

RISK FACTORS INFLUENCING THE SURVIVAL OF STRATEGIC ALLIANCES: EVIDENCE FROM KENYA

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ABSTRACT

Between one-half and two-thirds of strategic alliances formed by Small and Medium Enterprises (SMEs) fail to realize their purpose due to unmitigated risk factors. Most studies on strategic alliances and associated risks focus on developed economies. Using the Kenyan case, this study sheds light on risk factors influencing the survival of SME alliances in the Sub-Saharan Africa (SSA). This study sourced primary data from 120 SMEs involved in strategic alliances. Quantitative and qualitative techniques were used to analyze the data. Results indicate that the survival of SME alliances is a function of factors including the proportion of skilled staff, explaining up to 8.7 percent of variance, transportation cost (8.1%), information sharing (7.5%), level of trust among partners (6.6%) and integration of computers to support business activities (5.5%). The results show that SME strategic alliances remain risky ventures, requiring a concerted effort of all stakeholders to initiate appropriate mitigative measures to avert economic losses resulting from alliance failure. The study underscores the need for SSA governments to provide tax incentives, improve infrastructure and explore cheaper energy alternatives.

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KEYWORDS: Risk, Risk Factors, Small and Medium Enterprises, Alliance Survival, Alliance Failure

INTRODUCTION

The role of SMEs in employment creation, poverty reduction and industrialization appears in economic blue prints and empirical research world over (Abaka & Mayer, 1994; Atieno, 2001). According to Olutunla and Obamuyi (2008), SMEs provide more employment per unit of capital investment than large-scale enterprises. In Kenya, recent statistics show that SMEs create employment for about 70 percent of the national workforce, contributing up to 22 percent of Gross Domestic Products (GDP) (Mbithi & Mainga, 2006; Atieno, 2009). However, globalization forces, technological advancement and competition constantly threaten the contribution of SMEs in national development. To secure their survival, SMEs are increasingly initiating strategic alliances, which enable them to reduce production costs, acquire knowledge, as well as access new technology, financial resources and labour (Das & Teng, 2001; Ireland, Hitt & Vaidyanath, 2002; Li & Malin, 2009; Alders, van Liere, Berendsen & Ineke, 2010).

Even though strategic alliances have been attractive to SMEs, between 50 and 60 percent often, fail to realize the expectations of their crafters (Reuer, 1999; Das & Teng, 2001; Alders *et al.*, 2010). High failure rates of SME alliances have been associated with various forms of risk factors, arising from inter-firm relations, firm capacity and firm-environment interaction (Das & Teng, 1998; 2001; Ireland, *et al.*, 2002; Chi, 2005; Li & Malin, 2009; Alders *et al.*, 2010; Long & Zhai, 2010). Most empirical studies on strategic alliances and inherent risks focus on developed economies of Western Europe, North America, Australia and South-East Asia. Crotts and Wilson (2005) noted that although risks form a crucial dimension for understanding strategic alliances, the subject is yet to receive adequate attention in academic research, particularly in developing economies.

This study determines the influence of risk factors on the intention of alliance partners to stay on or pull out of their alliances; the study also assesses mitigative measures to enhance the survival of SME strategic

alliances. The paper has four key sections, including literature review, methodology, results and discussions, as well as conclusions, which culminates to recommendations and direction for further research.

LITERATURE REVIEW

In management, a risk is an unanticipated negative variation between set targets and actual achievement (Kogut, 1988; Das & Teng, 1998; 2001). According to Miller (1992), the concept of risk refers to factors that are either internal or external to alliance firms, which impede the realization of targets. Influenced by Miller's thoughts, Das and Teng (1998) came up with two broad categories of risks within the context of strategic alliances, viz. relational and performance.

Relational and Performance Risks

Relational risk is concerned with poor or non-adherence of alliance partners to documented regulations governing their behaviors and relations (Das & Teng, 1999; 2001; Elmuti & Kathawala, 2001). Perpetuation of opportunistic tendencies such as dishonesty, shirking, distortion of information, as well as poaching partners' skills, clients or personnel are manifestations of relational risk (Das & Teng, 1999; 2001; Elmuti & Kathawala, 2001; Alders *et al.*, 2010; Long & Zhai, 2010). Das and Teng (2001) assert that relational risk is inevitable in strategic alliances, but emphasize the importance of 'trust' and 'control' for strategic alliances to survive and realize their purpose. Whereas 'trust' is a means to reducing perceived risks, control is an active measure taken to reduce such risks. Similarly, Long and Zhai (2010) contend that trust and commitment form the foundation of strategic alliances, manifested through information sharing, technology; as well as equitable sharing of costs and profits.

