

# AN EVALUATION OF RESIDENTIAL SPECULATIVE DEVELOPERS' SUBCONTRACTORS PERCEIVED RISKS

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Speculative house building is driven by market demand and has since the mid-sixties grown into a huge market and increased in dominance throughout the seventies and the eighties. In the 1990's there has been an unprecedented slump in the housing market and it is unlikely that the same level of increase witnessed for much of the 1970s and 1980s will return in the foreseeable future. Sub-contracting is one strategic action which speculative developers employ to cope with long-term demand uncertainty. It allows the developers, if they so choose, to avoid the employment of a stable work force and investments in fixed resources under conditions of fluctuating demand for houses. The paper presents a research into the speculative housing developers' pertinent risks as a result of the employment of subcontractors. It discusses the unique nature of the speculative housing market and the risks and uncertainties faced by these speculative developers. Details are also given of the important roles that sub-contractors continue to play in the speculative housing market sector. The overall analysis revealed that the risks are higher at the start of the contract but through identification and control can be managed and turned into critical success factors during the duration of the contract.

Keywords: developer, risk, speculative housing, sub-contractor, uncertainty.

## INTRODUCTION

Residential speculative developers have increasingly had to seek housing development work further and further afield and away from their base and so have had to increase the use of sub-contractors, as the cost of using their own workforce has been too high. Also a tighter planning and legislative environment is emerging. The major problem that speculative developers are faced with in the 21<sup>st</sup> Century is demand uncertainty for prime site for housing development and the government policies on green and brown sites for development. Moreover, spatial dispersion is likely to increase problems of co-ordination and control for the developers. Distant housing project locations would probably pose further potential problems in terms of other logistics like plant, labour and materials procurement.

Under uncertain demand conditions, increases in investments in fixed resources are likely to aggravate the smoothing process and lead to low utilisation problems due to difficulties in balancing of components.

All these problems should have fundamental implications for the speculative developers market structures, risk management and competitive structure. The cost of

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these risks to a speculative developer whether managed or not, can have a significant impact on its balance sheet.

This paper has two main objectives firstly to examine the reasons for the growth of sub-contracting in residential speculative development and secondly to identify pertinent risk factors faced by residential speculative developers by their employment of subcontractors.

## **RESEARCH METHODOLOGY**

The methodology used in this paper includes:

Preliminary meetings and interviews with ten residential developers (two big sized-firms, five medium-sized and three small-sized) in the East Midlands. The majorities of the interviews were in the form of opinion or attitudinal statement. This approach is commonly used in opinion polls associated with government elections. As attitudinal statements have their limitations (Oppenheim 1966), after each reply the interviewee is asked for richer qualitative details on why he/she has this view and what causes him/her to take it. One of the main advantages of this research method is it elicits peoples attitudes, impressions, opinion, beliefs and judgement (Buckley *et al* 1975). Some of its main deficiencies are that it may suffer from biases inherent in the design of the survey instruments for example, prior selection of questions and response sets and systematic biases in the way in which the respondents answer the questions, for instances biases between favourable or unfavourable, or familiar and unfamiliar questions (Buckley *et al* 1975).

An analysis of a case study of one of the speculative developers (Birch Homes), a medium-sized housing developer based in Derbyshire.

The conceptualisation and realisation stage of this investigation as with most research project methodologies was focused on a careful synthesis or exploration of primary and secondary sources of literature (data collection) regarding residential speculative development and risk perception in the housing sector.

It should be emphasised that this investigation has been considered essentially as an innovative first stage in an ongoing research programme, and is therefore too early to draw firm conclusions from the study

## **ANALYSIS AND DISCUSSIONS**

Risk is an inherent component of any commercial or financial venture and involves situations in which certain events are clearly defined. There is no industry-standard definition that can be used to adequately embrace all the various risks and uncertainties residential speculative developers are confronted daily with in dealing with subcontractors. Whilst, it is of extreme benefit to separate in this paper the difference between risk and uncertainty in conceptual terms, it is of no practical importance in today's residential speculative development market where the satisfaction of the customers' ever-changing needs is of paramount importance for their survival.

