrepreneurs of Pakistani SMEs, targeting individuals who either were currently running their businesses or have at least two years of prior business experience. Simple random sampling technique was employed to select a sample from the population. The collected data was analyzed using JASP software. For analysis regression was used to determine the direct effect of EO on EC. Moderation analysis was carried out using the Hayes (2009) technique.

## Data Collection

Formal databases with established data of entrepreneurs were not available. So, the researchers collected contact information of potential respondents through contacts available in multiple industries across multiple cities of Pakistan. A sampling frame of 1200 respondents was created based on their representation of industry, education level and location, to ensure that the questionnaire in English would be comprehended by the respondents. Based on simple random sampling, all the potential respondents were given a unique code (Bougie & Sekaran, 2019). All the codes were shuffled and then every second respondent was contacted to fill up a questionnaire, created on google form. Of the 600 forms distributed, 470 forms were returned out of which 422 were found to be sufficiently completed and suitable for further analysis

## Instruments

A 9-item ENTRESCALE for measuring EO construct modified by Covin & Slevin (1989). The dimensions of EO covered in the instrument were innovativeness, proactiveness and risk taking. ET was measured using an eight items scale for the second-order reflective measurement model of ET consisting of three first-order models, namely market turbulence, technological turbulence and competitive intensity adopted from Turulja and Bajgoric (2019). To measure EC, items developed by Ibidunni, Ogundana, & Okonkwo (2021) were used in this study. This scale used the dimensions of opportunity, relationship, strategic, risk-taking, learning, conceptual and organizing. A five-point Likert scale was used with 1 representing “strongly disagree” and 5 representing strongly agree.

## Demographics

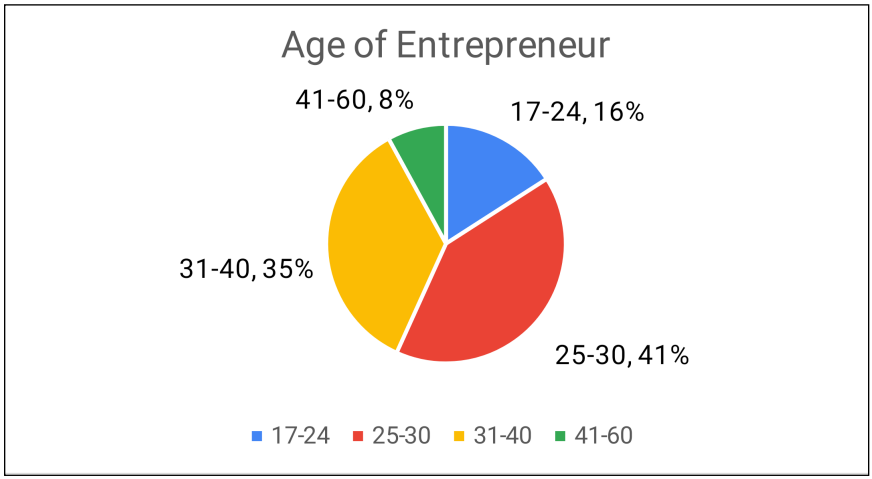


**Figure 3: Age of Respondents**

Most of the respondents about 40% were between the age of 25 and 30. Some 11.5% of the respondents were between 19 -21 years of age. Only 6.5% of the respondents were below the age of 18 or above the age of 25.

## Reliability

**Table 1: Mean, Standard deviation, Correlations & Cronbach Alpha**

| | Mean | Std. Deviation | Ent_O | Ent_C | Env_T |
|---|---|---|---|---|---|
| **Ent_O** | 3.769 | 0.504 | **0.816** | | |
| Ent_C | 3.721 | 0.472 | 0.648 | **0.786** | |
| Env_T | 3.817 | 0.540 | 0.581 | 0.566 | 0.847 |

Values in Table 1 represent the mean, standard deviation, correlations between the variable and Cronbach alpha values of reliability. All the mean values for all the variables were above 3.5 which suggested that most of the responses were inclined towards agreement with the items. Environmental Turbulence (ET) had the highest mean value showing that a larger number of respondents indicated that the environment had a higher level of turbulence. The standard deviation value for entrepreneurial orientation was higher than the other two variables indicating a stronger change in opinion in the scale measures. The correlations of all the variables

were significant at the 95% level of confidence. All the values were within acceptable ranges and suggested significant levels of correlations between the variables. The values given in bold diagonally represent the Cronbach alpha values of reliability. All of the values were above the threshold of 0.7.