Performance risk is the probability that an alliance may fail to achieve its targets even when partners commit themselves fully. Performance risk is a function of institutional capacity factors such as staff competency, capitalization level and integration of ICT; as well as business environmental factors such as competition, taxation, cost of raw materials, transportation and energy, among others (Das & Teng, 1998; 2001; Li & Malin, 2009; Alders *et al.*, 2010). Strategic alliances can distribute performance risk among partners, for instance, by sharing expenditure, resources, skills and technology (Das & Teng, 2001). Thus, the synergy created by strategic alliances is a partial remedy for performance risk. However, not all strategic alliances have the potential to create synergy, as some partners may be deficient in terms of institutional capacity, leading to poor performance (Das & Teng, 1998).

Unlike relational risk, performance risk exists in all business enterprises, irrespective of their involvement in strategic alliances. Besides, the two risk types are independent and have no specific pattern of correlation. Hence, alliance partners can enjoy good relations despite poor financial performance (Das & Teng, 1998; 2001; Alders *et al.*, 2010).

Resource-Based View of Strategic Alliances

The Resource Dependency Theory (RDT) postulates that a firm's competitive advantage is founded on its internally-available resources, including tangible assets such as premises, machinery, human and financial resources; as well as intangible assets such as technology, skills, managerial expertise and reputation, among others (Barney, 1991; Grant, 1995; Das & Teng, 1998). Das and Teng (1998) categorize firm's internal resources into four, viz. financial, technological, physical and managerial. Combinations of the four broad resource types are indispensable for firms to build competitive advantage (Chi, 1994). However, most firms are not self-sufficient; those experiencing a shortage of any form of strategic resources are likely to reach out to other firms holding complementary resources to secure their survival (Barney, 1991; Das & Teng, 1998; 2001). Strategic alliances permit firms to access resources, which they

do not possess, but which are necessary for its performance and survival. However, firms can only realize synergy when they seek to combine complementary rather than supplementary resources (Harrison, Hitt, Hoskisson and Ireland, 1991).

METHODOLOGY

I sourced data from 120 SMEs involved in strategic alliances for at least 3 years. Inclusion in the sample was based on availability of complete accounting records for the immediate trading period; willingness of managers/owners to avail such financial records; and acceptance to be interviewed. I measured relational risk in terms of the willingness of partners to share information and share expenditure, extent of staff bonding and the level of trust between alliance partners. I also measured performance risk in terms of firm size, ownership structure and integration of computers to support business activities; as well as level of demand for alliance products/services, taxation level, transportation and energy costs. In addition, I measured intermediate risk factors such as prevalence of conflict between partners, availability of conflict resolution mechanisms, alliance age, change in revenue, type of business activities and the location of premises.

Bivariate analysis generated cross-tabulations with Chi-square (χ^2) statistic, while at the multivariate level; I applied binary logistic regression to determine the influence of individual risk factors on the alliance survival. The model takes the following form: -

$$\text{Logit}[\theta(Y)] = \log \left[\frac{\theta(Y)}{1-\theta(Y)} \right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots + \beta_i X_i + \varepsilon \quad (1)$$

Where: Y = the predicted variable (*alliance survival*); $\theta(Y)$ = the probability of an SME staying on; $one-\theta(Y)$ = the probability of an SME pulling out; α = constant term of the equation; $\beta_1, \beta_2 \dots \beta_i$ = regression coefficients associated with independent variables; $X_1, X_2 \dots X_i$ = independent variables and ε = the error term.

Qualitative data analysis involved transcription of responses, creating thematic nodes and systematic interpretation. Publications such as Nachmias and Nachmias (1996), as well as Bryman and Cramer (1997) provide details of the design and approaches used in this study.

