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# RISK TAKING PROPENSITY- BUSINESS PERFORMANCE RELATIONSHIP: MODERATING EFFECT OF ENVIRONMENTAL UNCERTAINTIES

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***Abstract:*** *The purpose of this study is to assess the relationship between risk taking propensity and business performance relationship. Structure Equation Modelling with Moderation Analysis has been applied on a sample of 457 Indian organizations. The study reveals a significant positive affect of risk taking propensity on business performance. Study affirms the contextual nature of risk taking propensity - business performance relationship and reveals that the strength of risk taking propensity - business performance relationship is affected by the degree of environmental uncertainties. Firms operating in dynamic environment are likely to be benefitted more from risk taking propensity than firms operating in stable environment. Study contributes to literature by refining the inventory of risk-taking propensity. Study implies that the organizational decision makers should not feel hesitant while venturing into unknown or introducing new products or services. The pursuit of risk taking strategic posture could be financially worthwhile and might be a source of sustainable growth.*

***Key Words:*** *Risk Taking Propensity, Business Performance, Environmental Uncertainties, Risk-Return relationship, Moderation analysis.*

## INTRODUCTION

Business environment in the twenty-first century has undergone a major transformation (Kanter & Brinkerhoff, 1981; Ghalayini & Noble, 1996; Bititci, Turner & Begemann, 2000; Yusuf, 2002; Kennerley & Neely 2003). Advanced Technology has shortened the product life cycle. Automation has resulted in increased production capacity with better product quality. Enhanced global trade has made the market more competitive and organizations are performance driven than ever before. Relaxation of trade restrictions has changed the face of market competition. Advent of e-business makes the consumer more aware and informed. Though all these changes have resulted in higher consumer satisfaction, but at the same time these changes often erode managers' ability to forecast future events as well as their impact on business. The complexities and dynamism of modern business environment necessitate for a business to take risk and to invest in unknown new products, markets and technologies.

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*Risk taking* is a major construct in business management. It is generally seen that risk taking propensity is positively related with organizational success and growth (e.g. Covin & Slevin, 1989; Miller & Bromiley, 1990; Naman & Slevin, 1993; Lumpkin & Dess, 1996, 2001; Zahra, Jennings & Kuratko, 1999; Stewart & Roth, 2001; Folta, 2007; Hughes & Morgan, 2007; Saini & Martin, 2009; Shepherd, Covin & Kuratko, 2009; Yu, 2012). However, few studies find an insignificant relationship between risk taking propensity and business performance (e.g. Bowman, 1980, 1982; Marsh & Swanson, 1984; Alvarez & Barney, 2005; Naldi, Nordqvist, Sjoberg & Wiklund, 2007). Some studies reveal that risk taking propensity - business performance relationship is shaped like 'inverted U' (e.g. Begley & Boyd, 1987; Kreiser, Marino & Weaver, 2002; Kreiser & Davis, 2010; Tang & Tang 2012; Kreiser, Marino, Kuratko & Weaver, 2013). A very high or very low degree of risk taking propensity may not be desirable in certain market situations (Tang, Tang, Marino, Zhang & Li, 2008). The diversity in the risk taking propensity - business performance relationship raises an important concern about the suitability of risk taking strategic posture in different environmental context.

The formation and empirical testing of risk taking propensity – business performance models have primarily been done in developed economies and very little work has been done in India and other developing countries. The social, cultural and economic environment of developing countries not only differs from those of developed countries rather promotes cautious and incremental behaviour. Family business environment curbs professionalism and obstruct investment in the unknown new market and technologies. Lack of resources often hinders manager's willingness to make large and risky resource commitment (Rabin, 2000). An inadequate or ineffective measure to protect patent and copyright discourage corporate for taking risk on name of novelty and innovation. In emerging economies, the risk aversion nature of entrepreneurs makes risk taking propensity - business performance relationship more complex and challenging. India, as one of the fastest growing economies, provides a compelling context to refine our understanding on risk taking propensity – business performance relationship.

Present study is an endeavour to fill these gaps by answering following research questions:

(i) How does risk taking propensity affect the performance of Indian organizations?

(ii) Is risk taking propensity - business performance relationship contextual in nature?

