DETERMINANTS OF INTEGRATED RISK MANAGEMENT PROCESS IN SMEs- A CONCEPTUAL MODEL

First Author & Corresponding Author

Prameela Singu

Research Scholar, Mittal School of Business

Lovely Professional University, Phagwara, Punjab, India

Second Author

Dr. Hari Babu Singu

Associate Professor

Symbiosis Institute of Business Management, Nagpur

Symbiosis International (Deemed) University, India

Third Author

Dr. Babli Dhiman

Professor, Mittal School of Business

Lovely Professional University, Phagwara, Punjab, India.

Purpose: - The study is intended to develop a conceptual model of an integrated risk management process in SMEs and how integrated risk management processes linked to firm performance. The study proposes a integrated risk management process and factors influencing the implemention of a risk management process in SME.

Design/methodology/approach

The review of past studies were based on the indexed journals related to specialization in risk management and firm performance. Online Search engines such as EBSCO, ProQuest, Wiley Journals and Emerald Insight were used to retrieve the research studies related to risk management and firm performance. Adopting the structural review model proposed by Transfield et.al (2013), the research manuscripts were explored using the key words namely, “Risk management”, “Managing risk”, Integrated risk management process” and “Firm Performance”.

Findings – Integrated risk management practices minimizes the costs associated with business operations and increase efficacies embedded with the competitive advantage and enhanced performance. Integrated risk management practices reduce costs associated with business operations and facilitate competitive advantage and superior performance. The associtiion between risk management practices and firm performance is much needed in the small businesses context that are extensively influenced by firm internal, external and entrepreneurial factors.

Research limitations/implications- The model proposed is based on theoretical perspective that requires empirically validation by exploring the ietms for each stage in the process. Future research must empirically validate: To what extent these risk management processes suggested can be flexible to implement in the SME context? What are the significant factors that influence the firm's risk management descisions?

Practical implications- The risk management process/model suggested assist the managers and practitioners in the implementation of risk management pratices that enhances firm performance. Managers will be able to see what factors are highly influencing the risk management decisions of the firm.

Originality/value – The proposed conceptual model can advance the theoretical base of the integrated risk management process. The study contributes to risk management and firm performance literature.

Keywords- Risk management, Managing risk, Integrated risk management, enterprise risk management, firm performance, SME.