Their differentiation can however be discerned to a common understanding that the environment surrounding housing development is not perfectly known to the many developers. As a result of this, it would be important to evaluate the choices available and the way the choice are valued (risk behaviour) Jasper and Ouellette (1994). More

often than usual, residential speculative developers are pressured to make decisions regarding the employment of subcontractors or solve problems within limited and dynamic environments that leave them with only three choices under which decisions can be made. These three conditions under which decisions can be made were identified in Thompson and Perry (1992) and Cairns, and Beech, (1999), research as certainty, risk and uncertainty.

### **Synonymity of risk and uncertainty in speculative development**

Both in literature and business today, there are adversarial views on whether risk and uncertainty are synonymous Cunningham (1967), Cairns, and Beech, (1999), Dunn *et al* (1986). A clear separation of the two is difficult to find in primary and secondary sources of praxeology. Representing the synonymous school of thought are researchers such as Kahneman and Tversky (1982) and Bauer (1960) who maintains that;

*“Risk is associated with uncertainty about future events, and more risk implies more uncertainty.”*

In agreement with this view, Nicosia (1969) reaffirms that the;

*“handling of risk means handling of uncertainty”*

In view of the above statement, Nicosia implied that dealing with information implied handling of risk as information is never fully reliable and is bound to have technical biases, human errors and purpose of use. Alhakami and Slovic (1994) in their analysis of the different types of uncertainty in financial auditing using fuzzy logic as a method of management concluded that risk results due to deficiency in information which in turn leads to uncertainty. As a result of risk, certainty grows from information reliability.

In more support to the above views Vann (1985) and Ho Simon and Victor (1994) argued that;

*“the exact course of future events is unknown when investment choices are made, and uncertainty creates risk.”*

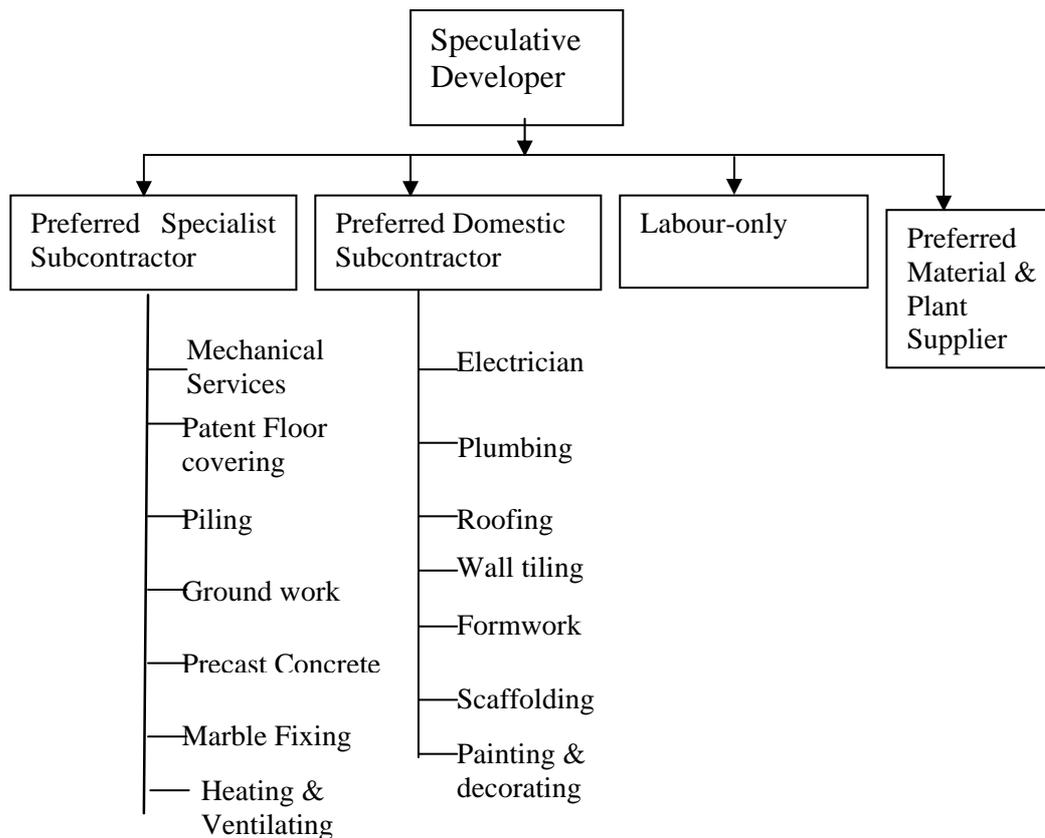
Opponents of the Synonymity theorem such as Hughes (1985) justify their argument by stating that:

