

TRAINING PROVISIONS FOR RISK MANAGEMENT IN SMES IN THE UK CONSTRUCTION INDUSTRY

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Risk management continues to be well recognised as an integrated key function of the enterprises management process in the construction industry. Literature has established that it is rapidly becoming an indispensable approach adopted by organisations in the industry for achieving strategic business objectives. However, due to inadequate provision of training programmes in risk management, Small and Medium Enterprises (SMEs) mainly suffer from its lack of implementation. Focus of training on the general concept of risk management without considering the organisations' characteristics and requirements has influenced the SMEs' understanding of risk management. On the basis of a semi-structured interview and qualitative research with SMEs, the nature of training provisions of risk management in SMEs in the UK construction industry was discussed. 30 participants outlined that training within organisations, particularly in SMEs, is a complex and context-embedded activity. Its development requires a full consideration of organisational characteristics including the system of management; level of resources; degree of employees' knowledge; and objectives of the organisation. The result of the study also indicated that risk management training programmes have to be geared to the organisational activities to deliver the benefits and advantages of the process. It needs to provide a proven method for incorporating risk management processes as integral elements of business management. Moreover, training should focus more on creating the learning environment that supports employees to improve efficiency by controlling the risks of activities.

Keywords: risk management, training provision, small and medium enterprises.

INTRODUCTION

Over the past few years, significant changes in the UK construction industry - i.e. practice of Building Information Modelling (BIM) process - have imposed considerable pressure on its organisations to respond adequately to their business environment (Holt *et al.*, 2000). Requests for industry improvement resulted in the emergence of numerous government commissioned reports evaluating the industry's structure, culture and operation (Latham, 1994 and Egan, 1998). The critical role of Risk Management (RM) for improving the organisational operation within the construction industry has been confirmed by those reports. RM was introduced as a process to promote productivity and business entrepreneurship by managing uncertainties (Chapman and Ward, 2008). This view is supported by the UK Government through the British Standard focusing on RM (BS 31000:2009). It is argued that the main drivers behind the practice of RM among enterprises operating in the UK construction industry are the prerequisites from the government for industry

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improvement and the individuals' demands to obtain competitive advantage in their organisation.

Recent studies in the UK construction industry indicated the weak reputation of RM within organisations (Lyons and Skitmore, 2004; and Smith *et al.*, 2014). The researches by Bowen (1993) and Liu and Cheung (1994) explained that the challenge in the implementation of RM within organisations is mainly related to professionals' inadequate level of knowledge in RM concepts and mechanisms. Couillard (1995) highlighted that, even management with frequent use of RM find it difficult to understand the rationale for and formal process of RM in new projects. Diversity in parties' perceptions in a construction project invites undesirable biases in decision making which makes the process of managing risk more complicated and unacceptable (Liu and Cheung, 1994). Researchers such as Akintoye and MacLeod (1997), and Carr and Tah (2001) indicated that a small number of organisations practise formal RM systems with analytical approaches in assessing risks. They identified the "*human problem*" which is associated with knowledge and experience of the key players as an initial barrier for RM implementation in the construction industry. Rostami *et al.*, (2015) through an empirical research outlined the role of risk management training programmes in the mitigation of the human problem. They specified that an appropriate training programme assists SMEs to raise awareness of risk management concepts and mechanisms, and enables them to adapt RM based on organisational characteristics.

This paper evaluates the nature of training provisions for RM in SMEs in the UK construction industry through semi-structured interviews which were fundamentally designed and developed based on a broad review of literature on SMEs' characteristics and the key issues in RM.

TRAINING FOR RISK MANAGEMENT IN SMES

The degree of receiving benefits from RM is dependent on the professionals' quantitative backgrounds and their ability to interpret and apply RM concepts within organisations (Wood and Ellis, 2003). Education and training as two essential factors play a significant role in the development of professionals' ability within organisations. Professionals in construction organisations use both education and training to bridge the gap between theory and practice in RM (Akintoye and MacLeod, 1997).