JEL CLassfication: M10, M13, M14

1. Introduction

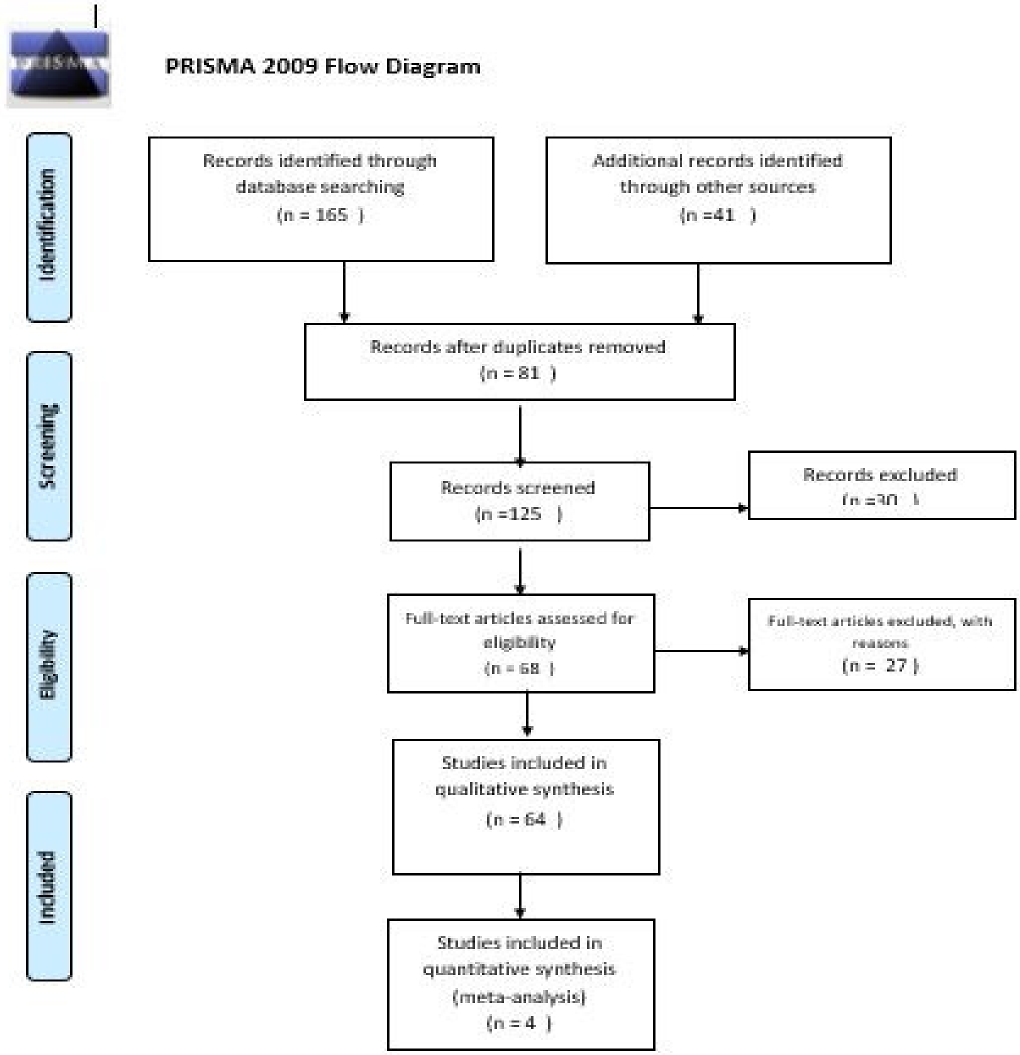
Studies have widely examined the dynamic and competitive nature of the business environment. The complexity in the nature of risks in terms of volume and pace at which they occur poses to reduce productivity and increase the cost of liabilities of businesses (Hillson, 2016; Miller, 1992; Naude & Chiweshe, 2017). Managing these challenges in businesses, the business entities need to make a serious assessment of the risk management approaches to identify and mitigate the potential risks that affect strategic success significantly (Erkoyuncu et al., 2015). Risk coordinators reveal that an integrated approach will bring a flip to the business by reducing strategic and operational gaps (Crovini et al., 2020; Hillson, 2006). Although risk management is perceived to be an opportunity by many researchers and practitioners, more often it is seen as an obligation in the SME context (Testorelli et al., 2020). On the other hand, carrying out risk management practices relies on the attitude of the entrepreneur, qualification level and environmental conditions prevailing in the economy (Britzelmaier et al., 2015; Mauchi et al., 2021). Previous studies have widely examined the perception of risk (Falkner & Hiebl, 2015; Grant et al., 2014; McFadzean et al., 2007), risk management practices (Chan et al., 2018; Djan & Zehou, 2017; Henschel & Durst, 2016), risk management capabilities (Carcary, 2012; Silva et al., 2013), drivers of risk management implementation and failures aroused (Hudin & Hamid, 2014; Mutwiri, 2017). Since, considering the dynamic and challenging business environments, there is a need to analyze various steps proposed by the researchers, practitioners and suggesting an integrated risk management process. The present study has both the managerial and policy implications that provide the framework for successful implementation of risk management process in SMEs context. The present study is the comprehensive presentation of the dimensions of integrated risk management process, determinants for implementing an integrated risk management process which is a missing link in the past studies. Further, the present study highlights how integrated risk management leads to better performance of SME. Therefore, the objective of this study is to propose a conceptual model of an integrated risk management process, and highlight how it leads to firm performance. The proposed model is based on a comprehensive review of the literature. Propositions were developed for each concept to know as to what extent suggested dimensions measure and reflect the process of risk management and determinants of integrated risk management process. The paper is organized as follows, research methodology is presented followed by theoretical background and propositions development in which the dimensions are discussed. The paper ends with discussion and conclusion.

