

Determinants of South Asian Entrepreneurial Growth in Britain: A Multivariate Analysis

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ABSTRACT. This paper aims to contribute to our understanding of the factors influencing South Asian entrepreneurial growth in Britain. It develops a multivariate model along the lines of small business economics but includes cultural and social variables. The theoretical model specified assumes that cultural factors have an augmenting effect on socio-economic factors. A distinction is also drawn between initial entrepreneurial characteristics and later expansion strategies used. The empirical model, based on the general-to-specific approach, can explain almost 60 per cent of entrepreneurial growth. The results suggest that moving away from a style of management based on immigrant culture has a positive impact on growth. This requires greater delegation of responsibilities to non-family employees. At the same time, strengthening links with the country of origin has a positive impact on growth. While the commitment to work hard at start-up is essential, human capital factors like the entrepreneur's educational attainment and employee training appear to be more crucial than financial resources in contributing to growth.

1. Introduction

The contribution of South Asian entrepreneurship to the revival of small businesses in the U.K. is gradually being recognised by policy makers and academics alike. The growth of South Asian entrepreneurship has generally been attributed to cultural factors like hard work, a trading ethic, and the reliance on family labour and ethnic community networks (see, for example, Ballard, 1994; Metcalf et al., 1996; Ram, 1994 and Werbner, 1990). However, there are some concerns that

cultural factors may also limit the growth of South Asian and other ethnic minority businesses and that only those entrepreneurs who have managed to cross these cultural barriers have survived and grown. It is therefore crucial to identify the factors that have enabled some Asian entrepreneurs to expand in the U.K. This paper aims to do so by using multivariate econometric analysis. The main purpose of such an exercise is to evaluate the contribution to growth of various economic, social and cultural factors.

In both theoretical and empirical studies of small business, issues such as the entry, survival and growth of firms are analysed. Broadly, there are two streams of literature that are relevant to this paper, one deals with small firms in general and the other focuses specifically on the performance of ethnic businesses. Both streams of literature have identified a large number of factors that influence the entry, survival and growth of small firms.

In the small business economics literature, firm survival and growth are explained in terms of the entrepreneur's ability to acquire skills through learning-by-doing and to innovate (Jovanovic, 1982; Audretsch, 1991). Firm growth is found to be related to firm size and to the age of the firm (Evans, 1987; Phillips and Kirchhoff, 1989). The impact of human capital investment on entrepreneurial survival and growth has been recognised by economic theory (Casson, 1991; Campbell, 1992) and found to be significant in some empirical research (Bates, 1990; Cressy, 1996). The employment potential of small firms has been studied by Hart and Oulton (1996), Storey (1994) and Westhead and Birley (1995). The Hart and Oulton model finds no influence of systematic factors on employment creation and hence attrib-

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utes the high employment potential of small firms to transitory factors. In contrast, Storey (1994) asserts that the growth and survival of small firms are influenced by the interaction between three sets of variables relating to the starting characteristics of the entrepreneur, the nature of the firm and strategy areas. Westhead and Birley (1995) find that owner-manager characteristics at start-up, including human capital factors, do not have much influence on employment growth. In fact, very few variables are significant in their multivariate analysis. The factors influencing sales growth of small firms have been studied by Reid (1993) who introduces several economic variables in his OLS estimation of firm growth.

In general, economic models of small business growth ignore cultural, social or managerial variables in their explanation of the determinants of growth (with the possible exception of Barkham, 1990). On the other hand, studies on the emergence, survival and growth of ethnic entrepreneurship are mostly sociological and strongly suggest that cultural and social factors are significant in explaining entrepreneurial growth (e.g., Mars and Ward, 1984; Metcalf et al., 1996; Waldinger et al., 1990). However, most empirical studies of ethnic business performance are based on qualitative or simple statistical methods (see Basu and Goswami, 1997, *hereforth*, BG 1997 for a more detailed literature review). There are very few studies that have extended the methodology of econometric analysis to incorporate cultural, social and managerial variables into multiple regression equations. It is this methodological gap that the present paper seeks to redress.

This paper aims to contribute to our understanding of the factors influencing South Asian entrepreneurial growth by developing a multiple regression model along the lines of small business economic theory but including socio-cultural, socio-economic and managerial variables in that model. In doing so, we hope to bring together two different strands of literature on entrepreneurial growth and to analyse the influence of economic as well as socio-cultural factors on South Asian entrepreneurial expansion in the U.K. in a more specific functional form.

2. Model and testable hypotheses

The theoretical model, which is used as a basis for econometric estimation in this paper, is developed along the lines of small business economic theory (see, for example, Evans, 1987; Jovanovic, 1982). It represents a generalised version of the Evans-Jovanovic type model as shown below:

$$y_i = f(x_{i1}, \dots, x_{ij}, \varepsilon_i) \quad (1)$$

where y_i refers to entrepreneurial growth in sales since start-up for the i th firm, i to the sample number ranging from 1 to N , the x_i s refer to the explanatory factors ranging from 1 to J and ε_i is a firm-specific stochastic variable, independent across firms.