The objective of education and training is to improve performance by developing skills and knowledge (Lane, 1987). Education in this context conveys the general knowledge and understanding of the environment which improves the employees' observation, analysis and decision-making abilities. However, training is concerned with employees' performance in a specific area or job which they are hired to do (Flippo, 1961). Goldstein (1980) explained training as the "*acquisition of skills, concepts, and attitudes that result in improved performance in all job environments*".

The theory and processes of risk management have been extensively explained by professional bodies and in standards; however, none of these have addressed the fundamental principles of applying the process to the situation that small and medium-sized enterprises find themselves in (APM, 2010). Evidence indicates that training programmes to support risk management implementation and its continued application are inadequate for SMEs. Few training programmes exist in the area of risk management that consider the practitioners' size and capability; and most training

courses address risk management practices in large enterprises with less attention to SMEs' characteristic. (Rostami *et al.*, 2015)

A review of the literature on RM in the construction industry indicated three major barriers to training (Akintoye and MacLeod, 1997; and Chileshe and Kikwasi, 2013). The first barrier is concerned with financial resources for training programmes. The second is the absence of adequate capability to run training programmes. And the third is the limited time people have to attend the training programmes. Many SMEs, due to their characteristics, suffer not only from resources restriction but also from inability to carry out training programmes, despite there being a need for initiating, planning and implementing the training. Wood and Ellis (2003) also highlighted that there is a limited evidence of employees receiving training on formal RM. Thus, there is an empirical requirement on training for RM in SMEs in the construction industry.

RESEARCH METHODOLOGY

This research aimed to determine the nature of training provision for RM in SMEs in the UK construction industry that can be applied to the development of a RM framework for SMEs. As a whole, the study was based on a sequential explanatory mixed method and included quantitative and qualitative studies. This paper embraced the qualitative part of the study with literature review.

The data for the study was obtained by means of semi-structured interviews. Organisations which participated in this study employed more than 10 people but less than 250. Database for the study was obtained from the Office of National Statistics (ONS), the Small Business Gateway, the Financial Analysis Made Easy (FAME) and the Scottish Centre for the Built Environment (SCBE).

The non-probability 'self-selection' sampling technique was adopted to seek assistance from organisations that highlighted their interests in the research topic at the first (quantitative) part of the study. Saunders *et al.* (2009) stated that unlike quota and probability samples, there are no rules for sample size in a non-probability sampling approach; rather, the actual size depends, among other things, on available resources and the logic behind the sample selection. This argument is supported by Patton (1990), who maintains that the validity and understanding that the researcher will gain from the data in this type of sampling will have more to do with the data collection and analysis skills than the size of the sample.

The period of the study was from the 10th of April to the 21st of May 2013. 30 small and medium-sized enterprises participated in this study (Table 1). Attempts were placed to have samples across architecture, engineering, quantity surveyors, and construction organisations.

Table 1: Organisation distribution which participated in the study

Organisation	Architecture	Engineers	Contractors	Quantity Surveyors	Total
Small	3	5	5	4	17
Medium	2	3	4	4	13
Total	5	8	9	8	30

Through the semi-structured interviews, the subject of risk management training was discussed. The first part of the semi-structured interview stimulated responses of participants in risk management training strategy. It considered delivery methods and

different types of training with information about barriers in risk management training within organisations. The second section discussed the nature of the current training provisions for risk management in SMEs. The last section addresses the nature of future training which is required for risk management in SMEs in the UK construction sector.

Content analysis was adopted to convert the obtained large quantities of data from interviews into a meaningful and usable format. Coding and analysis of the interview sessions were accomplished by NVivo 10. The responses were arranged through the Nodes field. Nodes included tree-nodes and sub-nodes which formalised the hierarchy structure of the data. There were sixteen questions in the research interview; thirteen questions were asked in part 1 and three questions in part 2. In total, there were seven sub-nodes under the interview response by questions category.