2. Research Methodology

The present study adopted a structural literature review (SLR) model developed by Transfield et.al (2013) for conducting the systematic review in social studies. The systematic review process is divided into three sub processes.

The first step: planning the review- this section is concerned with the development of review motivation and development of research question. **The second step**: Manuscripts published in journals listed in electronic databases and indexed with Scopus, Thomson Reuters, ProQuest, EBSCO and specialized in risk management, firm performance and determinants of risk management practices are included. Grey literature such as unpublished thesis, conference proceeding, working paper series and work-in-progress are excluded. The review process included the studies from 2000 to 2021. The authors decided to examine the literature from the seminal field from integrated risk management practices in SME context across the globe. The screening process of literature review presented using PRISMA model by eliminating the paper which not relevant for the study by using check list. Keywords used:" Risk management" OR"Manage risk", "Types of risk" AND "SME", "Risk management process" OR "Risk management methods", "Risk assessment " AND " SME".

Third step: Disseminating the Literature review: This section is dedicated to disseminate the literature review.



Source: Extracted from PRISMA Statement.

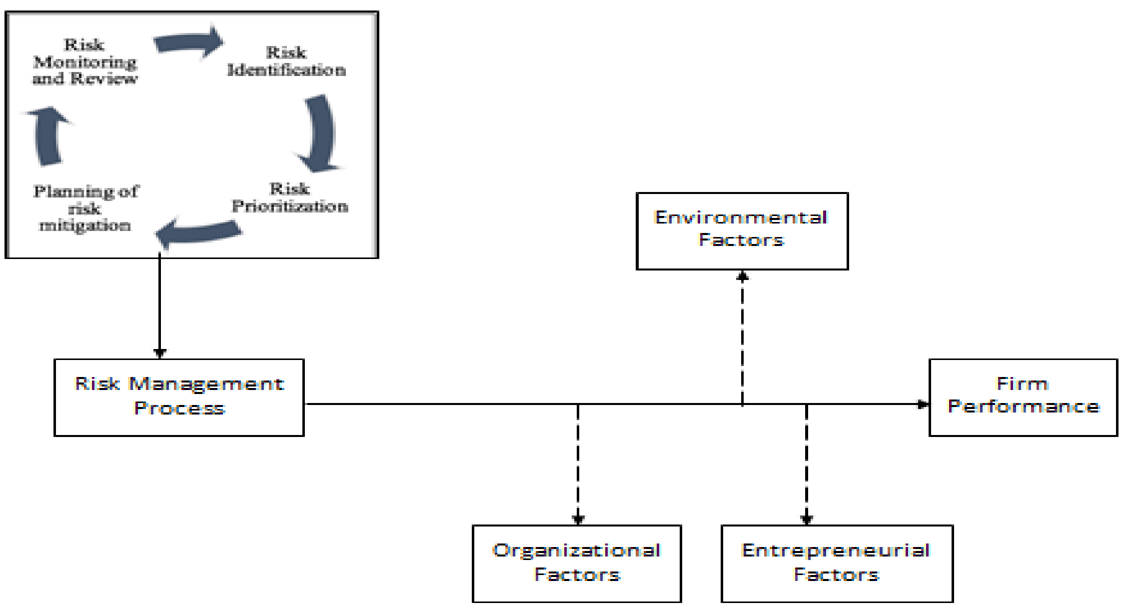
3. Theatrical anchoring

According to the ISO 31000 (2009) / ISO Guide, 73:2002 , *"risk is an 'effect of uncertainty on objectives"*. In a dynamic business environment, the perception towards risk has a paradigm shift from minimizing adverse effects of risk to exploiting better opportunities from the risk and it may lead to maximizing shareholders' value. Indeed, managing risk conceptualizes to identify, assess and mitigate the risks at an acceptable level and it also ensures to achieve the firm's strategic objectives (Abotsi et al., 2014). The holistic view of risk in organization levels termed through the development of the ERM process for SME.

"*Entrepreneurs are familiar with their businesses, they are unlikely to be able to identify all related risks; a strong ERM approach may help them identify, assess and monitor risks, raise their risk* *awareness and facilitate them in better understanding and adjusting to the prevailing environment opens windows for the opportunity"* (Brustbauer, 2016)

Managing risk at an acceptable level refers to be the key factor that influences organization actions and firm performances (Henschel, 2008). SME's has a different view of risk, applies a comprehensive risk assessment (Henschel & Durst, 2016). These comprehensive nature of risk may vary with the way industry treats and analyze risky decisions (Leopoulos et al., 2006). There are various factors that influence firm integrated risk management practices including organization risk management philosophy, risk management culture, management support, ownership structure and flexibility of risk management process (Brustbauer, 2016; Henschel & Durst, 2016; Silva et al., 2013). Abotsi et al. (2014) define that risk management process implementation and decision in SME's is solely in the hands of SME owner and his abilities to asses and openness to involve employees ideas to manage risk has significant impact on risk management actions and firm performance of SME's (Henschel & Durst, 2016).

Figure -1: Conceptual Model



Source: Authors' compilation

3.1. Firm Performance

The measurement and operationalization of firm performance suffer from limited conceptualization and lack of proper evidence for identifying context-specific items (Santos & Brito, 2012). The conceptualization of performance is still debatable in academic research and lack of attainable definition.

Existing studies found complexity to operationalize the firm performance construct as there is no consensus to define performance measurement. Indeed the classification of performance measures shifted its paradigm changes from accounting-based financial measures to both financial and non-financial measures (Santos & Brito, 2012; Farooq, 2014). In the small business context, numerous studies have suggested that non-accounting/operational measures will enhance the validity and generalization of the results (Mamai & Yinghua, 2017; Venkatraman & Ramanujam, 1986). Small firms are *'notorious for their inability and unwillingness to provide desired information' and* reluctant to share objective measures of their companies and these reports are not published in any wear (Covin & Slevin, 1989). Even though if companies are willing to share such data of small firms are difficult to interpret. Cooper (1979) opines that operating losses or low profits of growth-oriented small firms may not be an indication of poor performance, and the reason for this apparent poor performance is due to heavy investment in new product development, new markets entry and implementing new technology in the production process.

Moreover, comparing the performance of companies based on the financial data lead to biased results due to the nature and size of companies, further affected by the industry related factors as well (Miller and Toulouse, 1986).

3.1.1. Dimensions of Firm Performance

There is no clear explanation to define dimensions of firm performance in SMEs. The traditional approach to measuring firm performance has considered profitability as a dimension and achieved through measuring firm return on investment. However, many researchers have raised the validity issues of return on investment as a sole indicator of firm performance and objected that firm short-term profits can be enhanced at the expense of long-term growth (Kroeger, 2007). Therefore, it is important for the organization to consider performance as a multi-dimensional point of view. Previous studies suggest to include financial and operational measures along with the subjective measures to assess the performance of companies. The summary of review of past studies is shown in table -2. Furthermore, the previous studies argued that the performance measurement can be achieved in two ways. First, by collecting published financial data with secondary sources, evaluating the performance using quantitative analytical techniques or by collecting the absolute values of performance from the owners of company. Second, performance can be evaluated subjectively by asking respondents and, researchers may request the performance of their firm compared to the competitors or with industry average or previous performance of the company. Kantur (2016) opines that the use of subjective measures was justified with the non-availability of objective data for measuring firm operational measures. Using only objective measures may diminish the validity of conclusions and considering only objective measures may diminish the validity of the results in Small business studies. According to Yang, Ishtiaq, and Anwar (2018), the majority of the studies explores the link between risk management practices and firm performance by measuring the performance using subjective responses collected from the elite group. Covin and Slevin (1989), suggest that subjective measures are a better source than collecting objective absolute measures from small business owners since the responses are virtually biased at the business level due to maintain secrecy (Venkatraman & Ramanujam, 1986).