Our model enriches the purely economic model of firm growth represented in Equation (1) by considering socio-economic as well as purely economic variables. Moreover, in the present context of analysing the growth of South Asian immigrant entrepreneurship, cultural forces are incorporated into the model. Following Waldinger et al. (1990), ethnic culture is interpreted as being the shared values, beliefs and interests of an ethnic group which are shaped by "common national background or migration experiences" (p. 33) and intra- as well as inter-group interactions in the host economy. Thus, the model presented in Equation (1) is refined by partitioning the explanatory variables into socio-economic and cultural variables as follows:

$$y_i = f(x_{i1}, \dots, x_{ij1}, x_{ij1+1}, \dots, x_{ij}, \varepsilon_i) \quad (2)$$

where $x_{i1}, \dots, x_{ij1}$ refer to socio-economic factors ranging from 1 to $J1$ and $x_{ij1+1}, \dots, x_{ij}$ refer to cultural factors ranging from $J1 + 1$ to J , for the i th firm.

At the time of business entry, the South Asian entrepreneur has just a notion of his competitive advantage stemming from cultural and socio-economic factors. Over the years, he/she learns how and how far to apply this advantage through the development of appropriate strategies for business success. It is therefore useful to distinguish between the impact of initial conditions prevailing at start-up and the subsequent business strategies adopted by the entrepreneur (see BG 1997; Storey, 1994). Accordingly, the explanatory variables in Equation (2) are further

partitioned into initial factors and expansion strategy variables, as represented below.

$$y_i = f(x_{i1}, \dots, x_{ij11}, x_{ij11+1}, \dots, x_{ij1}, x_{ij1+1}, \dots, x_{ij12}, x_{ij12+1}, \dots, x_{ij}, \varepsilon_i) \quad (3)$$

where $x_{i1}, \dots, x_{ij11}$ refers to initial socio-economic variables ranging from 1 to $J11$, $x_{ij11+1}, \dots, x_{ij1}$ to strategic socio-economic variables ranging from $J11 + 1$ to $J1$, $x_{ij1+1}, \dots, x_{ij12}$ to initial cultural factors ranging from $J1 + 1$ to $J12$, and $x_{ij12+1}, \dots, x_{ij}$ to strategic cultural variables ranging from $J12 + 1$ to J .

For the purposes of statistical analysis, Equation (3) can be transformed into a double log linear specification as follows:

$$\log y_i = \alpha + \sum_{j=1}^J \beta_j \log x_{ij} + u_i \quad (4)$$

where $u_i = \log \varepsilon_i$ ($i = 1, \dots, N$)

$$u_i \sim N(0, \sigma^2)$$

and $y_i = (Y_t/Y_s)^{1/(t-s)} - 1$

where Y_t refers to the i th firm's sales turnover in period t (which in most cases is 1996) and Y_s is the sales turnover in the first year after start-up, adjusted for inflation. The average gap between s and t is 19.5 years in our sample.

A double log specification has been used since it has a better fit for our data. Moreover, White's test shows that there is no heteroskedasticity in the double log specification. It has the added advantage in that the coefficients reflect elasticities.

Based on the above model and building on our previous research, the hypotheses to be tested may be stated as follows.

H1: Long-run success or growth depends on socio-economic as well as cultural factors.

H2: Long-run success or growth depends on the origins of entrepreneurship, that is, initial socio-economic and initial cultural factors, as well as on the entrepreneur's ability to implement appropriate expansion strategies which are determined by both socio-economic and cultural factors.

The classification of variables into socio-economic and socio-cultural influences is based on the broad guidelines offered by the definition of ethnic

culture referred to earlier combined with the findings of previous research on ethnic enterprises.

The variables included in the empirical analysis are classified into four blocks or categories as represented in Table I and listed in Table II. The tables indicate that this paper considers 34 explanatory variables: twenty initial variables and fourteen strategy variables which consist of both socio-economic and cultural factors. Table II also specifies the nature and measurement of the variables, that is, as to whether they are dummy variables or log variables. In general, variables with the prefix LN are logarithmic variables that have been transformed from continuous variables; variables with the prefix D are dummy variables. Most of the dummy variables were created by converting responses given on a five-point Likert-type scale (ranging from "very important" to "unimportant") into a binary response (important, i.e., at least of some importance = 1; otherwise = 0). In carrying out a log transformation of the dependent variable, we added 1 to all the sample values in order to overcome the problem of transforming zero and negative values.

