

Evolving concepts of Risks and Risk Management

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Introduction:

Modern world debates extensively on risks. It is a universally accepted concept but still not understood in uniform format. There are several differences about how risks are understood-defined, appraised perceived, communicated, evaluated and managed

Risk research has shown that the basic understanding of risks differs within societies. Scientists differ in their understanding of risks and there are also different understandings of risks between lay people and academic scientific experts (Slovic, 2000).

The risk research is also criticized for its methodological pitfall. Should one take individual or group as unit of analysis for exploring the enquiry pertaining to risk? Recognizing that personal decisions reflect various processes for valuing current and emerging losses and gains and hence developing universal framework to identify and manage risks is still in early stage. Though large amount of research is available on risk perception and behavior there is less research available regarding peoples mind sets towards risk taking such as risk attitudes –namely propensity and aversion. Risk needs to be defined equally from probability/ expected values and from perspective of events/ uncertainties/consequences (Aven & Renn 2009).

History: Reaching to unknown future in advance and exploring uncertain world has been most desired dream of mankind. It was in 1654 mathematicians Pascal and Fermat of France gave theory of probability, In 1696 Lloyd's Coffey house in London started Lloyds list which gave shipping information regarding shipping from network of European correspondents. In 1713 law of large numbers was given by Bernoulli -Swiss Mathematician. In 1733 Moivre – French mathematician gave theory of normal distribution and standard deviation. In 1885 Neumann and Morgenstern gave theory of games. In 1952 Markowitz US economist introduced that risk and

expected return are related. In 1970 US academics Black and Scholes gave mathematical model to calculate value of option. (Bernstein , 2001)

Definitions of risk

There is no single definition of risk, Risk is uncertainty concerning the occurrence of a loss. Risk is danger of loss, Other definition is ‘any phenomenon which would affect one’s ability to meet objectives. Thus risk is very broadly defined in terms of uncertainty and its effect, and effect is further defined in terms of a “deviation from that expected.” Also, objective can be assumed to mean desired or expected result. Therefore, if objectives are planned desirable future states, conditions, or final outcomes in an organization or process, and if the achievement of these future desirable states using various mechanisms is uncertain, at least to a degree, then the final outcome(s) or future states may very well be a departure or deviation from the objective. The extent of the departure from the expected and how uncertainty can play into this is called risk. Luko, (2013)

Risk an opportunity as well as Threat:

Risk is defined as something happening that may have impact on the achievement of objective, it includes both opportunity and threat, NAO, (2000). It can be also defined as the combination of the probability of a event and its consequence. In all type of undertaking there is the potential for events and consequences that constituent opportunities for benefit (upside) or threats to success (downside) as per IRM,(2002)

Risk is used to express set of scenarios each having two dimensions probability and severity (Kaplan& Garrick 1981,1991) , it is combination of probability of event and consequences (ISO 2002) and more recently defined as equal to expected loss (Willis 2007). Hence it refers to uncertainty about and severity of the consequences (or outcomes) of an activity with respect to something that humans value. (Aven and Renn,2009)

Classification of risk

Objective risk is also called as degree of risk and defined as the relative variation of actual loss from expected loss. (Rejda, 2006).

Subjective risk is uncertainty based on ones mental condition or state of mind, the impact of which varies depending upon a individual. (Rejda, 2006).

The basic risk categories are Pure– situation in which there is possibility of loss or no loss, and speculative – situation where in there is possibility of loss or gain, Fundamental or systemic –risk that affects entire economy or large groups or individual in economy, Enterprise Risk- encompasses all risks a firm faces.

Existing risks are the ones which firms experience in the present context.

Emerging risks: Castellani (2010) tried to explore Industry responses to emergent risks. High frequency of large scale disasters (emerging Catastrophic or systemic risks) is due to interconnection between People, Markets, Networks and new technology development.

The construct –“Risk Perception”:

Perceived risk is the risk as it is perceived by the individual or by the public as aggregation of individuals. Risk perception is a misleading term. Being a mental construct, risks cannot be perceived like trees or apples, it is the active construction of the risk. According to Jungermann and Slovic (1993), individual risk perception is both, a function of individual cognitions and motivations as well as a function of the social, political, and cultural environment. Most of the empirical work on risk perception has been done dealing with the topic of how the public perceives risks of modern technologies.

Theories of Risk perception

Risk perception is the subjective judgment one makes about the characteristics and severity of risk

Several theories have been proposed to explain why different people make different estimates of risk. The three distinct theories have as follows

- 1 Psychology approach (heuristics and cognitive),
2. Anthropology/sociology approach (cultural theory) and
3. Interdisciplinary approach (social amplification of risk framework)

1 Psychometric Theory:

Psychologists Kahneman and Tversky conducted several experiments on gambling to find how probability is used by gamblers and found out that they use several heuristics (useful shortcuts) to evaluate information and to take decisions. These shortcuts not necessarily lead to accurate

judgments and may become cognitive biases. Psychometric Theory is based on Psychology behind processing of information. It initially posited that people use cognitive heuristics in sorting and simplifying information. This leads to comprehension bias. Psychometric theory identifies factors responsible for risk perception such as dread, newness, stigma, etc.

