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Introduction

Why do companies diversify? Studies in the field of strategic management have identified numerous reasons for firm diversification as well as various categories of diversification. However, the literature has failed to provide a comprehensive view of the diversification process and the outcome of such diversification strategies. Indeed, numerous studies have been conducted to investigate the relationship between types of diversification and corresponding performance but no study has attempted to look at the above relationship in light of the specific motive(s) for such diversification. In fact, more than 30 years after Alfred Chandler's publication of *Strategy and Structure* no study has been able to determine any concrete relationship between the motive for diversification, the diversification strategy and the resulting performance arising from that strategy.

In the related field of acquisition, Steiner (1975) proposed that motivations for acquisitions were multivariate in nature. Though the majority of researchers agree with this observation, they have failed to incorporate the essence of this statement in their studies. Most of these researchers eventually regress back to explaining this phenomenon in terms of a single factor.

There are studies which strive to examine the relationships in this area at a macro level. These studies make useful contributions to the diversification literature by pointing out the importance of factors such as industry, business cycles, firm profile, firm history and market structures. The incorporation of all of the macro level factors are beyond the scope of this paper. However, factors relating to industry will be considered since they can be easily accommodated in the current research design. Also a simple quasi-experimental design will be used to negate the effects of business cycles and some firm-specific factors.

Research on motivations of diversification such as cost issues, risk-related issues, synergy and others have been very popular. Though these motives truly drive the diversification strategy, there is no clear link established between motives, diversification strategy and the resulting performance. The goal of this paper is to examine these relationships using a neural network which provides the ability to discern patterns not easily visible.

A research model is developed to examine the above relationships. It is known that companies attribute different degrees of importance to the various motives of diversification. The relative importance of these motives form the key to building the neural network.

Previous studies in Diversification

Firms are considered diversified if they are active in more than one business. It was Chandler (1962), who noted the movement from simple, single business firms to functional to multi-dimensional, based on historical analysis of major companies such as GM and DuPont. Since then Wrigley (1970) and Rumelt (1974) have given a respectable shape and direction to this area of research. This domain then proceeded to become one of the most controversial and researched areas in the field of strategic management.

Definition of Diversification

Ramanujam and Varadarajan (1989) observe, there is a considerable variation in the definition of diversification.

Ansoff (1957, 1965) focuses on the strategic act of diversification. He defines diversification as the entry into new markets with new products. Gort (1962), defined diversification as "heterogeneity of output" which focuses on the various markets targeted by the firm. Other researchers such as Pitt and Hopkins (1982), Kamien and Schwartz (1975) define diversification by the firm's degree of product and market involvement while Chandler (1962) views it as diversity of products.

Among the emerging definitions Dundas and Richardson (1980) view diversification as differences in the target market and researchers are now interpreting the Prahalad and Bettis (1986), concept of "dominant logic" as a new way of defining diversification. Montgomery (1982) has demonstrated the use of SIC codes to classify companies into diversification categories while Rumelt (1974) developed and tested ratios to classify companies into his diversification classification scheme.

Since Rumelt's (1974) classification scheme is very well recognized in diversification research, this paper will apply it classify the companies in the sample.

Classification of Diversification

Though research involving the definition of diversification remain popular, the focus of research has shifted to diversity classification schemes and the links between diversification types and performance.

In some ground breaking work, Chandler (1962), Wrigley (1970) and Rumelt (1974) developed and improved some diversification classification schemes, to adequately describe diversification profiles. Among these studies Rumelt (1974), presumably had the biggest impact. Rumelt's diversity classification scheme is very well accepted by researchers in this field and has stood the test of time.

To allow a better grasp of the data, the scope of this study is reduced by considering the four main diversification types proposed by Rumelt (1974) - *related, related linked, related constrained and unrelated*.

Motives for Diversification

Researchers have proposed a multitude of reasons for diversification. A firm's motive for diversification in all probability do not remain constant. The relative importance of each motive changes for each decision. These motives are crucial to this study and a detailed discussion is provided in the following paragraphs.

Dundas and Richardson (1980), viewed diversification as a result of market failure. Research based on this premise found that complexity stimulates single product or dominant product strategy; uncertainty stimulates related product and capital market failure leads to unrelated diversification to minimize risk. It is interesting to note that their findings were consistent with Rumelt's (1974), where the highest performing firms are those who are either dominant or related product firms.

In their 1979 book "Diversification Through Acquisition," Salter and Weinhold, proposed a different classification of diversification. According to them related diversification occurs when businesses share common functional skills and critical success factors or operate at different stages in the same commercial chain. They claimed that the primary motivation for any type of diversification was to reduce risk and develop synergy's.

Reid (1968), noted that there are different interests in doing mergers. He emphasized on what he termed as the two "major" stakeholders, which are the owner and the managers. He proposed that managers prefer to optimize returns and they achieve this through sales maximization and power. Meanwhile the owners or shareholders tend to maximize returns, and they are driven by profit maximization and wealth. These motives can also be considered to determine the need to diversify and the diversification strategy.

Rumelt (1974), proposed the diversification motivation which he labeled as the "escape paradigm". This term encompasses a host of factors related to the present environmental conditions of the firm. This includes things like competition, slow down in sales and similar type of situations which threaten the existence and profitability of the firm. In such a situation the firm may decide to diversify to overcome or "escape" that current environment.

In their study on confusions of terminology in diversification Reed and Luffman (1986), seemed to agree with Rumelt's "escape paradigm" motivation. They specifically pointed to survival and growth as key motivators to diversification.