Explanation of variables

The role of financial and human resource factors in influencing small firm survival and growth has been considered by some empirical studies such as those of Barkham (1990), Bates (1990), Cressey (1996), Reid (1993) and Westhead and Birley (1995). We introduce several socio-economic variables in our estimations, to analyse the impact of educational qualifications (estimated by the variable "GRADUATE"), previous business experience ("PRIOREX"), the amount of capital invested at start-up ("LNST"), the share of personal capital in starting the business ("LNSAVING"), the reliance on British banks for

TABLE I
Matrix of variable categories

Type of variable	Initial factors	Expansion strategy	Total
Socio-economic	10	7	17
Cultural	10	7	17
Total	20	14	34

TABLE II
Explanatory variables

Variables	Abbreviations	Nature of variable and its transformation
<i>Socio-economic variables: initial</i>		
Educational qualifications	GRADUATE	Dummy variable Degree holder = 1; otherwise = 0
Previous work experience	PRIOREX	Dummy variable Managerial/supervisory/business experience = 1; otherwise = 0
Start-up capital	LNST	Log of actual start-up capital
Dependence on U.K. bank at start-up	DUKBANK	Dummy variable Borrowed = 1; otherwise = 0
Personal savings invested at start-up	LNSAVING	Log of the percentage of personal savings in start-up capital; for zero value we introduced 1 in log transformation
Accountant's advice at start-up	NTACNT	Dummy variable Useful = 1; otherwise = 0
Banks' advice at start-up	NTBANK	Dummy variable Useful = 1; otherwise = 0
Type of business entered	DWSALE DRETAIL DMNF	Dummy variables Wholesale = 1; otherwise = 0 Retail = 1; otherwise = 0 Manufacturing = 1; otherwise = 0
<i>Cultural variables: initial</i>		
Country of origin	DORIGIN	Dummy variable From India = 1; otherwise = 0
Country of migration	DAFRICA	Dummy variable From East Africa = 1; otherwise = 0
Religion	DRELIGION	Dummy variable Non-Muslim = 1, otherwise = 0
Father's occupation	FATHER	Dummy variable Businessman/trader/storekeeper = 1; otherwise = 0
% relatives who are self-employed in U.K.	DUKSELF	Dummy variable 25% and above = 1; otherwise = 0
% relatives in same line of business	DINLINE	Dummy variable 25% and above = 1; otherwise = 0
Role of family network/advice at start-up	NTFAMILY	Dummy variable Important = 1; otherwise = 0
Community friends as information source at start-up	NTFRIENDS	Dummy variable Important = 0; otherwise = 0
Social marginalisation	DDISCRIM	Dummy variable If faced discrimination in labour market = 1; otherwise = 0
Hours worked at start-up	LNHOLD	Log of reported number of hours worked per week in the initial stages of the business
<i>Socio-econ. variables: expansion strategies</i>		
Business diversification	DIVERS	Dummy variable Diversified into more than one business = 1; otherwise = 0
Development of customer/supplier/distributor relations	DMKTRLN	Dummy variable If reported as a competitive strength = 1; otherwise = 0
Present hours worked by the entrepreneur	LNHRNEW	Log of reported number of hours worked per week at present

TABLE II (Continued)

Variables	Abbreviations	Nature of variable and its transformation
Employees training	DEMPTRN	Dummy variable If invested in employees training = 1; otherwise = 0
Importance of cash-flow for expansion finance	DCASH	Dummy variable Important = 1; otherwise = 0
Importance of reserves for expansion finance	DRESERVE	Dummy variable Important = 1; otherwise = 0
Importance of banks loans for expansion finance	DUKBKS	Dummy variable Important = 1; otherwise = 0
<i>Cultural variables: expansion strategy</i>		
Degree of family participation	DFWRKER	Dummy variable At least one family member participates = 1; otherwise = 0
Extent of co-ethnic employment	LNETHNIC	Log of the percentage of ethnic employment
Delegation of functions to non-family mgrs/supervisors	DOUDEL	Dummy variable Delegation of more than 1 function (of 6) = 1; otherwise = 0
Reliance on co-ethnic customers	LNCUSTOM	Log of the percentage of ethnic customers
Reliance on co-ethnic suppliers	LNSUPPLI	Log of the percentage of ethnic suppliers
Links with home country	DLINKS	Dummy variable Yes = 1; otherwise = 0
No. of years in business	LNYSR	Log of actual number of years

start-up finance ("DUKBANK"), and the type of business entered, whether wholesale ("DWSALE"), retail ("DRETAIL") or manufacturing ("DMNF"). These as well as other explanatory variables are defined in Table II. In addition, the influence of market information received by the entrepreneur at start-up from formal sources of information such as banks and accountants, is captured by the variables "NTBANK" and "NTACNT", respectively, which report the usefulness of these sources of advice.

Metcalf et al. (1996) find that business practices and attitudes among Indian, Pakistani and East African Asians are different. Their view, asserted earlier by Modood (1992), that Asian business success in Britain has primarily been an Indian (rather than Bangladeshi or Pakistani) success story, is built into our analysis using the variable "DORIGIN". We also incorporate the variable "DAFRICA" into our model to find any difference in growth experience between direct migrants from the Indian sub-continent and twice migrants from East Africa.

Ballard (1994), Metcalf et al. (1996), Rafiq (1992) and Werbner (1990) emphasise the influ-

ence of religion on business style in terms of shaping the nature of social networks, the family's role in business and community support for business. They find religion to have had both a positive and negative effect on growth although the comparative studies (Metcalf et al., 1996; Rafiq, 1992) suggest that Muslims have performed less well than non-Muslim businesses. These ideas are incorporated in our variable "DRELIGION".