Firm performance in academic literature is often debated on subjective and objective measures. Previous studies suggested the application of subjective measures including both the financial and non-financial measures such sales returns, growth in sales, enhanced product and services portfolio, return on assets, customer satisfaction and employee satisfaction (Yang *et al.*, 2018). (Lukianchuk, 2015) suggests that subjective measures will explain the overall picture of firm performance than measuring accounting data viz. ROI or ROA in the risk management context. However, the selection of performance measures should also be linked with the target respondent, if target respondent is the SME Owner or CEO of the company using subjective measures will be better criteria to measure the performance of SME. (Covin & Slevin, 1989; Venkatraman & Ramanujam, 1986).

3.2.Risk management process in SME's

Risk management is valuable when it is approached in a proactive manner by integrating with firm objectives, goals, and values. According to the risk management standards of enterprise risk management is evolving process,

> *"effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives. (Committee of Sponsoring Organizations of the Treadway Commission"*(*2017 Enterprise Risk Management – Integrated Framework*, 2017)

The aim of a holistic risk management framework is to identify, assess, prioritize and monitor all threats and opportunities facing by the firm (Brustbauer, 2016). The holistic view of risk management "can create a significant strategic advantage by bridging the strategy/tactics gap, and dealing with threats and opportunities, to enable both successful project delivery and increased realization of business benefits"(Hillson, 2006). Greater transparency, increase knowledge of risk awareness, control risk environment, operating risk within appetite level are the generic objectives of risk management and it may vary by company size, industry type and organizational environment ((Smit, 2012). It ensures that risk is managed with complete knowledge with a clear understanding to achieve the desired objectives of the firm (Raghavan, 2005).

3.2.1. Identification of all risk

Risk is defined as the probability of an event and its consequences. Identification of risk is defined as *"the process of determining risks that could potentially prevent the program, enterprise, or investment from achieving its objectives"* (Nocco & Stulz, 2006). Raghavan (2005) opines that identification of risk should be accurate when it is connected with employees or employers, where the specific domain knowledge resides. The identification of risk relies upon answers to these questions such as, What adverse effects can prevent the organization from achieving its business goals? And what are the major sources of disturbances/events that can threaten to achieve business objectives? (Tchankova, 2002)

The studies have explored different models to identify risk viz. Exploring risk determinants as risk indicators and disturbances in business (Islam & Tedford, 2012). Identifying sources of a risk considering the frequency of occurrence and magnitude of risk if occurs (Alrashidi & Baakeel, 2012; Ariful et al., 2006; Djan & Zehou, 2017; Tchankova, 2002). (Tchankova, 2002) experimented with a frame-based approach to risk identification in small and medium enterprises.

Identification of risk is base for firm future actions to control risk. Thus, the techniques used to identify risk in an organization have a significant impact to enhance organizational success in the future. The most frequently used techniques are the previous experience of management, brainstorming, SWOT analysis, flowchart and checklist(Gorzeń-Mitka, 2013; Rostami, 2016; Smit, 2012). The literature suggests that the efficacy of risk management relies on appropriate risk identification measures to overcome non-manageable challenges that occur (Gorzeń-Mitka, 2013; Tchankova, 2002). Therefore, following research proposition was framed:

P1. Accuracy in risk identification is positively related to risk management effectiveness.

3.2.2. Prioritization of risk

Prioritization of risk is the extent to which all risks are assessed by their nature using both quantitative and qualitative analysis. Finding the level of each risk is much important factor and that should be analyzed accurately. As noted by (Torabi et al., 2016). Risk management practitioners in the field of ERM are analyzed or evaluated into three perspectives. First, "effect of uncertainty on objectives", second "it has a positive or negative effect on objectives" and third "Uncertainty that matters". These dimensions propose a quantification of risk in both objective and subjective ways. Risk assessment includes *"Estimating the probability of occurrence and severity of impact for each identified risk and prioritizing risks for further attention, grouping risks into categories to identify hotspots of risk exposure or common causes, and analyzing the combined effect of risks on objectives using statistical models"* (Hillson, 2006).

Risk assessment = Probability or likelihood of occurrence* Consequences of risk

"(Probability of occurrence can also be defined as the likelihood of occurrence) and frequency factor as f = N/t (where N is the number of similar events, which have happened during the time period t) to estimate the frequency of hazards/threats in the industrial environment. Further, the consequence of risk is defined as the ''results/outcomes of a risk that will have an impact on the organization's goals" (Torabi et al., 2016)

$$Risk\ Score = F*L*S$$

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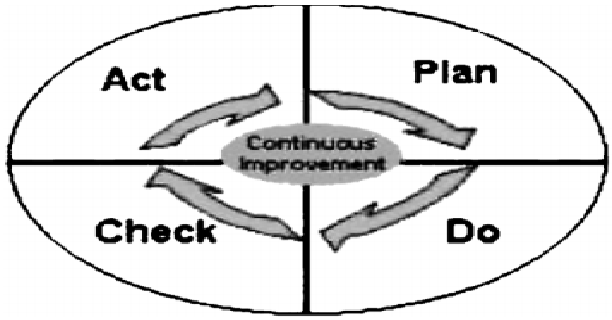
Recent studies have used ranking methods to asses relevant risk by conducting qualitative analysis apart from the quantitative analysis by exploring the cause and effects (Henschel, 2008; Henschel & Durst, 2016; Islam & Tedford, 2012). Methods of risk assessment have been widely used by SME's including cash flow at risk analysis, SWOT analysis, Scenario planning, Brainstorming, sensitivity analysis and risk portfolios, decision tree analysis and risk mapping (Britzelmaier et al., 2015; Gorzeń-Mitka, 2013; Jansone & Voronova, 2013; Scandizzo, 2005). The selection of risk assessment technique varies according to the complexity of the problem, amount of information available to asses, available resources in terms of time and human resource, the proximity of risk, connectivity of risk with other objectives (Valis & Koucky, 2009). Hence, the literature suggests that a holistic risk assessment approach enhances risk management effectiveness used by SMEs. Therefore, the following research proposition was framed.