## THEORETICAL PERSPECTIVE

Risk has often been defined as variability of actual outcome from expected average outcome (Armour & Teece, 1978). It reflects the degree of uncertainty or possibility of realising unwanted or negative return associated with an entrepreneurial venture. According to Sitkin and Pablo (1992), "risk is the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realized".

Risk is an integral part of business (Kreiser *et al.*, 2002). Every business undertaking has to take some amount of risk in one or the other situation. Risk taking propensity reflects firm's disposition to devote sizeable resources to projects that contains a considerable probability of failure, along with chances of high return (Covin & Slevin, 1989; Swierczek & Ha, 2003; Feifei, 2012; Islam & Tedford, 2012; Kraus, Rigtering, Hughes & Hosman, 2012). It discloses firm's propensity to support projects, whose payoffs are uncertain (Begley & Boyd, 1987; Gupta & Pandit, 2012; Bedi & Vij, 2015). Miller and Friesen (1982) have defined risk taking propensity as "the degree to which managers are willing to make large and risky resource commitments - i.e., those which have a reasonable chance of costly failures". It discloses the managerial preferences for adoption of bold and aggressive behaviour, while exploiting environmental opportunities (Richard, Barnett, Dwyer & Chadwick, 2004; Gupta & Pandit, 2012). According to Kreiser *et al.,* (2002), "risk taking is the propensity of firm's top management, to take bold actions such as venturing into unknown new markets and committing a large portion of resources to venture with uncertain outcomes". Baird and Thomas (1985) measured risk taking propensity of a firm through actions such as: 1. committing a relatively large portion of assets on the name of uncertainty; 2. venturing into the unknown; and 3. borrowing heavily.

Risk is an inherent characteristic of business, but it is generally seen that entrepreneurial firms took more risk *viz-a-viz* non - entrepreneurial firms (Miller, 1983; Carland, Hoy, Boulton & Carland,1984; Covin & Slevin, 1989; Sarasvathy, Simon & Lave, 1998; Falbe, Dandridge & Kumar, 1999). Cantillon (1734) considers risk taking as a paramount attribute of entrepreneurship. He describes entrepreneur as a rational decision-maker who bears risk, manages uncertainties and provides the management of the firm. While entering new market, exploring new processes, developing new technologies, introducing new products and services, hiring managerial personnel, spending aggressively on advertisement and seeking unconventional solutions to problems and needs, an entrepreneurial firm have to assume a considerable degree of risk (Baird & Thomas, 1985; Barringer & Bluedorn, 1999; Hornsby, Kuratko & Montagno, 1999; Fiegenbaum & Thomas, 2004; Kreiser & Davis, 2010).

In entrepreneurship and strategic management literature, risk taking propensity has emerged as one of the significant predictor of firm's success (Brockhaus, 1980; Baird & Thomas, 1985; Fiegenbaum & Thomas, 1988, 2004; Kreiser & Davis, 2010). Risk taking is more than an act of assumption of risk and uncertainty; rather it is a systematic process of risk management (Arena & Arnaboldi, 2014; Singh, Yadav &

Jain, 2015). According to Dess and Lumpkin (2005), entrepreneurial firms actively scan their environment, identify potential opportunities, systematically reviewing the level of risk involved in those opportunities, match the level of risk with organizational strengths and weaknesses, and create scenarios of likely outcomes to ease or mitigate objective risks - when faced with environmental uncertainties. Drucker (1985) posited that entrepreneurs are actually risk managers, who anticipate the probable risk and provide solution for all those issues which could impact the functioning of an organization.