The South Asian family system is patrilineal and this affects the attitude towards the family and the up-bringing of children in the sense that sons are oriented to continue in their fathers' business. Moreover, the objective of the family is to build up the business and also to pass on the heritage of the family to the next generation. Thus, the culture of the *bania* or business community encourages sons to acquire relevant skills to run the business. We incorporate this cultural effect in the variable "FATHER" (see Table II).

Light and Bonacich (1988) as well as Light and Bhachu (1993) point out that immigrants find immigration viable when they have a network of co-ethnic community support in the initial years of migration. Studies on the U.K. (Ballard, 1994;

Jones et al., 1992a; Werbner, 1990) show that South Asians have the strength of self-employed relatives supporting them in business start-up. Usually they develop mutually supportive chains to help in their business. The strength of these networks would depend on the proportion of relatives who are self-employed in Britain ("DUKSELF") and in the same line of business as the entrepreneur ("DINLINE").

It is often mentioned that immigrants in general and South Asians, in particular, have survived and grown in the host country through self-exploitation by expending long hours of work (Jones et al., 1994; Werbner, 1990). The role of hard work at the initial stages of the business was also emphasised by South Asian entrepreneurs at a recent conference on South Asian entrepreneurship in the U.K. held at Reading University in September 1997. We introduce this as the variable "LNHOLD" (hours worked at start-up).

Our model attempts to analyse the impact of expansion strategies on growth by incorporating proxies for several strategies. The strategy of diversifying into more than one type of business is captured by the variable "DIVERS". Diversification may be motivated by a desire to reduce costs and improve the utilisation of managerial capacity (Penrose, 1959) as well as to spread risks. The emphasis on building customer and supplier relations which might enhance competitive advantage and contribute to growth is captured by the variable "DMKTRLN". Financial decisions regarding the importance of alternative (internal and external) sources of finance for expansion are considered by the variables "DUKBKS", "DCASH" and "DRESERVE", defined in Table II.

The effect of delegation and efficiency of management on growth has been recognised by Penrose (1959) and Casson (1991). We find that delegation is based on conflicting choices for immigrant entrepreneurs. Delegation makes the skills of other persons, that is, other than the entrepreneur, available for the business. But delegation is effective only when there is single-mindedness among organisational members regarding the objectives of the organisation (Penrose, 1959). It also necessitates the entrepreneur's skills in building up trust and laying down standard operating procedures for decision making. Thirdly, better communication skills are

required to ensure effective delegation in a multicultural context. The inability of the South Asian entrepreneur to delegate functions to non-family members was acknowledged by the participants at the recent conference on South Asian entrepreneurship in the U.K. We considered it important to assess the importance of this influence through the variable "DOUTDEL". Finally, effective delegation necessitates competent and well-trained staff. This implies that the entrepreneur has to be willing to invest in employee training programmes. The variable "DEMPLTRN" incorporates the emphasis on such a strategy. Delegation is likely to result in the entrepreneur spending fewer hours a day on routine work releasing more time for business networking and development. We attempt to capture these changes by incorporating the variable "LNHRNEW". Given the traditional reluctance of South Asian entrepreneurs to delegate responsibilities, we consider DOUTDEL to be a cultural strategy variable.

Conventional belief about South Asian business practices and studies on the emergence of immigrant entrepreneurship point out that ethnic entrepreneurs usually operate in an 'enclave economy' in the sense that they depend on co-ethnic customers, co-ethnic suppliers, co-ethnic or family labour and a network of family or community friends for business information which enables them to survive and grow (Light and Bhachu, 1993; Metcalf et al., 1996; Ram, 1994; Waldinger et al., 1990; Werbner, 1990). The variables introduced to investigate these influences are "LNCUSTOM", "LNSUPPLI", "LNETHNIC", "DFWRKER", "NTFAMILY" and "NTFRIEND" which are defined in Table II.

In a previous paper (BG1997), we observed a number of differences in business styles between the early-starter and late-starter entrepreneur in the sense that the late starters, who started their businesses in Britain in the late 1970s or early 1980s, are less constrained by cultural or ethnic traditions. Consequently, we realise that the number of years in the business has been an important factor determining the style of business. Thus, the variable "LNYR" is introduced to analyse this influence.

3. Empirical analysis

This paper analyses the growth experience of a cross-section of 118 South Asian entrepreneurs of Indian, Pakistani, Bangladeshi and East African origin, who own medium- and larger-sized businesses based in the U.K. The sample is drawn from a database of 530 South Asian entrepreneurs who own medium- and large-sized businesses with minimum annual sales of £2 million or a minimum of 10 employees. In the absence of any single source of such data, the database was constructed by the authors from several published company data sources including Dunn and Bradstreet, FAME, ICC Directories for certain areas (like Middlesex and Manchester) and Ethnic Minority Directories as well lists of names obtained from Asian Business Associations and the High Commissions of India, Pakistan and Bangladesh. Both sales and employment were used to measure business size. Although, in theory, other characteristics like value added might be better measures of size, we were constrained by the data available to us. Also, while the sales and employment cut-offs used were arguably not optimal across all industries, they ensured that our database consisted of the larger South Asian-owned businesses and excluded smaller South Asian businesses (with less than 10 employees) which have been the focus of previous empirical studies of Asian enterprise in Britain (Jones et al., 1994; Metcalf et al., 1996; Ram, 1994).