*“ the distinction between risk and uncertainty is that risk involves situations in which the probabilities of a particular event are known; whereas with uncertainty, these probabilities are unknown..”*

### **Important roles of subcontractors in speculative residential development**

The changing structure of the speculative market creates new opportunities and poses some problems for the speculative contractors. For instance, the increased use of sub-contractors in recent years is very important to the construction industry, as their performance is now very critical to project success as all other control actions have little effect once a totally unsuitable sub-contractor has been appointed.

A major advantage of sub-contracting is the flexibility it allows the residential speculative developer, given the nature of construction demand and technology. For stability/flexibility oriented firms sub-contracting is of value in-as-much as it provides for the flexibility that the firm seeks in responding to environmental and project demands.



**Figure 1:** Typical site organisation in a Speculative Developers' Contracts

For the small developers, sub-contracting is a coping device for survival. Availability of sub-contracting allows these firms to maintain a very limited administrative and resource capacity responding to project demands as they come. The role of this type of developer in the construction process is like the large contractor discussed by Okoroh et al (1996), but operating on a much smaller scale and with limited financial resources. There is high reliance on sub-contracting, the specific amount being determined, by the characteristics of the small number of housing projects that the developer is undertaken at that point in time and the conditions in the localities in which the projects are carried out.

### **Complexity of the transformation process**

Another important characteristic of residential speculative projects is the complexity of the transformation process because of the variety of preferred subcontractors required (Figure 1). The developer has to operate within these general contextual conditions. Attempts to solve these problems intra-organisationally require increases in investments in fixed resources, human or material, some of which may be specific in use. Complexity in this case is defined as the variety of component activities required to complete the project. Variety in components of a project is due to the diversity of functions of the building or set of buildings or the special needs of the project. Multi-function buildings and/or unique needs are likely to increase the need for a wider range of labour specialities and specialised equipment, which may not be at the disposal of the developer.

### **Perceived environmental uncertainty**

Sub-contractors perform some of the boundary spanning functions component for a residential speculative developer. Recruitment of personnel, procurement of supplies, stockpiling of inventories, obtaining credits are some of the buffering mechanisms taken over by sub-contractors. Sub-contracting eases this problem by providing a ready-made mobile labour force which can be moved from one project to another.

### **Local condition experience**

Residential speculative developers have increasingly had to seek work further and further from their base and so have had to recruit the workforce locally, as the cost of using their own workforce has been too high.

Distant project locations would probably pose further potential contingencies in terms of climatic conditions and labour and materials procurement. Sub-contractors in speculative development do serve as a convenient buffer for the technical core at the site to local environmental conditions. Moreover, spatial dispersion is likely to increase problems of co-ordination and control for the contractor.

### **Speedy construction**

In the majority of residential speculative housing development, customers usually impose stringent time constraints on developers both during project development phase and construction.

Time limits imposed on the project by the customer may be another important factor determining the amount of work subcontracted. Time limit is not conceived as the absolute duration of the project but the time available as compared to the time required for the completion of a normal piece of work. One of the potential benefits of sub-contracting is getting things done in a shorter time, owing to, primarily, specialisation on the part of sub-contractors.