## Validity

**Table 2: Validity of Constructs of EO**

| | CR | AVE | INNOV | PA | RT |
|---|---|---|---|---|---|
| **INNOV** | 0.826 | 0.486 | - | - | - |
| **PA** | 0.801 | 0.459 | 0.685 | - | - |
| **RT** | 0.758 | 0.377 | 0.619 | 0.753 | - |

The numbers given in Table 2 represent the CR, AVE and HTMT values of the dimensions of Entrepreneurial Orientation, including innovativeness (INNOV), proactiveness (PA) and risk taking (RT). The CR values were above 0.7 which indicated good composite reliability. The AVE values were slightly below 0.5. The AVE values were used to measure the overall amount of variance in the latent construct. In such a case if CR values were above AVE, provided that CR values were above 0.7, then convergent validity was considered acceptable (Bougie & Sekaran, 2019).

**Table 3: Validity of Constructs of EC**

| | CR | AVE | OC | CC | LC | RTTC | SC | OPPC |
|---|---|---|---|---|---|---|---|---|
| **OC** | 0.818 | 0.529 | - | - | - | - | - | - |
| **CC** | 0.887 | 0.561 | 0.919 | - | - | - | - | - |
| **LC** | 0.845 | 0.520 | 0.837 | 0.888 | - | - | - | - |
| **RTTC** | 0.833 | 0.512 | 0.739 | 0.797 | 0.837 | - | - | - |
| **SC** | 0.839 | 0.502 | 0.812 | 0.805 | 0.846 | 0.892 | - | - |
| **OPPC** | 0.850 | 0.529 | 0.802 | 0.799 | 0.847 | 0.746 | 0.758 | - |

The figures given in Table 3 represent the CR, AVE and HTMT values of the dimensions of Entrepreneurial Competencies of organizing competency (OC), conceptual competency (CC), learning competency (LC), risk-taking competency (RTTC), strategic competency (SC), relationship competency (RC) and opportunity competencies (OPPC).

**Table 4: Validity of Constructs of ET**

| | CR | AVE | MT | TT | CI |
|---|---|---|---|---|---|
| **MT** | 0.828 | 0.443 | - | - | - |
| **TT** | 0.847 | 0.523 | 0.772 | - | - |
| **CI** | 0.825 | 0.485 | 0.640 | 0.588 | - |

The numbers given in Table 4 represent the CR, AVE and HTMT values of the dimensions of Environmental Turbulence (ET). The dimensions covered were market turbulence (MT), technological turbulence (TT) and competitive intensity (CI).

For identifying the latent variable reliability, the CR ≥ .70, (Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. , 2022). For all the measured constructs, the CR values were greater than 0.7. AVE was used to measure convergent validity. For the constructs of entrepreneurial competencies (EC), the AVE values were above 0.5 which was considered acceptable. On the other side, the AVE values for the constructs of entrepreneurial orientation and (EO) and environmental turbulence (ET), some measured variable values were less than 0.5 and near 0.4. Some experts recommend that if CR values are above 0.7, then it is acceptable to consider convergent validity as good enough (Bougie & Sekaran, 2019) as AVE itself is considered a conservative measure (Malhotra, 2010, p. 702; Fornell & Larcker, 1981).

All the values of the measured variables had HTMT values below 0.850. Thresholds values for HTMT were 0.850 for strict and 0.900 for liberal discriminant validity. All the values were below 0.9 so strict discriminant validity was ascertained for all the measured variables.

## RESULTS

### Entrepreneurial Orientation and Entrepreneurial Competencies

The first hypothesis developed stated that entrepreneurial orientation has a positive impact on entrepreneurial competencies. The results as given in Table 5 indicated a strong positive effect.

**Table 5: Impact of MO on EC**

| | | | | | | | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|---|
| | | | Estimate | Std. Error | z-value | p | Lower | Upper |
| Ent_O | → | Ent_Com | 0.648 | 0.037 | 17.504 | < .001 | 0.576 | 0.721 |

*Note.* Standard errors, test statistics, and confidence intervals are based on standardized estimates.

The overall model fit indicated by the $R^2$ value, which was 0.479, suggested a strong model fit which meant that 48% of the variation in EC can be attributed to EO. This may be interpreted as saying that EO accounted for around 48% of the entrepreneurial competencies. The estimate value that showed impact was also quite significant. The estimate value was 0.648 which suggested that a unit change in EO will effect a 65% change in EC. Meaning that increasing EO will positively help in improving EC. In light of these results, the alternate hypothesis was accepted meaning that entrepreneurial orientation did have an impact on entrepreneurial competencies.