RESULTS AND DISCUSSIONS

Various types of organizations, including competitors (56%), customers (16%), suppliers (12%), financial institutions (8%), educational institutions (5%) and government research institutions (3%), initiated strategic alliances. In addition, up to 97 (80.8%) SMEs were collaborating with only one partner, 22 (18.3%) had two partners, while one SME had formed an alliance with more than two partners. This study focused on the most recently formed strategic alliances, aged at least 3 years. Furthermore, strategic alliances came into existence to serve various purposes, as listed in Table 1 below.

The longevity of strategic alliances is an important dimension of how well they are likely to achieve the expectations of collaborating firms. Alliances that fail to live up to the expected duration are less likely to be successful in realizing the purpose for which they existed. In view of this, 55 percent of the 120 SMEs intended to remain in their alliances for at least 5 years, while 45 percent intended to pull out within the same duration.

Table 1: Reasons for Engaging in Strategic Alliances

VALID RESPONSES	FREQUENCY	PERCENT OF CASES
Improve revenue	71	59.2
Access technology	11	9.2
Raise capital	79	65.8
Share distribution channels	29	24.2
Ensure steady flow of raw materials/supplies	43	35.8
Counter competition from larger firms	54	45.0
Reduce competition	22	18.3
Train staff	17	14.2
Develop more efficient production methods	11	9.2
TOTAL	337	280.8

This table shows the reasons why SMEs in Kisumu District, Kenya engaged in strategic alliances. It is a multiple response table, showing frequency distribution and corresponding percent of cases, which in this case, was 120 SME managers/owners. The main reasons why SMEs engaged in strategic alliances included the need to raise capital, improve revenue, counter competition from larger firms, ensure a steady flow of raw materials or supplies, and share marketing distribution channels.

Bivariate Analysis Results

Bivariate analysis determined the presence or lack of a significant relationship between alliance survival and selected risk factors. The results presented in Table 2 below, indicate that the survival of SME alliances was significantly associated with risk factors such as information sharing, sharing expenditure, extent of staff bonding and level of trust.

Table 2: Association between Alliance Survival and Risk Factors

RISK TYPE	RISK FACTORS	SUMMARY OF CHI SQUARE (χ^2) RESULTS		
		CALCULATED χ^2	DF	SIG.
Relational	Information sharing	6.742	2	0.034**
	Sharing expenditure	24.297	2	0.000***
	Extent of staff bonding	7.495	2	0.024**
	Level of trust	10.020	2	0.007***
Performance	Firm size	14.123	6	0.028**
	Ownership structure	8.243	2	0.016**
	Integration of computers	6.810	1	0.009***
	Proportion of skilled staff	16.186	5	0.006***
	Demand level	10.549	2	0.005***
	Taxation level	8.952	2	0.011**
	Transportation cost	9.001	2	0.011**
Intermediate	Energy cost	6.059	2	0.048**
	Conflict prevalence	11.870	2	0.003***
	Conflict resolution mechanism	7.129	1	0.004***
	Alliance age	2.081	3	0.556
	Change in revenue	58.204	2	0.000***
	Type of business activities	15.982	11	0.142
	Location of premises	0.825	1	0.364

*This table presents a summary of χ^2 results, calculated from cross tabulation analysis between alliance survival and risk factors. The column labeled CALCULATED χ^2 is comparable to table χ^2 values. DF stands for degrees of freedom, while SIG. indicates the statistical significance of association between the risk factors and alliance survival. ***, ** and * shows the level of significance at 1, 5 and 10 percent respectively.*