THE NATURE OF RISK MANAGEMENT TRAINING CURRENTLY IMPLEMENTED BY SMES

The aim of training within enterprises is to enhance the efficiency of employees and consequently businesses (Hughey and Mussnug, 1997). Mathieu *et al.* (1992) outlined that individuals' skills are directly dependent on training which expands their current knowledge and experience. Training in risk management assists organisations in developing personnel's understanding of the process and thereby controlling the business environment. Training is in general categorised into internal and external training courses. Internal trainings are mainly carried out by senior staff with a sufficient degree of knowledge and experience within the organisation; however in external trainings, the employees attend courses provided by professional organisations.

Training for risk management should be developed according to the work environment (Isaac, 1995). They need to demonstrate some benefits from the practise of risk assessment and risk control in projects (Capleton *et al.*, 2009). A literature review outlined that training for risk management had not been fully developed (Akintoye and MacLeod, 1997; Uher and Toakley, 1999; and Lyons and Skitmore, 2004), albeit risk analysis trainings in construction projects had been offered by many professional bodies.

Through the semi-structured interviews, the subject of risk management training was discussed. The first part of the semi-structured interview that stimulated responses of participants in risk management training strategy was, "is there a specific risk management training programme in your organisation?". The analysis of collected data revealed three types of managerial strategies for training (Table 2).

Table 2: Training Strategies within SMEs

Type of training strategy	Small	Medium	Total	Percentage
General training plan	12	14	26	87%
Specific training plan for risk management	8	13	21	70%
No training plan	4	0	4	13%

Twenty-six participants out of 30 enterprises highlighted that there was a general training plan within their business plan. The training programmes were mainly provided by construction professional bodies such as The Royal Institution of Chartered Surveyors (RICS), The Chartered Institute of Building (CIOB), The

Institute of Structural Engineers (ISE), The Royal Institute of British Architects (RIBA), Construction Industry Training Board (CITB) and the National Construction College.

Twenty-one out of 26 organisations had specific plans for risk management training. The enterprises without a risk management training plan stated that risk management training courses in the construction sector were only applicable to large organisations, and to the best of their knowledge, no external training programme had been designed on the basis of small-sized enterprises' characteristics. Also, lack of on-the-job training programmes to meet the organisational objectives was highlighted as the second barrier to the risk management training.

From the data in Table 2, it is evident that 4 of the 30 organisations had no general or specific plan for risk management training within their organisations. All those companies were small-sized enterprises. They mostly named time and budget limitations as the key barriers to training. A sub-contractor's owner-manager stated that planning and running training programmes require a considerable degree of investment in time and budget, as well as significant human resources – hence training disrupts business' activities and wastes organisational assets. Another manager from a small organisation defined training programmes as total waste of time. He argued that the organisations could save resources with less training sessions and by employing experts. The SMEs mainly recruited professionals to utilise their expertise in their construction business, and hence there was no need for training investment.

In this study, twenty-six interviewees out of 30 stated that they preferred to have in-house and on-the-job training for risk management. This outcome confirms the result of the past research of the CITB which outlined that most construction enterprises select in-house training programmes instead of external courses. The study's result indicated that after nearly twenty-seven years the industry's attitude towards the training courses had not changed. Lyons and Skitmore's (2004) empirical study focused on the Queensland engineering construction industry also underscored in-house training as the most popular method of training. They specified that the most beneficial risk management training that organisations had received was through in-house training and experience.

Eighteen of the 21 organisations with specific training plans for risk management indicated that they held in-house training sessions for risk management for their construction projects. They classified those trainings into on-the-job and off-the-job trainings (Table 3).