P2. The holistic risk assessment approach is positively related to risk management effectiveness of the firm.

3.2.3. Planning and Implementing risk mitigation strategies

Planning risk responses is a process of responding to each individual risk and to the overall risk exposure. (Raghavan, 2005) explains that what can be measured in business can also be managed. However, it could clearly justify the purpose of risk mitigation efforts and it is a primary task than capital allocation against to manage risk management systems. In general risk mitigation strategies involves, risk avoidance: risk is elimination, risk transference: liability for the risk is transferred, risk mitigation, risk acceptance: the likelihood and/or severity associated with the risk is low enough that no action is taken. Implementing risk responses, assessing risk changes and defining risk residuals is continues process of risk assessment to continuous process of improvement.



Source: Labodova (2004)

The selection of risk mitigation strategies and implementation of planned responses is influenced by the SME owner risk appetite, level of education and size of the firm (Mamai & Yinghua, 2016). Literature in the field of risk mitigation has focused on supply chain risk, financial risk in detail (de Souza et al., 2009; Faisal et al., 2007; Harland et al., 2003; Park et al., 2016). There is a dearth of studies which have explored the risk mitigation strategies in firm continuity management model, risk reduction model, risk enhancement perspective and explains risk mitigation strategies practiced by the firms viz. collaboration, diversification, insurance, building of relationship with suppliers, transparency with employees (Kagwathi et al., 2014; Mamai & Yinghua, 2016; Sunjka & Emwanu, 2015). Mitigation of risk by implementing planned responses is essential to the function of the risk management process: it may vary with the type of industry, firm knowledge-intensive, entrepreneur education, and operating markets. However, recent studies have proposed that holistic or integrated process of risk identification and treatment strategies will enhance the applicability and control over risk in enterprise (Henschel, 2009; Henschel & Durst, 2016; Yang et al., 2018). Therefore, below research proposition framed,

P3. Risk mitigation strategies are positively related to risk management effectiveness.

3.2.4. Risk monitoring and review

Risk monitoring and review is a process of assessing the effectiveness of treatment measures implemented to reduce the risk exposure (Britzelmaier et al., 2015). The effectiveness of the risk management process is assessed through monitoring the risk exposure of the risk event. In a dynamic business and risk environment, the status of risk event occurrence and its intensity attributes with probabilities and consequences. It is pertinent to examine the effect of the risk event on the horizontal and vertical integration of the business model and reassess the risk assessment procedures(Hallikas et al., 2004).

3.3. Risk Management and firm performance

The key to success for SMEs relies on reacting to the risks proactively and accepting the risks as an opportunity for organic growth for business (Brustbauer, 2016). Numerous empirical studies have studied the relationship between risk management and performance of SME (Britzelmaier et al., 2015; Henschel, 2009; Lukianchuk, 2015). Risk management is critical to organizational survival and success. If organizations are managed to encourage a holistic view of risk management that can lead to firm long – term survival, firm value creation and sustainable competitive advantage(Brustbauer, 2016; Yang et al., 2018).Integrated risk management requires good organizational culture, support from the top management which eventually enhances the SME performance (Yang et al., 2018). ERM reduces different types of the cost related to operation, material, and supply, which in turn leads to the production of products and services at lower cost; thus, the firm can gain competitive advantage (Yang et al., 2018). ERM practices will positively reduce the different types of risk exposure to firm (Florio & Leoni, 2017).

The organizations which are having a holistic view of risk, i.e. who are able to identify, assess, mitigate and report risk management process integrated way will have a great influence on firm strategic orientation and it leads to the enhanced performance of the firm. Managers who have an opportunist view of risk management are more likely to develop firm risk management implementation in integrated risk management process in a firm. *"Without this integration, risk management would only remain mere 'empty talk' and of no value for the firm. The employees would not see its benefit; they would only think of it as an addition to their workload"* (Henschel, 2010). Hence, the following hypotheses were formulated:

P5. The integrated risk management process is positively related to firm performance.

3.3.1.. Factors influencing the relationship between risk management practices and firm performance

a) Entrepreneurial factors

Evidences from the past studies states that, entrepreneur's personal interpretation and evaluation of risks, risk-taking behavior of SME Owner are relevant for risk management activity (Brustbauer, 2016; Henschel, 2006; Henschel & Gao, 2010; Kozubíková et al., 2015; Yang et al., 2018). Subsequently, the attitude towards risk assessment significantly differs between SMEs and large enterprises in terms of the approaches they do-follow. As risk assessment in SMEs is considered a holistic approach rather than concentrating on specific risk, complex mathematical solutions to monitor the effect of specific risk can be ignored (Henschel, 2006). SME Owner's deeper knowledge about their business and managerial competencies helps them to perceive risk more critically and helps them to make informed decisions(Gilmore et al., 2004). Consonance to the findings of Gilmore et.al (2004), a higher level of education, the age of the firm positively influences to adopt appropriate risk mitigation strategies (Belás et al., 2015; Kim & Vonortas, 2014). Literature highlights that SMEs which are highly controlled by the SME Owner show a smaller application of risk assessment techniques (Brustbauer, 2016; Henschel & Durst, 2016).