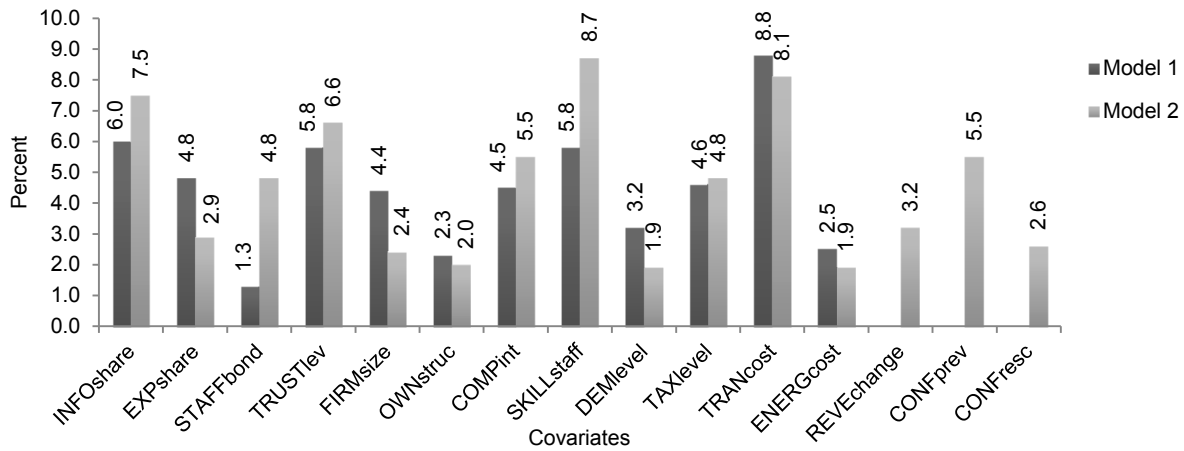
The survival of SME alliances was also significantly associated with performance risk factors such as firm size, ownership structure, integration of computers, proportion of skilled staff, level of demand, taxation level, transport cost and energy cost; as well as intermediate factors, such as frequency of conflict, availability of a conflict resolution mechanisms and revenue change.

Multivariate Analysis Results

Appendix A presents the results on odds ratios or $Exp(\beta)$ and partial regression co-efficients. The predictive power of binary logistic regression models is indicated by the -2Log Likelihood (-2LL) statistic. Each model generates an initial -2LL (chance model); the unit change in the value of -2LL

statistic each time a covariate is added represents the proportion of variance in the dependent variable, explained by that covariate. Figure one shows the covariates included in models one and two, and the proportion of variance in the survival of SME alliances accounted for by each.

Figure 1: Proportion of Variance in Alliance Survival Explained by Risk Factors



The proportion of variance accounted for by each risk factor (covariate) results from the unit change in $-2LL$ statistic corresponding with the addition of each covariate. INFOshare stands for information sharing between partners; EXPshare = expenditure sharing; STAFFbond = extent to which staff of alliance partners had bonded. TRUSTlev = level of trust among alliance partners; FIRMSize = number of paid workers; OWNstruc = ownership structure; COMPint = integration of computers; and SKILLstaff = proportion of skilled staff. DEMlevel = demand level for products offered by an alliance; TAXlevel = taxation level; TRANcost = transportation cost; ENERGcost = energy cost; REVEchange = change in revenue; CONFprev = prevalence of conflict, and CONFresc = availability of conflict resolution committee.

In model one, the willingness of partners to share information accounted for up to 6 percent of variance in alliance survival. However, when the model adjusts to include intermediate covariates, the proportion of variance accounted for by the covariate scales-up to 7.5 percent. Improvement in information sharing reduced the likelihood of partners pulling out, which in turn, increased the odds of alliance survival. However, most firms would not be free to share their critical information such as product formulae or marketing secrets, without guaranteed security of such information. Besides, protectiveness of information only reinforces distrust, which in turn, may constrain alliance survival.

The willingness of partners to share expenditure accounted for 4.8 percent of variance in alliance survival, as indicated by model one. However, the inclusion of intermediate variables reduced the proportion of variance accounted for by the risk factor to 2.9 percent. An increasing willingness of partners to share expenditure reduces the likelihood of SMEs pulling out; thus, increases the odds of alliance survival. Expenditure sharing is particularly important for enhancing commitment and SME managers/owners should consider it before initiating alliances.

Model two shows that the extent of staff bonding explained up to 4.8 percent, up from 1.3 percent in model one. As bonding improves among staff of alliance partners, the likelihood of SMEs pulling out reduces. Thus, the higher the bonding among staff, the better the survival chance of such alliances, and vice versa. Poor bonding among staff may be result from factors such as negative attitudes, gossip, stigmatization and competition. It must be noted that strategic alliances bring with it sudden changes, which may disrupt usual work routines. Establishing a strategic alliance is process of change that is associated with anxiety and uncertainty. Effective management of change is critical for helping staff of alliance partners to bond and work as a team, where members treat each other with respect and where members feel secure, respected and trusted. However, starting and sustaining change among staff members requires creative leadership that is able to inspire people through positive behaviour, ethics and

values. Informal spheres where staff members can interact freely to water down communication and ideological ‘glass walls’ may expedite staff bonding.