### **Ease in obtaining planning approval**

Through the sub-contractor, the speculative developers also avoid getting involved in certain linkages with other external bodies. Design work can be subcontracted to a design and consulting firm, which not only presents a completed project to the developer but also solves the bureaucratic problems with authorities.

### **Increase in resources**

Sub-contracting enables access to resources not available in-house. Higher diversity also implies higher levels of complexity to be managed, increasing the burden on the administrative capacities of the firm. By taking on a range of boundary spanning functions for the speculative developer, sub-contractors help to reduce environmental complexity and thus the pressure for structural elaboration. So, greater diversity is likely to lead, albeit at varying degrees, to higher levels of sub-contracting for all types of construction firms.

Specialisation on the part of the sub-contractor leads to cheaper prices for specialist work, because in theory, they are supposed to complete the task within the minimum time requirement. By specialising, the sub-contractor should be in a position to carry out the work far quicker than the main contractor.

### **Risks and uncertainty associated with sub-contracting in speculative housing development**

Sub-contracting may have solved some of the problems outlined above but have exposed speculative developers to a number of risks. These are summarised in figure 2. These risks arise basically from the fact that as soon as a developer sub-contract a

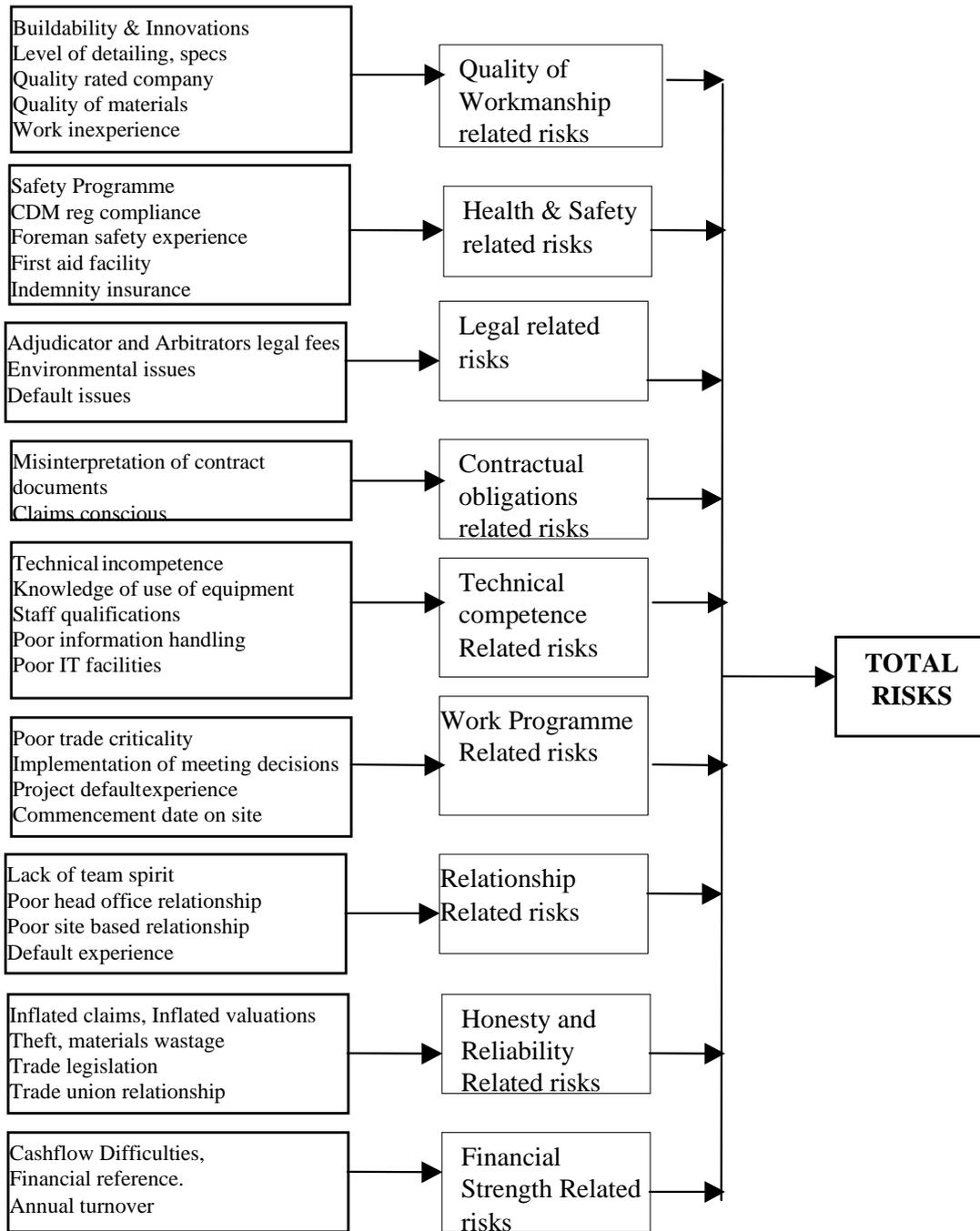
portion of the work, and sacrifice a certain amount of authority over that part of the project. For example, a sub-contractor who over-runs the time allocation can cause a speculative developer to rearrange his work, programme which would involve alteration of labour and material schedules and reallocation of plant to offset delay. Failure by a sub-contractor to complete his project or failure to pay bills may result in substantial delays to the project and consequent higher costs for both parties in the contract. Programme changes however slight are costly to the developer in time and effort. Also a delay caused by default or time overrun by a sub-contractor can result in the developer incurring liability for large liquidated damages which the developer may not be able to pass to the sub-contractor.