The theory concentrates on risk characteristics/dimensions such as catastrophic potential, controllability etc. however the theory cannot explain in detail the aspect of biases generated due to individuals dependency on heuristic devices (experience with risk). Another criticism here is the aggregation of data across several risks together cannot explain the psychometric dimension such as why people behave towards a single risk.(Sjoberg,1996). Another concern about the psychometric approach is that it tends to focus on characteristics of the risk rather than characteristics of the perceiver. Research within the psychometric paradigm turned to focus on the roles of affect, emotion, and stigma in influencing risk perception.

Slovic stated that perceived risk is quantifiable and predictable. Risk perception is highly dependent on intuition, experiential thinking, and emotions. The three high order factors are extent of understanding of risk, extent of feeling of dread (factors such as feeling of uncontrollability, catastrophe etc used) towards risk and extent to which masses are exposed to that risk.

Today environment is highly risk conscious. Risk perception and risk propensity are identified in literature as two direct determinants of decision process. Risk perception is assessment of risk based on severity and likelihood of a happening and risk propensity is cumulative general tendency to either take or avoid risk. More conservative firms (risk averse) tend to value compliance and stability, reward conformity and use more structured and mechanistic planning and budgeting system.(Harwood et all, 2009)

2 Risk in social science

Social science theory admits that risk is center point of various macro theories of society. Risk is more ingrained in discipline of sociology and comparatively much less in other social science disciplines.

Cultural theory of risk:

This Theory was developed by anthropologist and sociologist, It posits that risk perception is socially constructed by Institutions, Cultural values and ways of life, Anthropologist Douglas and

Wildavsky gave four “ways of life” in using a grid/group axis configuration, wherein the way of life relates to specific structure and a defined risk position. Grid specifically explains the degree to which people are constrained and circumscribed in their social role. The stronger binding of social constraints limits individual negotiation. Group refers to the extent to which individuals are bounded by feelings of belonging or solidarity. The higher/stronger the bond, the less individual choice is subject to personal control, Douglas (1992) postulates that risk takes a specific form in modern society. It is equated to dangers threatening individual and collective security and existence. She argued that functionally Pre modern “Sin” is equivalent to Modern concept of “risk”. The identification of specific Sins or risks reflect specific ways of life, specific way of structuring social relationship and supporting cast of belief, emotions, perceptions, interest’s. Merely Economic approach of risk cannot explain the why individuals and groups differ in the way they identify and respond to risk. This differences are due to different preferences which in turn is product of differing social formations. Here in the Theory there is shift of focus from “Risk” to individual and groups ways of selecting and assigning value of importance. Cultural theory of risk perception theory given by Douglas and Wildavsky has been used to explain risk management strategies. It suggests antecedent worldviews that underpin both perception about hazard and policy, strategy management and preference for controlling it (Hirsch et al,2011).

Why firms feel the way they do about various risks is still unclear. This gap in the theory has led us to explore the usefulness of cultural theory of risk. A sociological and anthropological approach, ostensibly focuses on the organizational norms and relations innate to different types of firms. This approach, unlike the psychometric paradigm, offers a possible explanation for why various firms identify risks and prefer different risk management approaches. The premise of this theory is that institutional structures promote particular types of organization that people ascribe to or not. The push and pull between core (current regimes of standard prescriptions) and extent of bonding between groups attempts to explain the worldviews or ways of life of different firms as they identify and manage risk. The “grid-group” approach is used as a heuristic device within the cultural theory of risk.

Risk Society theory: This theory was given by sociologist Beck and Giddens, Beck stated that it is the way of dealing with hazards, uncertainties arising due to Modernization and Giddens stated that risk society is a society increasingly preoccupied with the future and with safety. Beck (1992) put forth that both the nature and responses to risk differentiate late modern societies from earlier social formation. As per his theory we live in in period of transition wherein property and power to an extent remain modern. Late modernity is characterized as Risk society by Beck (1997, 2004). Late modernity brings in modern global risks due to changes such as economic growth and technological advancements. Due to lack of empirical evidence this theory was criticized.

The risk society occurs when Industry produces and changes format of hazards leading to challenge safety systems and risk estimates. He introduces Reflexivity as the self-confrontation with the consequences of a way of living that cannot be addressed or overcome in the system of industrial society. He argues that late modern society has 'new' risks compared with the premodern time, which also had its hazards, but these were derived out of an externally positioned nature which may be God or some divine source. Newer risks like Environmental risks which is due to modern society has become social problem making large masses aware and adapting, evolving in managing them. Society is active in risk awareness ,participating in control and changing regulations . Risks thus have power to shape society and leading to new risk management and governance.