Risk taking propensity equip entrepreneurial firms with the capabilities to act quickly and aggressively on the emerging market opportunities by displaying bold behaviour and making fast resource commitments (Lumpkin & Dess, 1996; Vij & Bedi, 2012). Risk taking propensity primarily focuses upon the behaviour required to exploit opportunities. Khandwalla (1976, 1987) finds a strong relationship between firm performance and organizational risk-taking ability. MacCrimmon and Wehrung (1990) have considered risk taking propensity as a strategic tool for the survival and success of an organization. New products, services, technologies and administrative techniques will not come into existence unless a firm undertakes considerable degree of risk (Islam & Tedford, 2012). According to Covin and Slevin (1991), "organizations which prefer status quo may not able to maintain a strong industry standing relative to more aggressive competitors". Based upon above arguments, it has been hypothesised that

*Hypothesis 1: Risk taking propensity significantly impacts business performance.*

Risk is a contextual phenomenon (Bowman, 1982; Fama & Jensen, 1983; Baird & Thomas, 1985; Eisenhardt, 1989; Fama & French, 1993; Wiseman & Catanach, 1997; Wiseman & Gomez-Meija, 1998). The nature and strength of risk taking propensity - business performance relationship is often impacted by the environmental context in which an organization operates (Zahra & Gravis, 2000; Dimitratos, Lioukas & Carter, 2004; Kreiser & Davis, 2010; Vij & Bedi, 2012). In dynamic and uncertain business environment, the existing range of products and services becomes inadequate and the organizations that remain conservative in their expenditure on R&D; remain stick with tried and tested products, services and techniques; and maintain the policy of status quo, may lose their market share. Environmental uncertainties create a lot of challenges in the firm's environment and increase the chances of business failure. In dynamic environment, where customers taste and preferences change regularly and opportunities emerge continuously; firms who take risky alternatives and introduce new products and services, in the name of uncertainties, often gain extra market share and become market leaders (Kreiser & Davis, 2010). According to Wiseman and Catanach (1997), the risk taking propensity – business performance relationship is context specific and for better understanding of above relationship one must consider the context, in which an organization operates. According to Kreiser *et al.* (2002), "congruence or fit among key variables such as industry conditions and organizational processes is critical for obtaining optimal performance and the relationship between two variables is depended upon the interference of a third variable". Libby and Fishbur (1977) have suggested that the risk taking ability of a firm is often affected by characteristics of decision maker, risk tolerance of firm and requirement of the situation i.e. how daring they are (top management team), i.e. how supportive it is (organizational culture), and i.e. how demanding the situation is (environmental context). Moreover, factors such as: how the risk problem is framed (Baird & Thomas 1985), entrepreneur's assessment of risk and result of past risk taking (Goll & Rasheed 1997), and the ability to perform under risky conditions (Lichtenstein & Brush, 2001; Soininen *et al.*, 2012) also affects the strength of risk taking propensity – business performance relationship. Hence, based upon above arguments it has been assumed that

*Hypothesis 2: Environmental uncertainties moderates risk taking propensity – business performance relationship.*

## METHODOLOGY

Study is based upon descriptive, cross sectional research design. A purposive sample of 500 senior level decision makers (key informants) of Indian organizations has been taken. Data has been collected through a personal survey. All responses were screened for completeness and seriousness. Few responses were found outliers. After removing outliers, 457 responses were selected for analysis. The sample profile is shown in Table 1.

**Table 1**
**Sample Profile (N = 457)**

| *Sr. No.* | *Parameter* | *Description* | *Number of firms* | *Percentage* |
|---|---|---|---|---|
| 1. | Nature of Industry | Manufacturing | 312 | 68.27% |
| | | Non- Manufacturing | 145 | 31.73% |
| 2. | Age of Firm | 15 years or more | 368 | 80.53% |
| | | Less than 15 years | 89 | 19.47% |
| 3. | Number of Employees | 250 or more | 342 | 74.84% |
| | | Less than 250 employees | 115 | 25.16% |
| 4. | Annual Turnover | Rs. 500 crore or more | 155 | 33.92% |
| | | Between Rs. 50-500 crores | 302 | 66.08% |

### Measurement

To measure the firm's risk taking propensity, a five item scale has been developed. These five items reflect the firm's propensity to engage in high-risk projects; to venture into unknown new markets; to commit a large portion of resources to venture with uncertain outcomes; and to support and encourage risk taking behaviour. All these items have been sourced from literature (e.g. Covin & Slevin,1989; MacCrimmon & Wehrung, 1990; Miller & Bromiley, 1990; Naman & Slevin 1993; Wiseman & Gomez-Meija, 1998; Zahra & Gravis, 2000; Matsuno, Mentzer & Ozsomer, 2002; Dimitratos *et al.*, 2004; Richard *et al.*, 2004; Naldi *et al.*, 2007; Stam & Elfring, 2008; Ullah, Ahmad & Manzoor, 2013; Bedi & Vij, 2015).