Table 3: In-house and Public Scheduled Trainings within SMEs in the Construction Sector

Training methods for risk management	In-house		Public scheduled trainings	Total
	On-the-job	Off-the-job		
Small	6	1	1	8
Medium	9	2	2	13
Total	15	3	3	21

Fifteen out of 18 interviewees that practice in-house training, indicated that they implemented and practised on-the-job training for risk management, while three interviewees used off-the-job training for managing risk. They named full concentration on learning rather than performing, and freedom of expression as the

main factors for selecting off-the-job methods. On the other hand, fifteen interviewees pointed out travel cost saving, more focused training, use of current work examples, team building and convenience structure as the key features of on-the-job training.

The Job Instructional Technique (JIT), Apprenticeship and Mentoring were revealed as the most practised methods for on-the-job training within SMEs. These methods provide a practical form of risk control for practitioners. JIT and Mentoring techniques assist managerial trainees to have an overview of the involved risks, their impacts, and the desired results (APM, 2010).

Through JIT, the trainer illustrates the task or the skill to trainee, and allows trainee to demonstrate his/her understanding on the job. This technique delivers a step-by-step learning process, highlighting when the trainee has learned. One of the interviewees stated that this method was a valuable tool for trainees, which also affords practitioners the possibility to receive feedback on each stage in the work-place.

The second revealed apprenticeship as their training method for on-the-job training. Five organisations were practising this method as a mode of risk management training. Chand (2014) defined apprenticeship as a system which trains a new generation of practitioners for a skill. This method is used in particular trades and is mainly facilitated by practical experience (Egbu *et al.*, 2003). One small-sized enterprise stated that the apprenticeship method helps to manage unexpected problems by training individuals, albeit a long period is required to obtain proficiency.

Mentoring is a critical method that requires modification of the employees' attitude to develop into a proficient practitioner (De Janasz and Sullivan, 2002; Allen *et al.*, 2004 and Emmerik, 2004). This method focuses on the improvement of business by transferring individuals' (mentors') advanced experience and knowledge to employees (Ragins and Cotton, 1999; and Emmerik *et al.*, 2005). In this technique the mentor plays the role of both the content expert and the process consultant (Swieringa and Wierdsma, 1992). An interviewee from a medium-sized enterprise stated that the mentor's skills helped them to improve their reflection process, and delivered knowledge to senior employees as to how to assess their suggested solutions in activities. Another interviewee highlighted that the method of mentoring increased the skill and creativity of their staff in uncommon business difficulties. In two organisations, the senior managers of the companies were mentors and responsible for staff training. They taught risk analysing processes to new employees to enhance their skills in the process.

Uher and Toakley (1999), and Lyons and Skitmore (2004) explored that both individuals and firms in the construction industry present a moderately strong commitment to cultural change by actively supporting new management concepts and strategies. While the construction industry is undergoing change, the rate of change appears to be slow. The main obstacle identified is the low level of knowledge and skill, which are caused by lack of commitment to training. Five interviewees confirmed this cultural issue and stated that the industry has to improve its commitment to training, if it is to take full advantage of risk management. The outcomes indicate that the nature of training provision for risk management within SMEs in the construction industry is primarily based on in-house, on-the-job training with the practise of Job Instructional Technique (JIT), Apprenticeship and Mentoring.

FUTURE TRAINING FOR RISK MANAGEMENT WITHIN SMES

The last question of the interview assessed the nature of future training for risk management within SMEs in the UK construction industry. In this study, the participants outlined the similar method of training for the future. Twenty-two out of 30 interviewees determined the in-house, on-the-job training method for future risk management training. Eight participants mentioned they would prefer to have short and brief external courses rather than in-house trainings. They specified case studies in external training helped them understand the benefits and challenges of other SMEs who were successful in risk management implementation and practice. They believed that external training courses facilitated by specialists deliver more opportunities for trainees to share knowledge and experience within seminars and group discussions.