b) Organizational factors

Every enterprise, be a small or medium, has its own objectives and goals to achieve. (Freiling, 2008) proposes that risk management is a function of entrepreneurial activity and it allows a business enterprise to innovate, exploit external opportunities and protect the business from competitor actions. Functions of risk management have envisaged relation with business planning, top management support and knowledge towards risk management (Henschel, 2006, 2009). The business planning system is the prerequisite for implementing a systematic risk management system for SMEs (Henschel, 2006). SMEs that use planning effectively has a higher preference for taking a risk and higher levels of growth in terms of sales and employee growth(Carland et al., 1989). (Brustbauer, 2016) study the prerequisites to implement an integrated risk management system in SMEs such as ownership structure, firm size, and sector. The study concluded that the active risk management approach supports SMEs in seeking strategic advantage, enhance the competitiveness and success of the enterprise. (Abotsi et al., 2014), explains factors influencing risk management decision viz. firm culture, communication, IT usage, employee training and highlighted the role of organization structure and top management support. organizational structure (Britzelmaier et al., 2015), Ownership structure (Brustbauer, 2016), legal and regulatory requirements (Henschel, 2008), the firm internal control mechanism (Silva et al., 2013), Risk exposure (Van Wyk et al., 2004). Cost of Investment, employee know-how and a risk management model being acceptable for SMEs must get along without any additional investment cost and be linked to the existing information technology. There is much discussion about firm risk management practices but how these practices vary across industries is untapped and unexplored both theoretically and empirically.

c) Environmental factors

In a dynamic business environment where profits are derived from trading in the markets, is it a small or large company one can no longer afford to avoid risk in their business. As quoted in (Elahi, 2013), “Dynamism can be described as the environmental change which is difficult to predict”. The companies that are practicing proactive identification and management of risk show a higher propensity to convert these dynamic challenges into opportunities of a company (Brustbauer, 2016; Elahi, 2013; Falkner & Hiebl, 2015). According to (Brustbauer, 2016), “thinking about firm-related risks not only makes small business entrepreneurs more aware of potential risks but also opens windows for the opportunity”. Institute of risk management defines that a firm external environment evaluates the firm strategic alignment of an organization’s risk management and its external operating environment (IRM, 2002).

4. Discussion and conclusion

The present study adds to the existing body of knowledge by proposing a conceptual model of an integrated risk management process. The study is unique in nature as it has proposed determinants of integrated risk management process in the context of small and medium enterprises. The present model explained, how firm risk management system is associated with firm performance inaddition to exploring the determinants of risk management system of the firm. It provides value addition to the firms to take proactive decisions to gain competitive advantage. The study also assist us to understand the how "proactive risk management facilitates the achievement of the company's objectives and enables it to better respond and adapt to the surprises and disruptions attributable to both its external and internal environment"(Bérard & Claveau, 2017). Silva et al. (2013), opines that investment in risk management will assist firm to be more efficient and effective to achieve competitive goals of the firm. Therefore, risk can be seen as more comprehensive and to be managed at an enterprise level(Gilmore et al., 2004; Henschel, 2010; Henschel & Gao, 2010). However, it has also been argued that SMEs might not be able to implement tools of risk management and dedicate time to discuss the process of risk management due to the scarcity of resources (Leopoulos et al., 2006). According to (Poba-Nzaou & Raymond, 2011), SMEs manage risk by using *"reactive, informal or apparently unstructured, intuitive and incremental approach"* and assessed the risk in terms of the business as a whole. This approach highlights that large companies need to learn from smaller companies too for active assessment at a firm level (Henschel & Gao, 2010).

The risk management process of SMEs must implement as a forward-looking rider with a practical approach to identify risk at present and *"looking at future risk"*. The process of risk management process need to be flexible, rapid and realistic. Risk management procedure effectiveness increase with commitment by the top management, communication with employees, usage of information technology and organization structure, trust of employees (Abotsi et al., 2014). Increased knowledge of risks and opportunities will enhance the assessment of the firm's environment thus, permitting strategic opportunities to exploit.

5. Managerial Implications for research

Organizations are inclined towards profit earning. To achieve better performances, irrespective of the size of business, small, medium or large strive to gain a competitive position in the marketplace. To analyze competitive markets top management should focus on connecting organizational overall risk management with firm strategic decisions. Small firms in particular, due to the limited intellectual, financial resources, and limited information capabilities, assess the risk in a much judgmental manner and considers the firm as an entity for assessing the severity of risk. Since SMEs are smaller in size, all the functions are managed by owners with few managers, risk mitigation strategies are to be perceived as an action to secure their future proactively (Raghavan, 2005). Inadequate risk mitigation strategies can affect day-to-day operations of the firm, decrease firm revenues and increase expenses, an impact it may direct to serious business fail (Kagwathi et al., 2014). In this regard, the conceptual model developed to asses integrated risk management process can be very useful especially to small business owners who wish to manage risk in proactively.The risk process included in the study will help small business owners to foster accompany innovation and strategic development by elevating blind spots and areas of under investment that threaten the company's future. KPMG conducted a survey on the importance of risk management and opines "Marrying innovation and risk management can also help companies pursue opportunities" (*Managing Risks in a New World - KPMG Singapore*, n.d.)

