



**BRITISH ACADEMY
OF MANAGEMENT**

BAM
CONFERENCE

3RD-5TH SEPTEMBER

ASTON UNIVERSITY BIRMINGHAM UNITED KINGDOM

This paper is from the BAM2019 Conference Proceedings

About BAM

The British Academy of Management (BAM) is the leading authority on the academic field of management in the UK, supporting and representing the community of scholars and engaging with international peers.

<http://www.bam.ac.uk/>

A Meta Analytical Review of Factors Effecting the Strategic Thinking of an Organisation

Aqueeb Sohail Shaik

Research Scholar

Department of Management Studies, IIT-Delhi,
New Delhi, National Capital Territory of India, India.
aqueebsohail.skprofessional@gmail.com

Sanjay Dhir

Assistant Professor

Department of Management Studies, IIT-Delhi,
New Delhi, National Capital Territory of India, India.
sanjaydhir.iitd@gmail.com

Abstract

A structured review of literature on the factors affecting the strategic thinking of an organisation has been conducted in this study. It offers some theoretical insights by analysing the divergent or analogous views of authors on these factors by analysing the empirical studies conducted in the literature. Meta Analysis is the methodology adopted in this study which analyses the different empirical studies conducted in the literature and determines the variation or similarities in the views of authors over the same factor based on their effect sizes. This study analyses over 45 different empirical studies conducted in the literature on the factors affecting the strategic thinking. The findings of this study identify the homogeneous or heterogeneous nature of the factors affecting the strategic thinking in an organisation. The study fills the unattended gaps in the literature by analysing the homogeneous and heterogeneous nature of the factors affecting the strategic thinking of a organisation.

Keywords: *Strategic Thinking, Meta- Analysis, Homogeneity, Heterogeneity, Effect Size*

INTRODUCTION

The concept of strategic thinking and its importance is discussed in the literature extantly, defined as the attitude of an organisational thinking process which drives smart actions and the will to inspire the entire firm to work towards a goal (Hamel & Prahalad, 1994; Mintzberg, 1987; Bonn, 2005; Alsaaty, 2007), achieving the competitive advantage over the competitors and asserting an act of creating a new business venture (Shaheen, Ali & Shah, 2012; Kazmi & Narannoja, 2015; Burta, 2018). Thinking strategically can discover new, imaginative strategies which can be used to shape the competitive game (Heracleous, 1998; Warren, Howat & Hume, 2011; Daspit et al., 2017). Building up an administration framework to direct strategic thinking in changing markets is progressively basic for researchers and executives in adapting to the complex and quickly changing worldwide business conditions (Liedtka, 1998; Goldman, 2014; Rahnama & Rahpeyama, 2015; Dioniso, 2018). In order to grow, or even to maintain their current sizes, business firms have to seek continually (or invent) new marketable products, new methods of marketing them or even new ways of financing their activities (Simon, 1993). Many questions remain about the neural mechanisms underlying strategic thinking and heuristics, learning, and social utility (Camerer, 2003; Aloui & Penta, 2015). The new ways of thinking empower by allowing to exercise agency over a longer arc of time and across a wider interpersonal space (Larson & Hanson, 2005). Thinking helps in introducing new possibilities, challenging longheld assumptions, updating mental models, shared understanding and often become the basis for strategic decision-making (Pagani, 2008, Yasher et al., 2018; Tarka, 2018; Bibu et al., 2018). Strategic thinking is a constant procedure which attempts to expel the ambiguities and mean a convoluted atmosphere. This process involves the examination of the circumstances and furthermore an imaginative blend of the outcomes as a