Business performance has been assessed through the subjective assessment of key informants. Sales growth, return on investment and market share has considered as the indicators of business performance. All the indicators of business performance reflect the financial performance of an organization and have commonly been used in literature (e.g. Venkatraman, 1989; Zahra & Gravis, 2000; Atuahene-Gima & Ko, 2001; Morgan & Strong, 2003; Wiklund & Shepherd, 2003, 2005; Yang, Li-Hua, Zhang & Wang, 2007; Stam & Elfring, 2008; Clercq, Dimov & Thongpapanl, 2010; Tang & Tang, 2012; Kraus *et al.,* 2012; Grunhagen, Wollan, Dada & Watson, 2014).

To operationalize environmental uncertainties, an eight item seven-point scale refined by Naman & Slevin (1993), based upon the earlier work of Miller and Friesen's (1982) and Covin and Slevin (1989), has been adopted. First five items gauge the perception of key decision makers regarding the velocity and intensity of change in factors like: customer demand and preference, actions of competitors, pace of technological updataion and rate of product obsolesce. Next three items disclose the relative attractiveness of an industry - in terms of investment opportunities, regulatory restrictions and dominance of environmental forces.

The scales have been tested for the content validity. The instrument has also been pre-tested and found satisfactory for the purpose of study.

**Analysis**

A three step procedure has been adopted for the analysis. Confirmatory Factor Analysis has been applied for the assessment of the measurement adequacy of constructs under investigation. The impact of risk taking propensity on business performance has been assessed through Structural Equation Modelling. Moderation Analysis has been applied to measure the impact of environmental uncertainties on the nature and strength of risk taking propensity - business performance relationship.

The strength of relationship between manifest variables and latent constructs of risk taking, business performance and environmental uncertainties has been assessed by applying reflective measurement theory. A measurement model under the framework of Confirmatory Factor Analysis has been conceptualized (refer figure 1) and tested for the model fit and measurement adequacy.

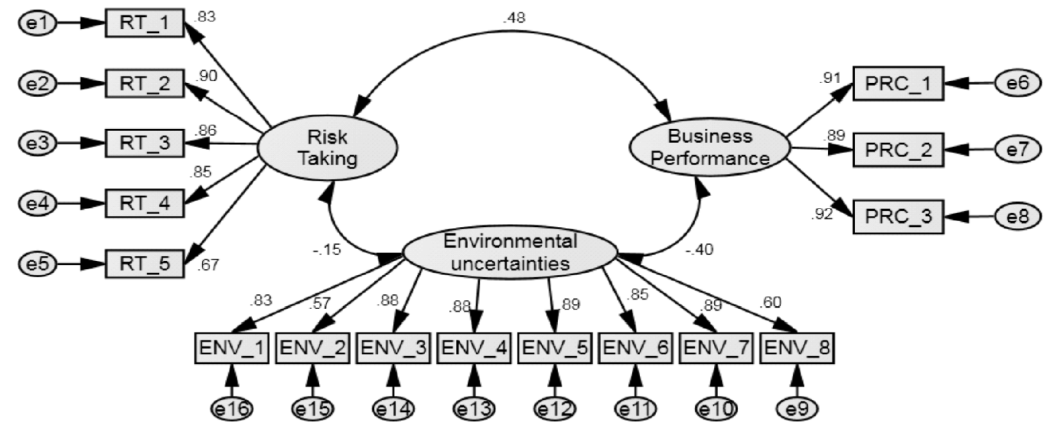


**Figure 1: Measurement model of constructs under investigation**

The result of measurement model reveals a Normed chi-square statistic of 2.49 (252.08/101); CFI = .974; NFI = .958; GFI = 0.931, AGFI = 0.907; RMSEA = 0.057; and RMR = 0.054. All these indices are significant and indicate a good fit. Standardized factor loadings (SFL) of all the scale items exceed the cut off of .50 (refer Figure I and Annexure I). High score of average variance extracted (AVE) for the constructs of risk taking (.68), business performance (.82) and environmental uncertainties (.65) support the convergence of reflective indicators towards their latent constructs. Composite reliability (CR) of .91 for the construct of risk taking, 0.94 for the construct of business performance and .93 for the construct of environmental uncertainties meet the criteria of .70 and affirms internal consistency of scale items. All these indices (i.e. SFL, AVE and CR – Annexure 1) provide sufficient evidence in support of convergent validity of underlying constructs.