In terms of their nature of business, the respondents are not only in the traditional retail and catering sectors but also in medium- and large-scale manufacturing (all employing 10 or more people), wholesaling, hotels, international trade, shipping, tourism, medical care, property and international commodity brokerage. Most (89 per cent) respondents are located in south-east England, in and around London, and the West Midlands, the two regions which have the highest concentration of South Asians in the U.K.

A majority of the entrepreneurs surveyed entered business in a small way with an initial capital of £10,000 or less and less than 3 employees. Nearly half established businesses in Britain between 1970 and 1982. Most (89 per cent) raised over 75 per cent of their start-up capital requirements from informal sources (see BG1997

for further details regarding the survey methodology and sample characteristics).

The econometric method followed in the estimation of the regression equations is that of a general-to-specific approach (associated with David Hendry and the London School of Economics). This involves starting with a very general model including all possible variables (the "kitchen sink" full regression) and then gradually eliminating the insignificant ones, in stages, in order to move to a simpler model.

The simplification search is carried out in two ways. The first method is to classify the variables into blocks depending on whether they represent socio-economic or cultural factors, and further, on whether they relate to initial conditions or expansion strategies. The significance of a block is investigated using the *F*-test by first estimating the regression without that block and then adding in the block of interest. This is equivalent to classifying variables into two blocks, *B* (the block of interest) and $\bar{B}$ (the block containing all remaining variables). To start with, we test:

$$\log y_i = [\text{block } \bar{B}] + u \quad (5a)$$

Then add *B* (the block of interest) to test the following equation:

$$\log y_i = [\text{block } \bar{B}] + [\text{block } B] + u \quad (5b)$$

The final *F* value, estimated in Equation (5b), compared with the *F* value of Equation (5a), is a measure of the significance of block "*B*". The purpose of using this method is to test the augmenting effect of the cultural variables and the effect of initial and strategic factors, respectively, in explaining entrepreneurial growth. Having obtained a broad picture of the significance of different blocks of variables from the first method, we use the second econometric method to identify the specific variables that are most significant in explaining growth.

In the second method, blocks are defined according to how significant (or insignificant) individual variables are. In other words, we investigate the marginal significance of individual variables and eliminate them in blocks, in stages, by gradually imposing more stringent selection criteria. In the present analysis, a simplification search has been carried out sequentially in 6 stages, with each simpler equation or model being

nested within the equation derived at the previous stage. Thus, to start with, all 34 variables – socio-economic and cultural – listed in Table I are included in the model based on Equation (4) above, as follows:

$$\log y_i = \alpha_0 + \beta_{i1}Dx_{i1} + \beta_{i2}Dx_{i2} + \beta_{i3} \log x_{i3} + \dots + \beta_{i34} \log x_{i34} + u_i \quad (6)$$

where D refers to a dummy variable and i ranges from 1 to N .

In stage 2, the “block” of variables found to be highly insignificant (with a P value of greater than 0.5) are eliminated. In stage 3, since many variables again become highly insignificant, those with P values above 0.7 are eliminated. In stage 4, a P value of 0.3 is used as the cut-off, and so on, until the final stage at which variables with P values exceeding 0.1 are eliminated. Diagnostic tests for heteroskedasticity and normality of disturbances have been carried out at each stage of the testing-down process.

4. Results and their interpretation

The results of the first estimation method, of considering the variables in blocks to estimate the enhancing effect of cultural variables and the impact of initial and strategic factors, are presented in Table III.

Table III shows that cultural factors make a significant contribution to long-term growth as

hypothesised in H1. Similarly, initial and strategic factors also contribute significantly to growth as hypothesised in H2.

In order to test the significance of individual variables and identify the most significant variables to include in the regression equation, we employ the second method of analysis based on the general-to-specific approach. The results of the OLS estimation based on this approach are presented in Table A1 in Appendix 1. The table presents the results obtained at the initial stage for the general model, which includes all 34 variables, and results at three intermediate stages of simplification. In all cases, the dependent variable is the log of sales growth between inception and the most recent accounting year for which sales figures were obtained during the sample survey. The results of White’s test and the Lagrange multiplier test for heteroskedasticity undertaken at the initial and final stages show that our sample is homoskedastic. The small size of the error terms at every stage of estimation suggests that multicollinearity among independent variables is not a problem in the present sample. This is confirmed by measuring VIF (variance inflation factors) ratios for the variables excluded at each stage of simplification. The VIF ratios are close to 1 which indicates that multicollinearity does not seem to be present among the explanatory variables included in our model.