Furthermore, Table 3 below summarizes the proportion of variance in the survival of SME strategic alliance, as explained by other covariates, including the level of trust; firm size, ownership structure, level of demand for alliance products/services, taxation level, transport cost and cost of energy.

Table 3: Covariates and Proportion of Variance in Alliance Survival

COVARIATES	MODEL 1	MODEL 2
Information sharing	6.0	7.5
Expenditure sharing	4.8	2.9
Staff bonding	1.3	4.8
Level of trust	5.8	6.6
Firm size	4.4	2.4
Ownership structure	2.3	2.0
Integration of computers	4.5	5.5
Proportion of skilled staff	5.8	8.7
Demand level for alliance products/services	3.2	1.9
Taxation level	4.6	4.8
Transportation cost	8.8	8.1
Energy cost	2.5	1.9
Change in revenue	-	3.2
Prevalence of conflict	-	5.5
Conflict resolution committee	-	2.6

This table shows the proportion of variance in the survival of SME strategic alliances, explained by each covariate. Model one includes relational and performance risk factors only (independent variables). However, model two incorporates both independent and intermediate variables.

The level of trust between strategic partners explained up to 6.6 percent of variance in alliance survival; up from 5.8 percent in model one. An increasing level of trust among alliance partners directly corresponded with the likelihood of SMEs pulling out. In other words, the higher the level of trust, the better the survival chance for such alliances, and vice versa. The challenge faced by alliance partners is how to nurture and sustain trust amongst themselves. In this regard, SME managers/owners face the challenge of balancing between alliance and firm-specific interests, without compromising trust. Opportunistic behaviors are the most common threats to trust levels between or among alliance partners, which in turn, reduces the odds of alliance survival.

Firm size, in terms of the number of paid workers, accounted for 4.4 percent of variance in alliance survival. However, when the model adjusts for intermediate variables, the proportion of variance accounted for in the survival of alliances reduced marginally to 2.4 percent. An increase in staffing level resulted to a stronger institutional capacity, which in turn, improved the odds of alliance survival. Although staffing level is an important risk factor influencing the odds of alliance survival in Kenya, other key parameters such as performance management, training and welfare remain critical for enhancing institutional capacity. Moreover, the proportion of skilled staff explained up to 8.7 percent of variance in alliance survival; up from 5.8 percent in model one. As the proportion of skilled staff increases, the level of performance risk reduces and so is the likelihood of SMEs pulling out of their alliances. Hence, the higher the proportion of skilled staff, the better the odds of alliance survival.

In model two, ownership structure explained up to 2 percent of variance in alliance survival; down from 2.3 percent in model one. Alliances crafted by sole proprietors had a lower survival chance than alliances involving limited companies, the main separating factors being capitalization and staffing level, as well as systems, structures and physical resource capacity. Hence, SMEs are better-off establishing strategic alliances with limited companies than sole proprietorships. Furthermore, SMEs should consider initiating alliances with firms that have integrated computers in their business activities. Model two shows that

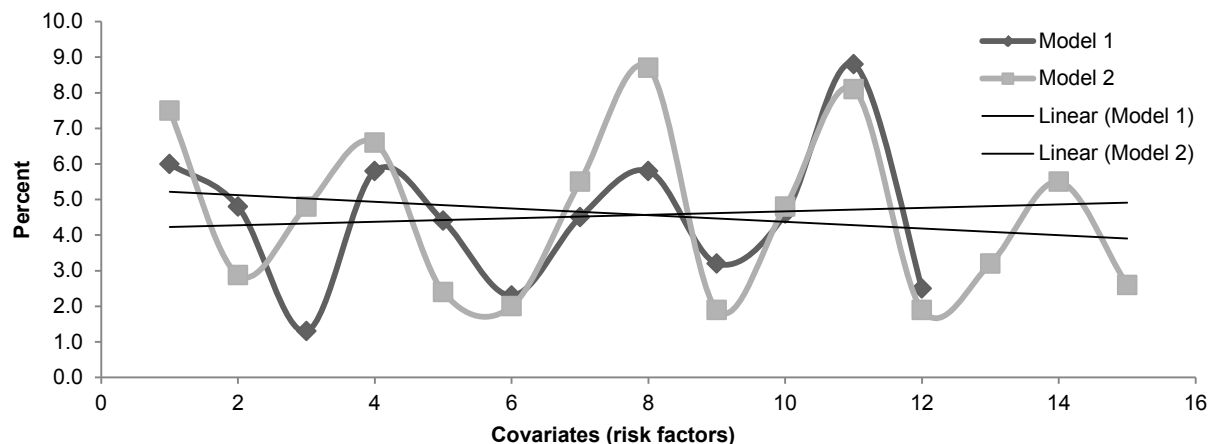
integration of computers accounted for 5.5 percent of variance in alliance survival. The initiative reduced performance risk, and by extension, increased the odds of alliance survival.