To assess the causal relationship between risk taking propensity and business performance, a structural model has been conceptualized and tested for its fit and significance (refer Figure 2).

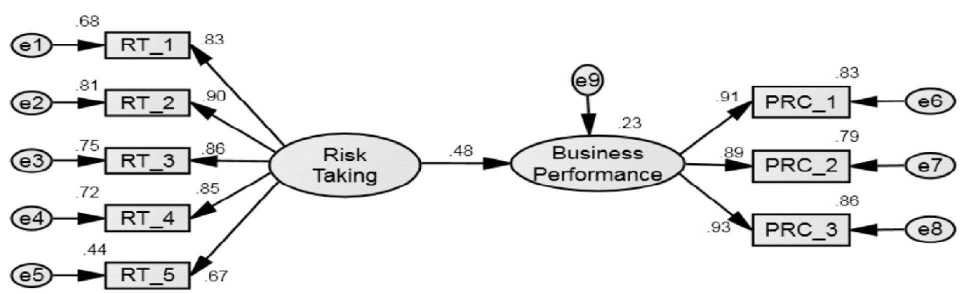


**Figure 2: Structural model of Risk Taking Propensity – Business Performance Relationship**

The result of structural model reveals a Normed chi-square of 2.416 (45.90/19); CFI = .990; NFI = .984; AGFI = 0.976; GFI = 0.987; RMSEA = 0.056; and RMR = 0.074, which are all significant and affirm the claim that the model specified by the theory reproduces itself through observed data i.e. there is no significant difference between the estimated covariance matrix and observed covariance matrix. The assessment of the structural parameter estimates of the specified path (i.e. Risk Taking Propensity Business Performance) reveals a t-statistics of 9.19, which meets the cut-off of 1.96. The significant beta coefficient of 0.48 proves the significant impact of the risk taking propensity on firm's performance. R Square index (i.e. 0.23) of proposed model turns significant but low. The above analysis support hypothesis 1 i.e. *risk taking propensity significantly impacts business performance.*

Though the study supports the positive relationship between the risk taking propensity and business performance, yet such a descriptive knowledge cannot be considered sufficient to refine one's understanding about functional relationship between variables under investigation. To investigate the nature and strength of risk taking propensity – business performance relationship in different environmental context, the moderation analysis (through interaction technique) has been applied to the descriptive model of risk taking propensity – business performance relationship (Baron & Kenny, 1986; Hayduk, 1987; Bollen, 1989; Bagozzi, Yi & Phillips, 1991; Vij & Bedi, 2015).

To see how the nature and strength of the prescribed relationship of risk taking propensity and business performance change as a function of environmental uncertainties, the moderator i.e. environmental uncertainties and the interaction term i.e. product of the variable that is being moderated and the variable that is moderating (environmental uncertainties x risk taking propensity) have been added to the structural model (refer Figure 3). The standardized score of the construct of

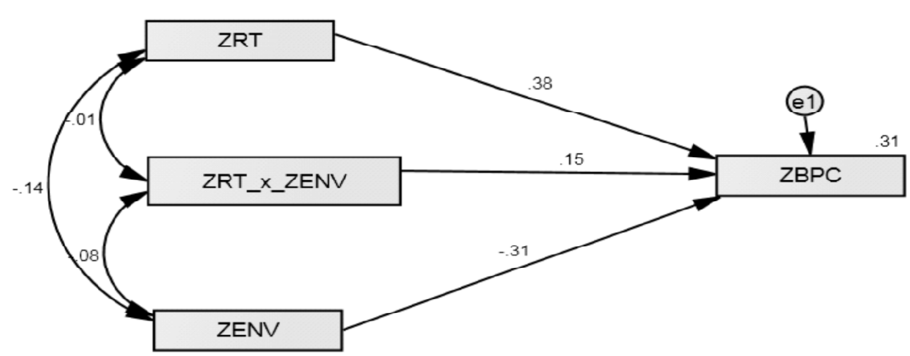


**Figure 3: Structural model of the interaction effect of Environmental Uncertainties and Risk Taking Propensity on the Business Performance**