Raphael and Livnat (1988) noted that there are two major motives in diversification - synergy and financial. They found that firms which implemented pure-financial diversification were characterized by more stable cash flows and were more highly leveraged. They also found that diversified firms generally had lower profits than undiversified firms.

In an extremely well designed study in 1991, Chatterjee and Wernerfelt (1991), explored the idea that firms diversify in part to utilize productive resources which are surplus to current operations. They suggested that excess physical resources, most knowledge based resources and external financial resources are all associated with more related diversification. Meanwhile internal financial resources were found to be associated with more unrelated diversification.

Though all the motives are not mutually exclusive and overlaps do exist it poses no threat to the outcome of the study since the questionnaire for the study is designed to account for the overlaps.

Measuring Outcome of Diversification Strategy

Keats (1990), states that in general, the economic performance of a business has been treated in terms of historical accounting measures. However, in more recent studies market based measures have been promoted and applied with a satisfactory level of reliability. But overall there exists very little conceptual work to facilitate researchers in selecting the right performance measures.

This issue is further complicated due to the difference in results when relatively new concepts such as risk adjusted return and capital market performance are employed (Dubofsky and Varadarajan, 1987; Michel and Shaked, 1984). The importance of the measurement issue must be appreciated since the use of measurement variables which capture different dimensions of the outcome leads to conflicting results and generate controversies.

There have been some useful studies conducted in this area of risk and performance. It was Bromiley (1991), who attempted to develop a model of the impact of past performance on risk taking and impact of risk taking on subsequent performance. He found that poor performance appeared to increase risk taking behavior and in turn risk taking resulted in further poor performance. Chatterjee and Lubatkin (1990), found that related mergers lowered the systematic risk of the bidding firms. Further review of this literature provides an array of alternatives for measuring outcome. In conclusion, we can easily gauge that in the measurement of performance both risk and return are valuable and should be considered.

In their 1989 study, Cool, Dierickx, and Jemison investigated the relationships between risk and return. This study reflected a trend in strategic management research towards giving increasing attention to the impact of firm strategy on risk-return outcomes. This provided the basis to using risk-return profiles for the measurement of diversification outcome in the present study.

To further support this decision Chang and Thomas (1989) made some major contributions. In their 1989 paper they examined the impact of diversification strategy on risk and return in diversified firms. In brief, they found that risk had a positive relationship with product market risk and diversification strategy risk

while it had a negative relationship with size and number of businesses. In the same study it was found that return had a positive association with product market return, diversification strategy return and size while the number of businesses was the only item which was negatively associated with return. Given these mixed results it strengthens the case to employing a risk-return profile for measuring the outcome of the diversification strategy.

Outcome Measurement Matrix

To measure performance of the diversification strategy in the current study a simple 2x2 risk-return (high-low combinations) matrix will be used to classify the outcome.

In this matrix a median split is used to determine the high and low quadrants of risk and return dimensions. A median split is used since it is unaffected by outliers. The medians for both dimensions will be determined after data is collected and will be applied towards both risk and return.

The popular measures of returns include ROI, ROE, ROA while risk is measured as systematic risk (beta) or as fluctuations in income streams. To avoid controversy it was decided to measure all of the above ratios and variables.

Research Model

The underlying theoretical assumption in this study is that motives for diversification determine the diversification strategy. The various combinations of motives and diversification strategy lead to certain risk-return profiles. The only link which provokes a minor controversy is between the motives for diversification and the diversification strategy (Link I in the Figure 1). This is because the firms past performance and prior diversification profile (Links III and IV in Figure 1) have an impact on the motive for diversification which may have the effect of reversing the direction of the relationship proposed between the motives (antecedent conditions) and the diversification strategy. However, this is not a major threat to the study and the relationship proposed in Figure 1 - the overall research model is well accepted.

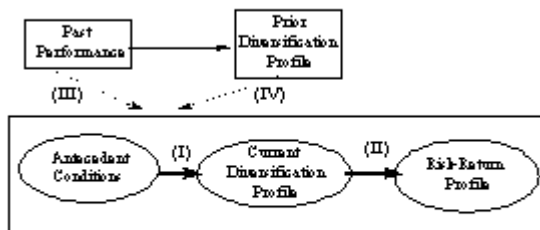


Figure 1: Diversification Assessment Research Model

Results of previous studies

Rumelt(1974), found that the categories developed by him did separate firms by performance. Dominant constrained and related constrained did the best in terms of risk-premium vs. return on invested capital. His data supported Chandler's (1962), structure follows strategy.

In a study of 80 firms, Bettis and Mahajan (1985) found that related diversification offers no guarantee of a favorable risk/return performance. However, it was extremely hard to achieve a favorable risk-return

performance through unrelated diversification. Meanwhile Chang and Thomas (1989) claimed that there is a limit to the degree of diversity that can be effectively managed.

Other studies by Lubatkin and Rogers (1989), found that related constrained did exhibit lower levels of systematic risk and higher levels of shareholder returns. Grant, Jammine and Thomas (1988) found that overall diversified firms performed better than specialized firms.

Studies by Hoskisson, Harrison and Dubovsky (1991) and Montgomery and Singh (1984), supported the notion that unrelated diversification had better betas and they yielded higher returns when market based returns were used for measurement.

Therefore the literature clearly shows the following: related constrained firms clearly perform the best, but inconsistencies exist in the results of unrelated and related diversification strategy. The confusion is mainly due to the type of measurement used in the study. Clearly market based measures tend to support unrelated diversifiers.

It must be kept in mind that all of the above studies looked at the relationship between the diversification strategy and the performance of that strategy (Link II in Figure 1) but the current study includes the motive behind that diversification strategy. therefore some of the above relationships may not hold.

References available upon request from author.