The final equation, which presents a simpler model with only those variables that are found to

TABLE III
ANOVA test for blocks of variables

Source of variation	Degrees of freedom	Sum of squares	Mean square	F value	P value
a. Without cultural factors $\bar{B}$	17	0.4170	0.0245	2.73	0.0025
b. With cultural factors $\bar{B} + B$	34	0.7128	0.0210	4.02	0.0000
Residual of eqn b.	38	0.1980	0.0052		
a. Without initial variables $\bar{B}$	14	0.3621	0.0259	2.73	0.0037
b. With initial variables $\bar{B} + B$	34	0.7128	0.0210	4.02	0.0000
Residual of eqn b.	38	0.1980	0.0052		
a. Without strategic factors $\bar{B}$	20	0.4461	0.0223	2.295	0.0043
b. With strategic factors $\bar{B} + B$	34	0.7128	0.0210	4.02	0.0000
Residual of eqn b.	38	0.1980	0.0052		

Dependent variable in all three tests is log of compound annual growth rate of sales at constant prices.

be significant in the range of 0.00 to 10 per cent, is presented below:

$$y_i = 0.21 + 0.054\text{GRADUATE}^{**} - 0.010\text{LNST}^{*} \\ - 0.057\text{DUKBANK}^{**} + 0.034\text{DWSALE} \\ + 0.061\text{DEMP LTRN}^{***} \\ + 0.084\text{LNHOLD}^{***} - 0.047\text{FWRKER}^{*} \\ + 0.047\text{DOUTDEL}^{*} + 0.036\text{DLINKS}^{*} \\ - 0.138\text{LNYR}^{***} \quad (7)$$

F -value = 12.79***

$R^2 = 0.595$

$\bar{R}^2 = 0.549$

$N = 98$

(where * = significant at 5%; ** = significant at 1%; *** = significant at 0.1% level. The variable with no * is significant at 10%).

The above equation includes cultural and socio-economic variables drawn from both initial and strategic factors. OLS estimation in this case appears to be able to explain nearly 60 per cent of the variation in the dependent variable with an adjusted R^2 of 54.9 per cent. Furthermore, the absolute values of the coefficients in all cases lie between zero and one ($0 < |\beta| < 1$). This suggests that the functional relationship between the dependent variable and each individual explanatory variable, irrespective of whether it is positive or negative, is estimated to be concave. This implies that the marginal contribution of each explanatory factor to the growth process is subject to diminishing returns.

The equation shows that the entrepreneur's educational attainment (whether or not he or she is a degree holder) has a positive impact on growth, which confirms the findings of previous theoretical and empirical research (Casson, 1991; Bates, 1990; Basu, 1998; BG1997). On the other hand, the size of start-up capital is negatively related to growth. If the size of start-up capital can be regarded as a proxy for initial firm size, this suggests that firm size and entrepreneurial growth are inversely related which is consistent with the findings of some economic research (Evans, 1987; Audretch, 1991; Hart and Oulton, 1996). The dependence on U.K. bank loans is negatively related to growth (with a significantly high coefficient). It suggests that bank borrowing for business start-up was not beneficial to South Asian entrepreneurs. This was probably due to the short-

term perspective and risk averse attitude of most U.K. banks towards new business ventures which may have prevented entrepreneurs from taking long-term investment decisions necessary for growth. Together, these results imply that the quality of human resources, stemming from education, plays a much more critical role than the size of financial resources in determining long-run growth.

The nature of business has also had an impact on growth, with those in wholesale achieving higher growth rates compared to those owning manufacturing, retail or other types of businesses. This may be due to the fact many of those in wholesale distribution have expanded into international trading activities and some of them have vertically integrated into manufacturing. They have thereby attained higher levels of growth. On the other hand, those in retail businesses have found it much harder to cope with the increasing competitive threats posed by large domestic and foreign enterprises in the British retail sector.

Among the economic strategy variables, the human resource strategy variable relating to employees training is significant with a high coefficient. This indicates that the entrepreneurs who were prepared to invest in training their employees were better equipped to compete in the market. It is observable that both initial human resource (GRADUATE) and strategic human resource (DEMP LTRN) variables are significant.

Among the cultural factors, long hours of work expended during the initial stages of the business is highly significant and has a positive coefficient. This supports the assertion made by many Asian entrepreneurs and the findings of previous studies like Jones et al. (1994) which emphasise the role of hard work in contributing to Asian business survival and success.

The reliance on family labour, which is typical of South Asian business style, is inversely related to growth. At the same time, growth is positively influenced by the degree of delegation of functions to non-family members. These findings indicate that the entrepreneurs who moved away from the traditional South Asian management culture characterised by family participation and centralised control were more successful in achieving growth. This is further supported by the fact that growth is negatively influenced by the number of years

in business. This suggests that those who started their own business more recently – the “late starters” entrepreneurs who gained relevant work experience prior to business entry and relied less heavily on co-ethnic labour and co-ethnic custom (see details of characteristics in BG1997) – have been more successful in expanding their businesses. At the same time, growth is positively influenced by the extent of links with the country of origin. This suggests that the Asian entrepreneurs who have maintained or strengthened their business networks with their home country have gained from developing such networks.