Furthermore, the level of demand for alliance products/services accounted for 1.9 percent of variance in alliance survival. An increasing level of demand inversely corresponds with the likelihood of SMEs pulling out and directly corresponds with the odds of alliance survival. Sustaining demand for alliance products/services through diversified marketing channels remains a critical option that SME alliances should consider to improve their survival chance. In addition, taxation level accounted for 4.8 percent of variance – a marginal increase from 4.6 percent in model one. The higher the perceived taxation level the lower the odds of alliance survival. Nevertheless, the perceived level of taxation depends on the extent to which products/services have established in the market. An established product/service is likely to defray taxation charges more than one that is yet to establish. Although SSA governments bear the responsibility of tax regulation, SME alliances should focus on establishing their products/services to improve returns; thus, lighten taxation burden and improve alliance survival chance.

In model one, transportation cost accounted for 8.8 percent of variance in alliance survival. However, this scaled down to 8.1 percent in model two. Increment in transportation cost resulted to a higher level of performance risk, which in turn, reduced the survival chance for SME alliances. Transportation cost remains a critical element influencing the survival of SME alliances in Kenya.

Model two shows that energy cost accounted for up to 1.9 percent of variance in alliance survival, down from 2.5 percent. As energy cost escalates, performance risks also increase, which in turn, reduces the odds of alliance survival. Plotting the covariates on a scatter-gram facilitates determination of the models' explanatory power, as indicated in figure two below.

Figure 2: Distribution of Covariates on a Scatter-gram



This figure shows the distribution of covariates on a scatter-gram, which was also used to generate best-fit lines and co-efficient of determination R^2 , representing the predictive power of the model. The linear equation for model one is $y=0.049x + 4.181$, with $R^2=0.540$. For model two, the resultant linear equation was $y=0.093x + 5.309$, with $R^2= 0.684$.

The scatter-gram also provides best-fit lines and co-efficients of determination (R^2). In this regard, model one explained up to 54 percent of variance in the survival of SME alliances, while model two, which incorporated intermediate factors, predicted up to 68.4 percent of variance. This implies that up to 31.6 percent of variance may be due to other variables not included in model two.

Risk Management Practices

Table 4 below, presents the measures initiated by SMEs to manage as well as cope with relational and performance risks. In this regard, 73 percent of the respondents cited legalization as the most important mitigative measure. Legalization of SME strategic alliances came through contracts and memoranda of understanding; spelling out terms of engagement; responsibility, liability and profit sharing; as well as frequency of review meetings and follow-up mechanisms. Legalization of alliances was particularly useful in enhancing commitment among partners as well as regulating opportunistic behaviors. However, non-adherence to documented agreements by some partners was still a cause for concern. Consequently, up to 45 percent of the firms intended to pull out of their alliances.

Table 4: Risk Management Practices

VALID RESPONSES	FREQUENCY	PERCENT OF CASES
Diversification	18	15.0
Partner complementarity	27	22.5
Legalization of alliances	88	73.3
Regular review meetings	60	50.0
Cost-sharing	51	42.5
Joint planning	64	53.3
Competition reduction	14	11.7
Special management structures	21	17.5
Conflict resolution mechanisms	37	30.8
TOTAL	380	316.7

This table shows measures initiated by SMEs involved in strategic alliances to mitigate or cope with relational and performance risks. This is a multiple response table, showing the frequency distribution of responses and corresponding percent of cases. The study involved 120 SME managers/owners.