## Moderating effect of Environmental Turbulence

The second hypothesis developed stated that environmental turbulence moderated the relationship between entrepreneurial orientation and entrepreneurial competencies. The results as given in Table 6 and Fig. 3 indicated a significant moderating effect. The overall model fit indicated by the $R^2$ value was 0.479 which showed a strong model fit.

**Table 6: The Moderating Effect of ET on the Relation between MO and EC**

| | | | | | | | | | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Env_Tur | Estimate | Std. Error | z-value | p | Lower | Upper |
| Total | Ent_O | → | Ent_Com | 15 | 0.531 | 0.050 | 10.631 | < .001 | 0.433 | 0.628 |
| | Ent_O | → | Ent_Com | 30 | 0.501 | 0.044 | 11.335 | < .001 | 0.414 | 0.587 |
| | Ent_O | → | Ent_Com | 45 | 0.481 | 0.043 | 11.163 | < .001 | 0.397 | 0.566 |
| | Ent_O | → | Ent_Com | 60 | 0.467 | 0.044 | 10.666 | < .001 | 0.381 | 0.553 |
| | Ent_O | → | Ent_Com | 75 | 0.463 | 0.044 | 10.449 | < .001 | 0.376 | 0.550 |
| | Ent_O | → | Ent_Com | 100 | 0.395 | 0.063 | 6.307 | < .001 | 0.272 | 0.518 |

*Note.* Standard errors, test statistics, and confidence intervals are based on standardized estimates.

The moderating effect of ET is depicted in Table 6 which presents the effect of EO on EC at differing values of ET. The estimate values of EO on EC at all levels of ET were significant at the $p<0.05$ level of testing. An

interesting trend was uncovered suggesting that as ET values increase, the estimate values of the relationship values between EO and EC decrease.

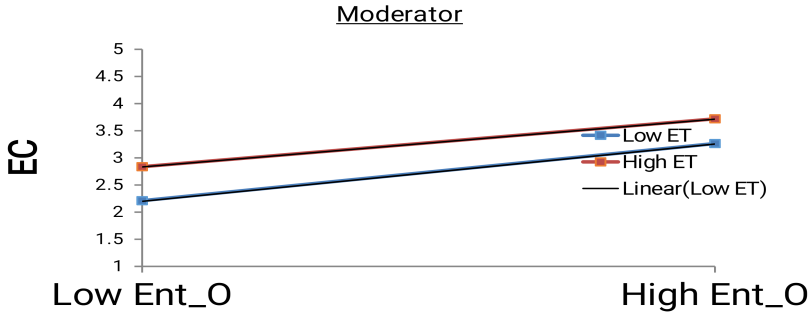


**Figure 4: Moderation of Environmental Turbulence**

The above Fig. 4 depicts the moderating effect of ET on the relation between EO and EC.

For low levels of environmental turbulence, the EC levels were lower at lower levels of EO. Still at low levels of environmental turbulence as EO increases EC goes up as well. For high levels of turbulence in the environment, the EC levels were low for lower levels of EO.

## DISCUSSION

One of the key objectives of this study was to examine the role of entrepreneurial orientation (EO) in developing entrepreneurial competencies (EC). Previous research, including studies by Miller & Toulouse (1986), Lumpkin (1996), Covin & Miller (2014), Wiklund & Shepherd (2003), and Lee & Chu (2017), has demonstrated a positive relationship between EO and firm competencies. The findings of this study reinforce these conclusions, indicating a strong and significant impact of EO on the development of EC. In the context of Pakistan SMEs, the results suggest that EO provides a substantial advantage in enhancing EC, possibly exerting a greater influence than any other variables currently discussed in the literature.

This is an important discovery, offering a clear framework for entrepreneurs striving for success. The most structured path to success lies in

developing robust competencies, which can be achieved by fostering strong market and entrepreneurial orientations. These findings are also consistent with the GAM, which highlights the connection between orientation and competencies through the interplay of personality and human capital.

The second objective of this study was to explore the role of environmental turbulence in the relationship between entrepreneurial orientation (EO) and entrepreneurial competencies (EC). According to Wang, Chen, and Fang (2020), the relationship between environmental turbulence and a firm's EO follows an inverted U-shaped curve. This relationship is positively moderated by network relationships between firms but negatively impacted by organizational inertia.

The findings of this study suggest that during periods of low environmental turbulence, there is a natural enhancement of EC in firms with both low and high EO. However, during periods of high environmental turbulence, firms experience a strong drive to improve their EC, regardless of their EO level. It appears that under heightened turbulence, firms enter a state of "overdrive," vigorously developing their competencies to outperform competitors. These results align with previous research and contribute meaningfully to contemporary studies, particularly within the framework of the GAM. This model theorizes the influence of environmental turbulence on the relationship between personality, represented by orientation, and human capital, represented by competencies. Thus, it can be stated with some confidence that environmental turbulence affects the dynamic between EO and EC, as suggested by the GAM framework.