Where ZRT = Risk Taking Propensity(Standardized), ZENV= Environmental Uncertainties (Standardized), ZBPC= Business Performance (Standardized), ZRT_x_ZENV= Interaction term risk taking, environmental uncertainties and business performance have been considered for the testing of moderation effect.

The result of moderation analysis produces a beta coefficient of 0.15 and t-statistic of 3.960 for the interaction effect of risk taking propensity and environmental uncertainties. These indices are significant at 1 percent level of significance. The significant beta coefficient of interaction term suggests the moderation effect of environmental uncertainties on risk taking propensity – business performance relationship but it does not elaborate the nature of moderation effect sufficiently. To better portray the moderating effect of environmental uncertainties on risk taking propensity - business performance relationship, a scatter plot has been plotted by regressing business performance on risk taking propensity at high and low scores of moderating variable (refer Figure 4).

Figure 4 reveals that the slop of regression fit lines, predicting business performance from low and high scores of risk taking propensity differ in different environmental context. The regression fit lines indicate that in stable business environment risk taking propensity abysmally influences business performance ($R^2$ Linear = 0.090). There is a considerable degree of correlation between risk taking propensity and business performance for dynamic environmental conditions ($R^2$ Linear = 0.268). Hence, study supports the hypothesis 2 i.e. *environmental uncertainties moderates risk taking propensity – business performance relationship.*

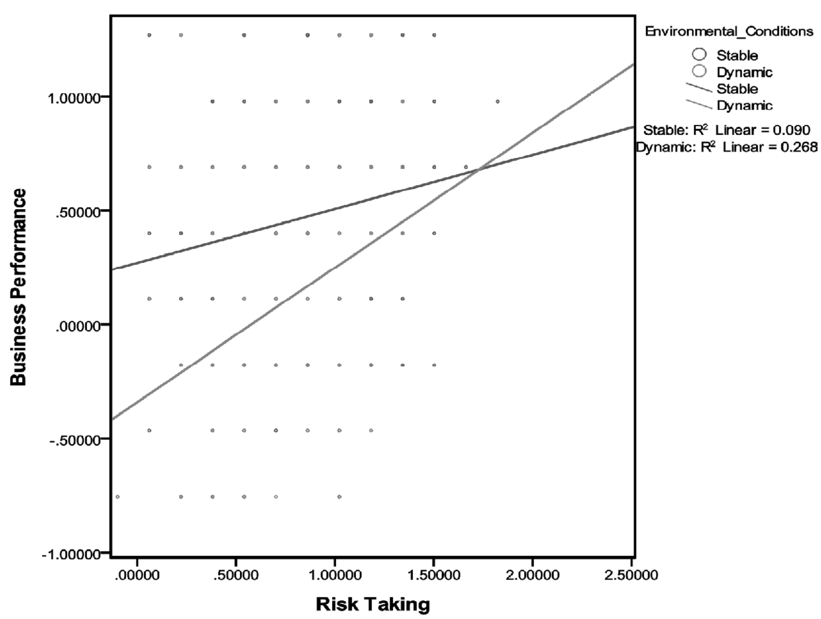


**Figure 4: Moderating impact of Environmental Uncertainties on Risk Taking Propensity – Business Performance Relationship**

## DISCUSSION AND IMPLICATIONS

The findings of the study have important implications for entrepreneurs and academicians. The significant and positive relationship between risk taking propensity and business performance highlights the importance of risk taking propensity for the survival and success of a firm. Study implies that an entrepreneurial posture, which promotes risk taking propensity could be financially worthwhile and might be a source of sustainable growth.