As observed at the start of this section, the final equation contains ten variables of which five are cultural factors and five are socio-economic factors. Similarly, five variables relate to initial factors and five relate to strategic factors. What is interesting, however, is that four of the initial factors are socio-economic, namely, the entrepreneur’s educational background, size of start-up capital, the reliance on banks at start-up and the nature of business chosen. Only one initial cultural factor is significant, namely, the hours worked at start-up. On the other hand, four of the five strategy factors relate to the cultural dimension of strategy. These indicate that the more successful Asian entrepreneurs have moved away from the cultural style of business while retaining business links with their home country.

It is noticeable that factors like religion, twice-migration, father’s occupation, family and ethnic community networks, and labour market discrimination that are considered to be important in influencing the survival and growth of ethnic businesses by previous studies (Light and Bonacich, 1988; Waldinger et al., 1990; Werbner, 1990) are not significant in our empirical analysis.

6. Conclusion

This paper has presented a multivariate analysis of the factors contributing to the growth of South Asian entrepreneurship in Britain. The analysis is based on two econometric approaches, namely, by classifying variables into pre-determined blocks as well as using the general-to-specific approach to generate a simpler model. Its main purpose has been to augment the conventional economic model

of firm growth by introducing cultural and social forces in order to explain the process of ethnic, and more specifically South Asian, entrepreneurial growth. Our model has considered the interaction between cultural and economic variables at the time of business entry and in the formulation of expansion strategies.

We find that socio-economic variables, both initial and strategic, undoubtedly influence entrepreneurial growth. However, socio-economic factors alone cannot adequately explain the process of growth. The explanatory power of these variables is considerably enhanced by the incorporation of cultural variables. However, the cultural variables that are significant contributors to growth in our model differ from the cultural factors identified by previous studies of ethnic businesses. Although the emphasis on hard work has had a positive impact on growth, we find that the successful South Asian entrepreneurs have been able to delegate responsibilities to non-family members. Those who have moved away from the traditional cultural style of business and broken out of the ethnic enclave economy have succeeded in their entrepreneurial pursuits. At the same time, those who have maintained or strengthened their business links with their country of origin have performed better than others. The nonreliance on British banks as sources of start-up capital has had a positive influence on growth. In addition, the quality of human resources, as measured by the entrepreneur’s educational attainment and the decision to invest in employee training, made a significant positive impact on growth. The nature of business chosen has also affected the rate of subsequent growth, with those in wholesale achieving higher growth rates compared to those owning manufacturing, retail or other types of businesses.

These findings suggest that although some South Asian entrepreneurs may have started their business ventures on the basis of their cultural or ethnic resources and the opportunities arising from within their own ethnic communities, the successful entrepreneurs among them were able to take advantage of the positive aspects of their culture and develop successful expansion strategies. These strategies, in some cases, involved moving away from the cultural stereotype of the British South Asian entrepreneur and developing

the competence to operate in a wider – national as well as international – economy.

There are several implications of these findings. Firstly, the benefits of and need for education, employee training and delegation are re-emphasised by the multivariate analysis in this paper. Secondly, the traditional reliance of British South Asian businesses on the retail sector needs to be reduced in order to promote entrepreneurial survival and growth. Thirdly, the multi-cultural knowledge and economic information that South

Asian entrepreneurs possess through their two-country connections offer them business opportunities which they could effectively exploit. In addition, they may have to consider the need to further integrate themselves in the host community. This process of integration within the host country and across international borders will contribute towards their gaining a competitive edge in both the U.K. economy and the global marketplace.

Appendix I

TABLE A1
OLS estimations of regression coefficients (through stepwise elimination of most insignificant variables)

No.	Variables	Equation 7.1 (includes all variables)	Equation 7.2 (excludes variables with $P > 0.5$ in eqn. 7.1)	Equation 7.3 (excludes variables with $P > 0.7$ in eqn. 7.2)	Equation 7.4 (excludes variables with $P > 0.3$ in previous eqn. nested in 7.3)
	Constant	0.263 (1.26) $P = 0.22$	0.121 (0.56) $P = 0.89$	0.160 (0.91) $P = 0.37$	0.115 (0.68) $P = 0.50$
1.	GRADUATE	0.048 (2.10) $P = 0.04$	0.044 (1.94) $P = 0.06$	0.047 (2.29) $P = 0.02$	0.054 (2.79) $P = 0.007$
2.	PRIOREX	0.034 (1.41) $P = 0.17$	0.018 (0.76) $P = 0.44$	0.018 (0.91) $P = 0.37$	0.018 (0.93) $P = 0.35$
3.	LNST	-0.006 (-0.97) $P = 0.34$	-0.009 (-1.45) $P = 0.15$	-0.008 (-1.58) $P = 0.12$	-0.009 (-1.82) $P = 0.07$
4.	LNSAVING	0.013 (1.80) $P = 0.08$	0.012 (1.83) $P = 0.07$	0.011 (1.97) $P = 0.05$	0.005 (1.02) $P = 0.31$
5.	DUKBANK	-0.091 (-2.96) $P = 0.00$	-0.077 (-2.57) $P = 0.01$	-0.079 (-3.13) $P = 0.00$	-0.066 (-2.89) $P = 0.00$
6.	DWSALE	0.073 (2.27) $P = 0.03$	0.071 (2.43) $P = 0.02$	0.073 (2.88) $P = 0.005$	0.051 (2.11) $P = 0.04$
7.	DRETAIL	0.031 (0.85) $P = 0.40$	-0.002 (-0.09) $P = 0.93$		
8.	DMNF	0.047 (1.60) $P = 0.12$	0.011 (0.34) $P = 0.72$		
9.	NTACNT	-0.002 (-0.07) $P = 0.95$			
10.	NTBANK	0.032 (1.02) $P = 0.31$	0.040 (1.48) $P = 0.15$	0.039 (1.69) $P = 0.10$	0.017 (0.82) $P = 0.41$
11.	DIVERS	-0.072 (-2.20) $P = 0.03$	-0.036 (-1.17) $P = 0.24$	-0.035 (-1.45) $P = 0.15$	-0.021 (-0.88) $P = 0.38$
12.	DMKTRLN	0.039 (1.93) $P = 0.06$	0.005 (0.12) $P = 0.90$		
13.	LNHRNEW	-0.027 (-0.80) $P = 0.43$	0.011 (0.34) $P = 0.74$		
14.	DEMPTRN	0.041 (1.58) $P = 0.12$	0.040 (1.82) $P = 0.07$	0.040* (1.99) $P = 0.05$	0.540 (2.83) $P = 0.006$
15.	DCASH	-0.028 (-0.72) $P = 0.48$	-0.006 (-0.18) $P = 0.86$		