G. Limitations and future research directions

The study is based on the review of the literature and the model proposed is elementary in nature: it requires empirical validation. Further, the conceptual model explains the risk management process and it does not include types of risk faced by the firm, in this regard the proposed model may vary according to the high intensive risk faced by firms. The influencing factors suggested, should be operationalized, according to different environmental conditions. Moreover, future studies should also identify how integrated risk management practices differ across different types of industries. The researcher has explored major potential gaps from the systematic review conducted from the academic literature. Below mentioned table has highlighted few of the gaps and suggested for future research.

(i) Lack of definition clarity for defining risk management process: There is no reservation that the research related to risk management system, process has seen more emphasis over the past decade. However, the concept of risk management is still limited to work upon threat management only in academic research. According to Hillson, (2006) the process of risk management definition must concern with opportunity dimension as well. Therefore the future researchers need to develop some common ground in defining risk management process.

S.No	Major gaps identified	Reference
1	Lack of definition clarity	(Hillson, 2006, 2016; Van Wyk et al., 2004)
2	Availability of valid and reliable measures to understand firm risk management practices	(Brustbauer, 2016; Elahi, 2013; Smallman, 1996; Smit, 2012)
3	The dearth of empirical studies on measuring the role of SME's owner involvement in risk management process	(Abotsi et al., 2014; Bérard & Claveau, 2017; Brustbauer, 2016; Gilmore et al., 2004)
4	Lack of empirical studies on the relationship between risk management practices and performance of SME	(Agrawal, 2016; Bérard & Claveau, 2017; Lukianchuk, 2015; Tchankova, 2002; Van Wyk et al., 2004)

(ii) Availability of valid and reliable measures to understand firm risk management practices: One of the main reason for lack of conceptual and definition clarity regarding risk management process is due to the dearth of empirical research. Majority of the papers to examine firm risk management process is adopted a case study approach or theoretical in nature. Researcher has made some attempts to develop instruments to measure risk management process (Brustbauer, 2016; Henschel, 2010).

(iii) The dearth of empirical studies on measuring the role of SME's owner involvement in risk management process. The success or failure of the SME's is solely depending upon the owner of the business (Freiling, 2008; Smallman, 1996). The role of SME owner to understanding risk and risk management system can make change to organization to sustain in competitive environment (Agrawal, 2016; Elahi, 2013). However, all of these studies are explored the role of SME owner on examining risk management practices have analyzed theoretically and few of the studies used case study method needs much empirical evidence (Brustbauer, 2016).

Appendix

Table-1: Review of Past Studies of Risk Management Process

Construct	Process steps considered	Findings	Nature of study	Country	Source
Risk Management	Risk identification, Risk assessment, and Risk monitoring	The finding states that key success for SMEs is an awareness of firm related risk, being aware of the risk is prerequisite of risk management effectiveness.	Empirical	German	Brustbauer,2014
Risk Management	Risk identification, Risk assessment, Risk steering, Risk controlling	The findings demonstrate Systematic risk management and SME Performance has significant positive relation, However, SMEs till not recognized the benefits of systematic risk management.	Empirical qualitative	German	Britzelmaier et.al (2015)
Holistic risk management	Management behavior, Financial planning sophistication, Uncertainty external environment, personal factors	The author proposed a holistic risk management model that emphasis to connect how SMEs risk management practices link personal, behavioral, environmental factors	Empirical	Scottish, Chinese and German	Henschel and Susanne Durst, 2016
Risk Management	Management behavior, performance measurement, business planning, risk management process	The author proposed typology of a holistic risk management model that emphasizes connecting traditional risk management descriptions with interconnected firm-level model	Empirical	German	Henschel, 2010
Risk Management	Risk management: structure, strategy, culture.Risk perception	The findings state that firm proactive risk management enhance firm competitiveness and profits	Empirical qualitative	European communities	Clive Smallman, (1996)
Risk Management	Risk identification, Risk assessment, Risk monitoring, Risk culture, Risk management philosophy	The study proposed a unidimensional construct to measure firm risk management practices by adopting enterprise risk management perspective	Empirical	Pakistan	Yang et.al, 2018
Risk Management	Enterprise risk management framework: Risk identification, assessment, culture, Risk management objective	The study shows a significant positive relation with ERM and firm performance	Empirical	Danish	Johanna Sax Simon S. Torp, (2015)
Risk	Risk Identification, Risk Analysis,	Researchers emphasized importance of	Theoretical		Olajide Solomon

Management	Risk Evaluation, Risk treatment, Monitoring and review, Context analysis, communication consulting	integrated risk management process to enhance firm performance			Fadun, 2013
Risk Management	Risk identification	Risk assessment, Risk response and action planning	Empirical	Olajide Solomon Fadun	Smit, 2012
Risk Management	Context analysis, Risk Analysis, Risk treatment or handling, Monitoring and control	Findings explained risk management integration with functional departments, and this integration will enhance the performance of the firm	Theoretical	Italy	Adriana Brancia, 2011
Risk Management	Risk identification, Risk assessment, and Risk monitoring	The finding states that key success for SMEs is an awareness of firm related risk, being aware of the risk is prerequisite of risk management effectiveness.	Empirical	German	Brustbauer,2014
Risk Management	Risk identification, Risk assessment, Risk steering, Risk controlling	The findings demonstrate Systematic risk management and SME Performance has significant positive relation, However, SMEs till not recognized the benefits of systematic risk management.	Empirical qualitative	German	Britzelmaier et.al (2015)
Holistic risk management	Management behavior, Financial planning sophistication, Uncertainty external environment, personal factors	The author proposed a holistic risk management model that emphasis to connect how SMEs risk management practices link personal, behavioral, environmental factors	Empirical	Scottish, Chinese and German	Henschel and Susanne Durst, 2016
Risk Management	Management behavior, performance measurement, business planning, risk management process	The author proposed typology of a holistic risk management model that emphasizes connecting traditional risk management descriptions with interconnected firm-level model	Empirical	German	Henschel, 2010
Risk Management	Risk management: structure, strategy, culture.Risk perception	The findings state that firm proactive risk management enhance firm competitiveness and profits	Empirical qualitative	European communities	Clive Smallman, (1996)
Risk Management	Risk identification, Risk assessment, Risk monitoring, Risk	The study proposed a unidimensional construct to measure firm risk	Empirical	Pakistan	Yang et.al, 2018