The study suggests that environmental uncertainties moderate risk taking propensity - business performance relationship. Organizations operating in dynamic environment are likely to be benefited more from risk taking propensity than firms operating in stable environment. In dynamic environment, where conditions change rapidly and opportunities emerge on continuous basis, organizations which take business related chance, venture into the unknown, actively seek new opportunities, and devote significant amount of resources on the name of uncertainties, are more likely to gain over their rivals.

Findings of the present study are in line with literature (e.g. Covin & Slevin, 1989; Lumpkin & Dess, 1996; Kreiser *et al.,* 2002; Kreiser & Davis, 2010) and encourage organizational members to venture into unknown and commit a significant amount of resources in the name of uncertainty, newness and novelty (Damanpour, 1991). By venturing into the unknown new projects, an entrepreneurial firm, if successful, can fuel its growth and might achieve a dominant position in the market. Risk taking propensity equips entrepreneurial firms with the ability to act quickly on emerging opportunities and lay foundation for innovation, novelty and creativity (e.g. Nelson, 1997; Teece, Pisano & Shuen, 1997). Study implies that the willingness of firm's top management to take business related chance and to accept occasional failures actually encourages organizational members to think innovatively and go beyond tried and tested. An organizational culture, where human resource policy and reward systems generally embrace success while not personalizing failure on name of innovations, indeed reflects the true risk taking propensity of a firm.

Study contributes to literature by refining the firm level inventory of risk taking propensity. Study extends the literature on risk taking propensity - business performance relationship by producing empirical evidence from emerging economy like India on the given relationship. Study contributes to the scholarly conversation about contextual nature of risk taking propensity - business performance relationship and provides valuable insight regarding the moderating role of environmental uncertainties in the given relationship. The pursuit of risky alternatives depends not only on the processes through which strategic decisions are made in organizations', but also on the environmental context in which an organization operates.

The study is cross-sectional in nature and gives a static picture of the risk taking propensity – business performance relationship. The findings of the study are based on a heterogeneous sample of 457 Indian organizations. It is quite possible that risk taking propensity - business performance relationship varies from sector to sector and by restricting the scope of the study to a particular sector, more specific inferences can be drawn. Future researchers may restrict their study to a specific industry to generate industry specific insight. The cross comparison of two or more industries could be another area of investigation. Future research may study the moderating or mediating role of other organizational variables such as: structure, size, and age etc to batter portray risk taking propensity - business performance relationship.

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**Annexure I**
**Scale items and psychometric properties of the various constructs of interest**

| *Construct* | *Scale Items* | *Item Code* | *SFL* | *AVE* | *CR* |
|---|---|---|---|---|---|
| Risk Taking | ***In general, the top managers of my business unit.....*** Have a strong inclination for high risk projects (with chances of very high returns). | RT_1 | .83 | .68 | .91 |
| | Believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives. | RT_2 | .90 | | |
| | Typically adopts a 'Bold and Aggressive Posture', in order to maximize the probability of exploiting potential opportunities. | RT_3 | .86 | | |
| | Implement plans only if they are very certain that these will work. (Reverse Coded) | RT_4 | .85 | | |
| | Recognize and reward the risk takers, whether they are successful or not. | RT_5 | .67 | | |
| Environmental Uncertainties | ***In general,*** Our business unit needs to change its marketing practices extremely frequently (e.g., semi-annually). | EN_1 | .83 | .65 | .93 |
| | The rate of products/ services obsolescence is very high. | EN_2 | .57 | | |
| | Actions of competitors are unpredictable. | EN_3 | .88 | | |
| | Demand and tastes are almost unpredictable. | EN_4 | .88 | | |
| | The modes of production/service change often and in a major way. | EN_5 | .89 | | |
| | ***The external environment of my business unit....*** Very risky, one false step can mean my business unit's undoing. | EN_6 | .85 | | |
| | Very stressful, challenging, hostile; very hard to keep afloat. | EN_7 | .89 | | |
| | A dominating environment in which my business unit's initiatives count for very little against the tremendous political, technological or competitive forces. | EN_8 | .60 | | |
| Business Performance | **Compared to** the **major competitor's** our business unit have..... .....higher sales growth | PRC_1 | .91 | .82 | .94 |
| | .....higher market share | PRC_2 | .89 | | |
| | .....higher return on investment | PRC_3 | .92 | | |