All interviewees specified the importance of risk management training within organisations. They suggested that future risk management training needs to: be time and cost effective; focussed more on particular aspects of projects; geared with projects' activities; and formalised training programmes (Table 4).

Table 4: The Nature of Future In-house Training for Risk Management

Future In-house training for RM need to:	Small	Medium	Total	Percentage
Be time-effective and cost-effective	12	9	21	70%
Focus on particular aspects	8	9	17	57%
Gear with work environment	3	11	14	47%
Formalise training programme	2	3	5	17%

The data in Table 4 present that 70% of SMEs in this study desired to have time-effective and cost-effective training courses in the future. They indicated that trainings would have to meet their allocated time and budget resources. A manager from a small-sized organisation stated that risk management training should be an in-house training, but it would totally depend on the cost and how much time would be taken. For in-house training, the organisation needs to have sufficient number of trainees to justify the financial input. Another project-manager from a medium-sized company outlined; *“the problem is of course how to find time and where to fit trainings within the working days of an employee”*. SMEs mainly suffer from lack of time and budget in their projects; however, they need to have right skills within the organisation. They realise that training helps employees to relate their activities to risk management and match their tools and techniques with their duties.

Time and cost effectiveness factors were followed by the focused training programme for risk management within SMEs. 57% of participants stated that training in risk management should focus on particular aspects of projects. Training through a focused in-house training could provide in-depth information (by case studies and sample sites); however, external trainings typically discuss general aspects of risk management. A focused training programme supports employees to have a practical visualisation of what a risk represents, also helps SMEs to identify and eliminate relative risks in their work. This type of training is more beneficial for senior staff with particular knowledge and experience.

Fourteen out of 30 participants specified that future training courses had to be geared to organisational working environment. This factor presented the impact of risk management on SMEs. 47% of SMEs had difficulty in understanding the connections

between risk management outcomes and their activities. In-house and on-the-job trainings link objectives of the business with risk management processes. Employees need to see how risk management and risk analysis outcomes could affect their activities. A specific example by an expert based on the organisation's business environment is more tangible than an irrelevant site simulation in an external seminar or conference. A senior manager from a medium-sized company stated that involved risks in a project need to be considered in time and matched against cost management plans, and need to be measured in each related activity. This process is known as the Risk Break-down Structure (RBS) that could be obtained through a geared risk management process. A geared risk management training assists staff to relate what they have been taught and what is actually happening on the site. Furthermore, the discussion on the nature of future training specified formalised training programmes for risk management. 17% of the participants indicated that a formalised training programme within the organisation would be more beneficial than irregular training. Formalised training with determined mission and vision in the organisational business plan can provide a range of useful information that would improve individuals' skills and knowledge.

The result of the current study along with the views of Mathieu *et al.* (1992) and Armstrong (1996) in organisational training programmes indicated that developing risk management training needs an inclusive consideration of learning theories. Antonacopoulou (1999) emphasised that learning theories need to be assessed with employees' training requirements, and have to consider the involved factors of adult learning (Harrison, 2000 and Kepczyk, 2001).

CONCLUSION

On the basis of a survey with the UK construction SMEs having adequate knowledge and experience of construction management, training provisions for RM was discussed. The results outlined that the existing risk management training programmes largely review the general concept of risk management without considering the practitioners' characteristics and requirements. The content analysis specified that majority of SMEs preferred to have in-house and on-the-job training for risk management. This type of training enables SMEs to focus on a particular aspect of each project. It also connects the risk management processes with the organisational activities that facilitates understanding of the benefits and advantages of the process.

Risk management training within SMEs is a complex and context-embedded activity. It requires a full consideration of the organisational characteristics including the system of management; level of resources; degree of employees' knowledge; and objectives of the organisation. In SMEs, the training of risk management should focus more on creating the learning environment that supports employees to improve productivity by controlling the risks of activities. Review of the principles in adult learning specified the needs of the future training in risk management, which could assist to improve the organisational competitiveness.

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