Furthermore, 53 percent mentioned joint planning as the key strategy used to manage risks by watering down ideological ‘glass walls’, as well as filling up ideological gaps. Joint planning entailed activities such risk assessment, market surveys as well as analysis of strengths, weaknesses, opportunities and threats (SWOT). Joint planning also included projection of demand levels, market prices, market growth and revenues. Through joint planning effective financial control and reporting systems were established and so were exit strategies. Up to 50 percent of the firms initiated regular review meetings to share their experiences, monitor progress as well as address emerging risks to enhance the odds of alliance survival and excellence.

About 31 percent of the alliances established conflict resolution committees to address all forms of dispute and enforce behavior control. In the opinion of SME managers/owners, conflict resolution committees were most effective in curbing opportunistic behaviors among errant alliance partners. Partner complementarity was also one of the mitigative strategies against risks. In this regard, 23 percent of the SMEs were keen to select partners who were complementary in terms of resources, skills and technology to avoid overlaps or gaps. However, when requested to rate their satisfaction with their choice of partners, up to 67 percent expressed dissatisfaction, the reason being the difficulty of finding complementary partners among SMEs.

In addition, 18 percent of the alliances created special management structures run by a team of skilled and experienced staff selected by both partners. Besides, 15 percent of the SMEs initiated alliances with multiple partners to diversify risks by sharing the cost of projects, considered to be of high risk. Such alliances were instrumental in lowering a firm’s risk exposure. Finally, up to 12 percent of the alliances employed various measures to avoid competition between/amongst partners, including giving away some market areas, demarcating market boundaries, selling each other’s products and coming up with jointly branded products.

CONCLUSIONS

The goal of this study was to determine risk factors influencing the intention of strategic alliance partners to stay on or pull out of their alliances, as well as assess the mitigative measures in place to reduce the risks of alliance failure. To fulfill this goal, I obtained primary data from 120 SMEs involved in strategic alliances for at least 3 years. Bivariate analysis generated cross-tabulations with χ^2 statistic, while multivariate analysis obtained odds ratios and -2LL statistic. The analysis of qualitative data involved transcription, creating thematic nodes, followed by systematic interpretation.

The study found that the survival of SME alliances was a function of factors such as proportion of skilled staff, which explained up to 8.7 percent of variance in alliance survival, transportation cost (8.1%), information sharing (7.5%), level of trust among partners (6.6%) and integration of computers to support business activities (5.5%). In addition, model one explained up to 54 percent of variance in alliance survival, while model two, which incorporated intermediate factors, predicted up to 68.4 percent of variance.

The study concludes by noting that although strategic alliances are critical for the survival of SMEs, they remain risky ventures that require adequate preparation in terms of appropriate mitigative measures to avert losses that may occur in the event of failure. The failure of such alliances portends far-reaching economic consequences, not only for the firms involved, but also for SSA economies. In addition, SSA governments bear a big chunk of responsibility in mitigating risk factors emanating from the business environment, particularly, taxation, infrastructure and alternative energy sources.

In view of this, alliance SMEs should initiate a number of activities to reduce the risk of failure: firstly, they should establish joint secretariats to plan and execute partners' decisions. Secondly, the SMEs should improve information sharing by identifying and training specific staff to handle shared information, creating special security facilities for classified information as well as specifying penalties for non-adherence. Thirdly, the SMEs should initiate team-building activities such as games, tree planting and environmental cleanup, among others to expedite staff bonding and foster teamwork. Finally, the SMEs should recognize and reward staff members who perform exceedingly well in their work, leadership positions or in terms of behaviour. This ties up with the need to amplify small acts of positive behavior among staff to encourage emulation.

In addition, SSA governments should address various issues to enable alliance SMEs reduce performance risks: firstly, the governments should provide tax incentives through temporary exemptions or abolition of unnecessary taxes for SME alliances to improve production capacity and survival in hyper-competitive markets. Secondly, the governments should explore cheaper energy alternatives such as solar, wind and geothermal power to reduce overdependence on hydro-electricity, which is already too expensive. Thirdly, the governments should improve road network by increasing the coverage of all-weather roads and maintaining rural access roads to reduce transportation cost. Finally, the governments should establish SME assistance centres at the County level, with key functions such as promoting the development of SMEs, creating necessary linkages, training, research and dissemination.