TABLE A1 (Continued)

No.	Variables	Equation 7.1 (includes all variables)	Equation 7.2 (excludes variables with $P > 0.5$ in eqn. 7.1)	Equation 7.3 (excludes variables with $P > 0.7$ in eqn. 7.2)	Equation 7.4 (excludes variables with $P > 0.3$ in previous eqn. nested in 7.3)
16.	DRESERVE	0.044 (0.96) $P = 0.34$	0.030 (0.65) $P = 0.51$	0.032 (0.74) $P = 0.46$	
17.	DUKBKS	0.010 (0.35) $P = 0.73$			
18.	DAFRICA	-0.01 (-0.05) $P = 0.96$			
19.	DORIGIN	-0.058 (-1.21) $P = 0.23$	0.009 (0.22) $P = 0.82$		
20.	DRELIGION	0.060 (1.56) $P = 0.13$	0.027 (0.78) $P = 0.44$	0.033 (1.44) $P = 0.16$	
21.	FATHER	0.022 (0.78) $P = 0.44$	-0.015 (-0.64) $P = 0.52$	-0.017 (-0.78) $P = 0.43$	
22.	DDISCRIM	-7.8×10^{-4} (-0.03) $P = 0.97$			
23.	DUKSELF	-0.004 (-0.13) $P = 0.89$			
24.	NTFAMILY	0.027 (1.23) $P = 0.23$	0.016 (0.73) $P = 0.47$	0.018 (0.86) $P = 0.39$	
25.	NTFRIENDS	-0.017 (-0.64) $P = 0.52$			
26.	LNHOLD	0.055 (1.82) $P = 0.08$	0.072 (2.42) $P = 0.02$	0.072 (2.66) $P = 0.01$	0.090 (3.52) $P = 0.001$
27.	DINLINE	0.028 (0.98) $P = 0.33$	-0.001 (-0.05) $P = 0.96$		
28.	DFWRKER	-0.025 (-0.74) $P = 0.46$	-0.038 (-1.24) $P = 0.21$	-0.039 (-1.52) $P = 0.13$	-0.045 (-2.00) $P = 0.05$
29.	LNETHNIC	0.001 (0.24) $P = 0.81$			
30.	DOUTDEL	0.021 (0.74) $P = 0.46$	0.053 (2.03) $P = 0.05$	0.050 (2.19) $P = 0.03$	0.052 (2.29) $P = 0.02$
31.	DLINKS	0.042 (1.86) $P = 0.07$	0.049 (2.18) $P = 0.03$	0.048 (2.32) $P = 0.02$	0.041 (2.13) $P = 0.04$
32.	LNCUSTOM	-0.007 (-1.42) $P = 0.16$	-0.004 (-1.08) $P = 0.28$	-0.005 (-1.45) $P = 0.15$	-0.004 (-1.12) $P = 0.27$
33.	LNSUPPLI	-0.002 (-0.52) $P = 0.61$			
34.	LNYSR	-0.131 (-4.94) $P = 0.00$	-0.145 (-5.35) $P = 0.00$	-0.146 (-5.91) $P = 0.00$	-0.130 (-5.47) $P = 0.00$
	R^2	0.782	0.663	0.662	0.598
	$\bar{R}^2$	0.588	0.516	0.568	0.521
	N	73	87	88	95
	F -value	4.02*** $P = 0.0000$	4.54*** $P = 0.0000$	7.11*** $P = 0.0000$	7.83*** $P = 0.0000$

Dependent variable is log of compound annual growth rate of sales at constant prices.

Figure in parenthesis is the t -value.

*** means significant at 0.001 level.

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