

Preface

The severe unstable performance and evolution of large organizations of the risk society is generally recognized by management experts and the corresponding academic community. This recognition significantly supports the amplification of the contribution of risk management in the performance and evolution of modern complex organizations. As a consequence, the discipline of risk management is in the ascendancy. Moreover, risk management has a long and rich history matching the breadth that characterizes this discipline. During the last 20 years, the interest of the academic community in the discipline of risk management has been considered very important. The presence of that interest follows from the plethora of conferences and research papers related to risk management matters, implemented by experts on investigating and applying concepts, operations and principles of that discipline. The recognition of risk management as a powerful tool for solving problems arising in a very wide variety of natural and human activities is general. Within the risk managers and the academic risk management community, there has been a very strong interest in stochastic models. Once stochastic models are available for the description of real-world problems in the area of risk management, it is possible to intelligently evaluate the issues and alternatives and chart courses of action for a proactive risk management program, which is particularly important for implementing the strategic goals of an organization. Such models are employed in many areas of the risk management process because risk managers work in an extremely complicated and uncertain environment. From the fact that stochastic models give their users a chance to isolate and study the various thought processes involved, risk managers can gain insight into how to improve their decision-making process in developing determinations about the risks faced by an organization. Risk identification, risk measurement and risk treatment constitute the fundamental risk management operations of an organization. The effective application of planning, organizing, staffing, directing and controlling in risk management operations implies the effective performance and evolution of modern complex organizations. The stochasticity of the risk management process is an inevitable result of the presence of random factors in the fundamental quantitative components of risk and the fundamental risk management operations of an organization. The handling

of these random factors requires the risk managers of modern large organizations to have strong capabilities in formulating and implementing complex stochastic models for describing fundamental concepts and operations of risk management. The consideration of stochasticity of the risk management process is an extremely important structural element for developing proactive risk management programmes. The recognition of probability theory as a powerful analytical tool of risk management constitutes a very important reason for undertaking research activities in the area of probability distributions arising in stochastic modelling of concepts and operations of risk management. The investigation of such stochastic models makes use of the results of the theory of mixed probability distributions. In particular, the very strong results of the theory of characteristic functions corresponding to mixed probability distributions are extremely useful for investigating properties and applicability in risk management operations of stochastic models of this kind.

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