At the time of this study, the idea of strategic alliances among SMEs was fairly a new concept in Kenya; hence, there was a difficulty in finding data on SME alliances registered by the government. This gap constrained the sample size used in this study. Also limiting the sample size was lack of complete and consistent accounting records among SMEs. Although the study was conducted nearly a decade ago, this paper serves as a stimulus for further research on the survival of SME alliances, not only in Kenya but also in other SSA countries. In this regard, future studies should focus on the dynamics of risk factors perceived by non-alliance SMEs. Besides, there is need for further research on risk factors influencing the survival and success of SME alliances in developed and developing economies.

APPENDICES

Appendix A: Summary Results of Binary Logistic Regression

COVARIATES	MODEL 1				MODEL 2			
	β	S.E.	ρ	Exp(β)	β	S.E.	ρ	Exp(β)
INFOshare								
Poor	1.82	0.02	0.00*	6.17	1.83	0.02	0.00*	6.23
Fair	1.57	0.00	0.00*	4.81	1.55	0.01	0.01**	4.70
Good (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
EXPshare								
Poor	1.55	0.33	0.02**	4.71	1.53	0.23	0.01**	4.61
Fair	1.32	0.13	0.04**	3.74	1.30	0.12	0.03**	3.66
Good (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
STAFFbond								
Poor	1.62	0.34	0.01**	5.05	1.60	0.34	0.01**	4.94
Fair	1.04	0.32	0.03**	2.83	1.02	0.30	0.03**	2.77
Good (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
TRUSTlev								
Low	0.61	0.23	0.01**	1.84	0.59	0.22	0.01**	1.80
Fair	0.19	0.41	0.06***	1.21	0.17	0.41	0.17	1.18
High (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
FIRMsize								
No paid workers	2.02	1.80	0.00*	7.51	1.99	1.79	0.00*	7.34
1 to 9 workers	1.49	1.26	0.00*	4.41	1.46	1.27	0.00*	4.32
10 to 19 workers	1.02	0.80	0.01*	2.78	1.00	0.80	0.01**	2.72
20 to 29 workers	0.77	0.55	0.04**	2.17	0.75	0.24	0.03**	2.12
30 to 39 workers	0.01	0.21	0.24	1.01	-0.01	0.21	0.12	0.99
40 workers+ (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
OWNstruc								
S/ proprietorship	1.07	0.84	0.01**	2.90	1.04	0.71	0.08***	2.84
Partnership	0.03	0.19	0.42	1.03	0.01	0.19	0.37	1.01
Ltd company (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
COMPint								
Using computers	-0.02	0.24	0.03**	0.98	-0.05	0.18	0.03**	0.96
No computers (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SKILLstaff								
<10%	2.13	1.90	0.00*	8.37	2.10	0.76	0.00*	8.19
10-29%	2.06	1.84	0.00*	7.85	2.04	1.84	0.00*	7.68
30-49%	1.67	1.45	0.00*	5.33	1.65	1.45	0.01**	5.21
50-69%	0.41	0.19	0.07***	1.51	0.39	1.19	0.04**	1.48
70% + (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
DEMlevel								
Poor	1.38	0.31	0.01**	3.99	1.36	0.30	0.02**	3.90
Fair	1.06	0.48	0.03**	2.89	1.04	0.47	0.03**	2.82
High (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
TAXlevel								
Too high	2.02	1.80	0.00*	7.52	2.00	1.82	0.00*	7.36
High	1.61	1.39	0.00*	5.01	1.59	1.39	0.01**	4.90
Fair (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
TRANcost								
Too high	1.55	1.33	0.00*	4.70	1.53	1.32	0.00*	4.60
High	1.33	1.10	0.03**	3.76	1.30	0.10	0.01**	3.68
Fair (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
ENERGcost								
Too high	1.15	0.93	0.00*	3.16	1.13	0.78	0.00*	3.09
High	1.00	0.78	0.03**	2.73	0.98	0.78	0.04**	2.67
Fair (RC)	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

This table presents the results of binary logistic regression, which generated two models, the first model incorporated relational and performance risk factors only, while model two included relational and performance risk factors as well as intermediate risk factors. The column labeled β represents the regression co-efficients, the column labeled S.E. represents the standard error associated with the regression co-efficients, ρ column represents the significance of variation between the co-efficients, while Exp (β) column presents the odds ratios. Furthermore, RC stands for Reference Category, while ***, ** and * shows significance level at 1, 5 and 10 percent, respectively.

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