In connection to the context of entrepreneurs in Pakistan, it is quite clear that in a highly turbulent environment, it is quite helpful to have an entrepreneurial orientation. Companies can take advantage of low turbulence to invest in developing and enhancing competencies. Even in high turbulence, the effect of entrepreneurial orientation is strong enough to support development of competencies that in turn help the company gain or maintain success. In fact anecdotal evidence does suggest that most of the Pakistani companies, who have been in the market for a longer period of time, do keep on innovating to maintain success.

From a policy perspective, it is recommended that entrepreneurial orientation which is gauged through innovation, should be encouraged by allowing space for innovative ideas and products to operate in the markets. Policy makers should not stifle innovation with regulation, but instead allow innovation to flourish and entrepreneurs should be encouraged to set up business, develop competencies and supported in times of environmental turbulence so that they can keep developing competencies and move towards success.

## CONCLUSION

This study was an effort to highlight the role of environmental turbulence in the development of entrepreneurial competencies. The Literature was quite clear on the matter that there is a strong effect of entrepreneurial orientation on the development of entrepreneurial competencies. This is an important issue to study, as there is a lot of pressure coming on governments, particularly in developing countries, to foster entrepreneurship in order to improve their economies and provide employment to an increasingly young population. The more important relationship in this background was to study the effect of environmental turbulence on the development of competencies based on orientations. This study used a survey based empirical analytical design to measure the effect of environmental turbulence on the relationship between entrepreneurial orientation and entrepreneurial competencies. The sample was drawn from entrepreneurs from major cities in Pakistan. Results suggest a strong effect of entrepreneurial orientation on entrepreneurial success. Environmental turbulence also plays a significant moderating role in the relationship between entrepreneurial orientation and entrepreneurial competencies.

From a theoretical perspective the results of this study reinforce the previous studies developed in the Resource based view (RBV) and GAM in the context of entrepreneurship. Competencies are human capital based resources which are effected by the orientation or personality of the entrepreneurial organization. Another important contribution is the empirical determination of the effect of environmental turbulence on the link between orientation and competencies. This was again based on theorization from the GAM logically seeking the effect of turbulence in the environment

effect the link between personality, akin to orientation and human capital akin to competencies. Moderation analysis discussed before proves the effect to exist.

In the local context we do see that an entrepreneurial orientation has helped companies to develop competencies and innovate. Anecdotal evidence supports this notion as most of the successful Pakistani companies have kept on innovating even in times of high turbulence to survive. For policy makers, it is recommended that they encourage more entrepreneurs to operate and develop their competencies and not stifle them by regulation. Entrepreneurships should be provided support in times of environmental turbulence to allow them to develop competencies and move towards attaining success.

## Limitations and Future Research

There were several factors that limited this study. At first this study was only conducted in the context of Pakistan, though it is a very good case of environmental turbulence and a tough environment for entrepreneurships to operate. Only a few cities of Pakistan were covered where the researchers were able to identify and reach entrepreneurs who were willing and able to reply to the questionnaire. The study was cross sectional and limited in terms of the length of time available to conduct the study. This study was also self-funded by the researchers.

There are many new areas that are open for future research as a result of this study. The Literature search suggests the role of market orientation in developing entrepreneurial success. The same can be applied in studying the role of market orientation in developing entrepreneurial competencies as an antecedent mechanism. The role of environmental turbulence also needs to be explored in generating entrepreneurial success, particularly in highly turbulent environments. Entrepreneurial effort requires a group of competencies to reach success in any business and community context (Colombo and Grilli, 2005). Which competencies are more relevant in the given context of the study is something to be researched. Which source of turbulence may have a higher effect on development of particular entrepreneurial competencies is something that future studies can take up. More studies can be made to look at the effect of marketing orientation in its

effects on entrepreneurial competencies and entrepreneurial success. Future research can also look at comparative analysis of entrepreneurial success between developing, developed and underdeveloped economies. Pattern of entrepreneurship after severe turbulence like local or regional conflicts can also be an interesting area of future research. It is inevitable for countries to encourage entrepreneurship, if they intend to generate employment at a large scale. There are studies required to develop a practical roadmap for entrepreneurs to engage in entrepreneurships in turbulent environments, which may lead them to success. This study was an effort in this regard.

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