3. The Social Amplification of Risk Framework (SARF)

This theory combines psychology, sociology, anthropology, and communications theory. It gives how communication moves from sender to receiver and in process where the amplification of message takes place. All links in the communication process facilitate the amplification thus explaining the process by which risks are amplified, receiving public attention, or attenuated, receiving less public attention. This theory was proposed by Kaspersen et al. (1988). Which considered that certain aspects of hazard events and their depiction in mediated and other sources interact with psychological, social, institutional, and cultural processes in ways that might decrease or increase perceptions of risk and lead to behavior modification .The framework may be used to compare responses from different groups in a single event, or analyze the same risk issue in multiple events. Here the factors being psychological, social and other cultural ones which in ways either increase or decrease public perceptions of risk, the secondary changes are

perceived and reacted to by individuals and groups resulting in third-order impacts. As each higher-order impacts are reacted to, they may ripple to other parties and locations. Public distortion of risk signals provides a corrective mechanism by which society assesses a fuller determination of the risk and its impacts to such things not traditionally factored into a risk analysis.

Risk Management:

Risk management looks at two aspects -Hard aspect of Risk management which deals with physical settings, procedures, equipment, facilities and tools used for identifying and managing risks. This hard aspect Risk management has been explored academically by scholars. Soft aspect of Risk are those concerned with mind of people. Foremost concern area is “people”. (Duncan, 2005). Attitudes, value motivation and various soft issues concerning Human at work are more important and needs to be explored further.

Enterprise wide Risk management is the enterprise's combined effort to identify, evaluate and manage risk to be within its risk appetite. (COSO, Committee of Sponsoring Organizations of the Treadway Commission, 2004).

The risk management is response planned and critical activity undertaken to address risks evaluated in the identification, qualification and quantification efforts. It is the response strategy to risks which fall in the categories such as Avoidance, acceptance, mitigation and transference.

Risk acceptance: This is risk response strategy of acknowledgement and lack of a proactive response. Passive risk acceptance involves taking no action and tolerating any potential outcome. Active risk acceptance involves either setting aside contingency funds or establishing contingency plans that will be applied only if risk event actually comes to pass. (Pritchard, 2005) It involves conscious and deliberate assumption of recognized risk, that is if loss occurs firm will pay for it out of whatever funds are available at the time, the risk retention/acceptance/absorption can be planned or unplanned, and losses that occur can either be funded or unfunded in advance. (Trieschmann, 2007)

Risk mitigation: This is risk response strategy designed to proactively minimize either or both the likelihood and severity of risk.

Risk Transfer: The risks are transferred through external means. (Pritchard, 2005). Largely the risk is transferred from a firm facing the loss to the insurer (Promislow, 2010)

Enterprise risk involves any risk or hazard in an organization, including business, financial, and hazard risk.

Enterprise wide risk management Framework (ERM)

COSO (1992) defined an integrated ERM framework as “a 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”. Integrated ERM framework is designed to deal with risks and maximize stakeholders’ value by effectively and efficiently allocating resources in order to achieve an optimal balance between growth and related risk.

The overall goal is not simply manage risks or negative consequences, but also to view risk positively (i.e., something to seek in order to create value) because a missed opportunity is usually more risky than business disruption (Hampton 2009).

Conclusions:

The usual format of risk is evolving and the debate on positives and negative aspect is on. The various rational, objective and subjective thinking models linked to risk concept are evidenced by similar and not so exhaustive interpretations as on date. The risk analysis is more prescriptive in nature and managers assumed to have complete knowledge and hence in control. There is no much enquiry about how these knowledge experts explore, understand and interpret risk and risk management.

Summative enquiry of attitudes and ideas towards risk and risk management across fields is a positive step so far. There has been gradual change, in the Pre modern period risk was considered as fate, sin, unknown-superstition and the response being mere acceptance or blame but accountability being in form of punishment vengeance etc. In Modern period risk is considered measurable and defined and response to risk is protection and avoidance. In risk society period risk is considered to be manageable and control is the response using systemic approach based on expert advice, systems for response and blame avoidance, and accountability is in the form of system changes and extensive controls.

Increasing interconnection between business and social world brings in higher level complexities and multiple dependencies. Hence, no longer can we approach risk in silos; we need to integrate effort to manage the risk. The advancements in Enterprise wide Risk Management makes risk owners able to detect and correct potential hazards when they occur and thus prevent further risks. ERM requires risk owners at the operational level to have considerable knowledge, communication, control, and authority which are reserved for managers in a traditional risk management system. The relative roles of risk owners and low-level managers can be critical to the success of ERM. Managers need to be able to manage risks at the lower level. In other words, ERM makes significantly different empowerment demands on risk owners and low-level Expert and Executives. Holistic approach of risk is essential in today's world, risks are therefore needed to be viewed as "everyone's responsibility" rather than as "not my responsibility".

The dynamic risk definition is a challenge to both academicians and practitioners. Complexity of researching, thinking about intellectually, and governing by way of informed decisions needs to be integrated in true spirit, in order to tame this uncontrollability and uncertainty of extant and emerging risks.

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