	culture, Risk management philosophy	management practices by adopting enterprise risk management perspective			
Risk Management	Enterprise risk management framework: Risk identification, assessment, culture, Risk management objective	The study shows a significant positive relation with ERM and firm performance	Empirical	Danish	Johanna Sax Simon S. Torp, (2015)
Risk Management	Development of risk management plan, Risk identification, Qualitative analysis, Quantitative Analysis, Mitigation action plans, Followup and control	The author proposes " use of appropriate software tools may enhance project-related operations and reduce costs, especially when the user is an SME"	Empirical qualitative	Greece	V. N. LEOPOULOS et.al, 2006
Risk Management	Risk Identification, Risk Analysis, Risk Evaluation, Risk treatment, Monitoring and review, Context analysis, communication consulting	Researchers emphasized importance of integrated risk management process to enhance firm performance	Theoretical		Olajide Solomon Fadun, 2013
Risk Management	Risk identification	Risk assessment, Risk response and action planning	Empirical	Olajide Solomon Fadun	Smit, 2012
Risk Management	Context analysis, Risk Analysis, Risk treatment or handling, Monitoring and control	Findings explained risk management integration with functional departments, and this integration will enhance the performance of the firm	Theoretical	Italy	Adriana Brancia, 2011

Table-2: Review of Past Studies of Firm Performance

Construct	Perspective	Dimensions	Nature of study	Type of data	Findings	Source
Firm Performance	Financial Performance measures	Sales level, Sales growth rate, cash flow, return on shareholder equity, gross profit margin, net profit from operations, profit to sales ratio, return on investment, and ability to fund business	Empirical	Subjective measures	Subjective measures were used because collecting objective absolute measures from small business owners is virtually impossible to obtain at the business level.	Covin, J. G., & Slevin, D. P. (1989)

		growth from profits				
Firm Performance	Profit and growth perspective	return on sales, sales growth, creation of new products and service, return on assets	Empirical	Subjective measures	Subjective measures were used and considered because of sensitive nature of performance construct	Wolff, J. A., & Pett, T. L. (2006)
Firm Performance	Profitability perspective	Return on assets	Empirical	objective data	Mixed results were explored due to consideration of actual objective measures	Gul, S et.al, (2013)
Firm Performance	Profit and growth perspective	Return investment, return on sales,profit growth	Empirical	Subjective measures	Supply chain integration has a positive influence on firm performance	Handfield, R., Petersen, K., Cousins, P., & Lawson, B. (2009)
Firm Performance	Financial and non-financial measure	Sales growth, return on sales, return on assets, product quality, employee loyalty, employee satisfaction, customer satisfaction	Empirical	Subjective measures	The use of subjective measures was justified in strategic management justified due to unlikely to get objective data for non-financial measures. Using only objective measures may diminish the validity of conclusions	Kantur, D. (2016)
Firm Performance	Financial and non-financial measure	Sales growth, return on sales, return on assets, return on equity, product quality, employee loyalty, employee satisfaction, customer satisfaction	Empirical	Subjective measures	Enterprise risk management positively affects firm performance	Yang, S., Ishtiaq, M., & Anwar, M. (2018)
Firm Performance	Financial and non-financial measure	net profit, the total amount of sales, number of customers, product delivery and efficiency	Empirical	Subjective measures		Neneh, N. B., & Van Zyl, J. H. (2012)
Firm Performance	Financial and non-financial measure	Employee productivity, profit	Empirical	Tested with both objective and Subjective measures	Found the strong correlation between subjective and objective measures.	Wall, T. D et.al,(2004)

Firm Performance	Growth and profitability	profitability, growth, customer satisfaction, employee satisfaction, social performance, and environmental performance	Empirical	Subjective measures	Found the strong correlation between subjective and objective measures.	Santos, J. B., & Brito, L. A. L. (2012)
Firm Performance	Growth and profitability	Marketing effectiveness, growth, profitability, ROI, return on sales, return on assets and gross profit	Empirical	Subjective measures	Small firm performance is positively influenced by environmental uncertainty	Pelham, A. M. (1999)
Firm Performance	Profit and volatility	ROA, Cash flow volatility	Empirical	objective data	ERM has a positive influence on performance, objective measures were not measured the what intended to measure in detail about the context of independent variable	Lukianchuk(2015)
Firm Performance	Shareholder value	Returns to the shareholders,	Empirical	Subjective measures	The strategic connect from ICT, ORM has a positive influence on performance of SME	Bayaga, A., Flowerday, S., & Piderit, R. (2013)

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