Also, allowances at the estimating stage for attendances on sub-contractors are normally priced under preliminary items and commonly take the form of percentage addition to sub-contract bids. This cost varies from one attendance to another and does not reflect the realistic budgeted costs against which actual costs were priced. The risks associated with all attendances are borne by the developer.

There is also the increased responsibility of control and co-ordination of work of several different trade sub-contractors on site as these sub-contractors may not have the resources to organise and control their different activities. The research revealed that the most common method used by speculative developers for controlling subcontractors involves withholding their payments until their work was satisfactorily completed to the required standards. The weak link is generally seen as the control of scheduling works, which are to be, carried out by the subcontractor who in most cases relies on personalities of both parties. As projects became more complex the responsibility for co-ordination of the sub-contractors scheduled work moved from the project development management to the subcontractor's contract manager.

Nevertheless, this method of withholding payments of subcontractors mostly by small-sized developers would leave the developer with more of problems where the subcontractor is made bankrupt as a result of the developer withholding the funding rightly due to the subcontractor.

As a result of this increased use of sub-contractors, and coupled with the present state in demand for prime site, best value and high quality of houses where competition for hard sells is intense and keen among speculative developers, sub-contractor's quotations have become increasingly important to the developer completion success. Many speculative developers accept and use bids from their sub-contractors for their housing projects only to find that during the actual construction process their performance incurs delays and costs due to a poorer than expected performance.



**Figure 2:** Speculative developer sub-contractors risk constructs

Many speculative developers have gone out of business because they used under priced quotes from sub-contractors to build houses, only to realise that they could not sell them at the going market prices. No matter how efficient a residential developer is in the work organisation, a poor performance of sub-contractors would increase the uncertainty and risks for the successful execution of the projects. Furthermore, the performance of sub-contractors affects the outcome and quality of work independently of the speculative developer competence. Sub-contractor's financial default may result in serious financial problems and time delays for the developer.

## CONCLUSION

What was evident during the interview was that speculative developers seem to allocate too little time for the subcontractors to complete the operations thus placing unnecessary pressure and introducing a risk of failure. This in its self makes the subcontractors feel that the risks to them are higher in comparison to the developer's risk. The essential contribution of the sub-contractor is to carry out specific construction work, bringing their own expert labour, materials and special plant and machinery. Through the sub-contractor, the developer may also avoid getting involved in certain linkages with other external bodies. Design work may be subcontracted to a design and consulting firm, which not only presents a completed design to the speculative developer but also solves the bureaucratic problems with authorities. Existing research work on control and risk management systems are developed based on mathematical laws, algorithm analysis and optimisation's programmes. In these models, the creative components of the construction control mechanics, risk management systems and the significance of empirical knowledge have not been fully incorporated. The risk of rising costs due to the subcontractor being able to accommodate any changes the customer may wish to make seems to be decreasing as the majority of developers stated that mutual agreement is always reached with their subcontractors. This is due to the general appreciation that any delay is going to cost both parties in the long run. Given the competitive nature of speculative housing projects and potential uncertainties on site, the use of sub-contractors may offer advantages in managing the risks and uncertainties associated with input transactions and production operations. Sub-contracting serve as a convenient buffer for the technical core at the site to local environmental conditions.

## REFERENCES

- Alhakami, A.S and Slovi P. (1994) A psychological study of attitudes. *Risk Analysis*, **14**(6):1085-96.
- Bauer, R.A. (1960) Consumer behaviour as risk taking. In Hancock, R.S. (Ed), *Dynamic Marketing for a changing world, Proceeding of the 43<sup>rd</sup> Conference of the American Marketing Association*, 389-98.
- Buckley J.W, Buckley M.H, Hung Fu C (1975) *Research methodology and business decisions*. National Association of Accounts and the Society of Industrial Accountants of Canada.
- Cairns, G. and Beech, N. (1999) User involvement in organisational decision-making. *Management Decision Journal*; **37**(1): 14-23; ISSN: 0025-1471
- Cunningham, S.M. (1967) The major dimensions of perceived risks. In Cox, D.F. (Ed.), *Risk Taking and Information Handling in Consumer Behaviour*, Graduate School of Business Administration, Harvard University Press, Boston, MA, 72-59.
- Dunn, M.G., Murphy, P.E. and Skelly, G.U. (1986) Research note: the influence of perceived risk on brand preference for supermarket products. *Journal of Retailing*, Summer, **62**(2): 104-22.
- Ho, Simon, S.M. and Victor, T.F. (1994) Customer' risk perceptions of electronic payment systems. *International Journal of Bank Marketing*, **12**(8): 26-38.
- Hughes, M.A. (1985) Perceived risk: an exploration of construct validity. In Crawford, J. and Garland, B. (Eds), *Proceedings, South Western Marketing Association Conference*, Denton, North Texas State University, TX, 46-9.

- Jasper, C.G. and Ouellette, S.J. (1994) Consumers' perception of risk and the purchase of apparel from catalogues. *Journal of Direct Marketing*, **8**(2): 20 –28.
- Kahneman, D. and Tversky, A. (1979) Prospect theory: an analysis of decision under uncertainty. *Econometrica*, **47**: 263-91.
- Knight, F.H. (1948) *Risk, Uncertainty and Profit*. Houghton-Mifflin, Boston, MA, 15-25, 120-239.
- Nicosia, F.M. (1969) Perceived risks, information, processing and consumer behaviour: a review article. *Journal of Business*, **6**, May: 160-64.
- Okoroh, M.I., Torrance, V.B., (1996) Refurbishment Projects Sub-Contractors Risk Management For Building Contractors . *Proceedings CIB/W65, International Symposium*, Glasgow, 28 Aug - 3 Sept.
- Oppenheim, A.N, (1966) *Questionnaire Design and Attitude Measurement*. Heinemann Educational Books, Oxford.
- Thompson, P.A. and Perry J.G. (ed.) (1992) *Engineering construction risks: a guide to project risk analysis and assessment- implications for project clients and project managers*. London: Thomas Telford.
- Vann, J.W. (1985) It's all in how you slice it: characteristics of outcome distribution models of perceived risk: a Review and proposed model. *Advertising Consumer*, **12**: 183-8