successful strategic plan (Rahnama & Rahpeyama, 2015). Having strategic thinking is important with the end goal to envision future changes and make strategic choices (Salavati et.al, 2017; Steven, 2009). There are certain factors that influence the thinking process of an organisation and a change in the behaviour of the factors will have an impact on the entire thinking process of the system (Rahnama & Rahpeyama, 2015; Moon, 2013; Ostolaza & Sanchis, 2014; Bonn, 2005). There is a plethora of research conducted in the literature to find the effect of the factors on the thinking process of an organisation (Yan & Duan, 2003; Bonn, 2005; Rahnama & Rahpeyama, 2015). This study has been backed with a theory and the constructs discussed above were adopted in the context and with the support of dynamic capabilities & resource based view. Resource-based theory advanced and established into three streams: knowledge-based view, nature-based view and dynamic capabilities-based view (Božič & Knežević, 2016). The dynamics capabilities theory examines the sources and techniques for creation of wealth and catch by private venture firms working in conditions of rapidly changing technology and market (Teece, Pisano & Shuen, 1997; Dias & Renato, 2017; Hila, 2017). It is also proposed that private wealth creation in routines of fast innovative/technological change depends in vast measure on sharpening interior technology, organisational and administrative procedures inside the organisation (Mason, 1949; Bain, 1959; Porter, 1980; Teece, Pisano & Shuen, 1997). The approach also stresses the improvement of administration abilities, and hard to mimic mixes of authoritative, functional and technological skills, it incorporates and attracts upon research such zones as the management of R&D, item and process advancement. Meta-analysis allows researchers to aggregate evidence across studies that investigate similar theoretical predictions or sets of relationships around the same phenomenon (James, Cook & Rauch, 2019) In this study a structured literature review has been done to identify and synthesise the factors affecting the strategic thinking at an organisational level. Effect size of these factors in the literature were analysed to check for true homogeneity or heterogeneity. The results obtained after the analysis shows the homogeneous or heterogeneous nature of the identified factors. This analysis gives us an understanding of the level of work that has been done in the literature with respect to these factors and where there is a gap left for future work. Factors which turn out to be heterogeneous are considered for further study as the effect of these factors on strategic thinking has been explained diversely in different studies. The aim of this study was to respond to the call for consolidation of the literature on strategic thinking, and to assess the empirical support for the factors identified by cumulating prior empirical studies. However, this literature review provides agendas for improvements and suggestions for future research. Finally based on our study, we feel confident to offer some theoretical insights, recommendations for improving the validity and reliability of strategic thinking research, and ideas for future research.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Strategic thinking as defined in the literature is affected by certain factors which are categorised into various categories. In this study we categorised the factors identified into five different categories namely organisational structure, organisational competencies, organisational culture, technological change and external factors. The literature review in this study explains how the factors categorised have a affect on the strategic thinking process of the organisation.

Organisational structure (OS) & strategic thinking

Organisational structure as a construct has different factors influencing it, a few among them such as centralisation, formalisation and interdepartmental teams have been considered in the study. Centralisation alludes to how much power is differentially disseminated inside an organisation (Schminke et ai, 2000). Organizational centralisation can be conceptualised as a continuum. In profoundly concentrated organisations, control is practiced by a not very many individuals (Tata & Prasad, 2004). Centralisation debilitates objectivity by setting a large portion of basic leadership on top officials, exhausting their intellectual abilities and forcing huge time requirements on them. It might along these lines block analysis and planning (Mintzberg, 1973; Schwenk, 1984). In centralised organisational structures, coordination and issues happen at more elevated amounts of

the pecking order. Groups will be unable to perceive issues as they happen because of their restricted comprehension of process, and by the time when employees perceive issues, they don't have the authority to remedy them without administration endorsement (Liu et al., 1990; Tata & Prasad, 2004). So, there has been a view of how centralisation affects the organisational structure and thus impacting the strategic thinking of the organisation. Based on the views obtained from the above studies a null hypothesis is generated to check the homogeneity of effect sizes in the above studies. Formalisation is characterised as the degree to which formal and unequivocal rules characterise the jobs, duties, standards, systems, and executional measures. Formalisation elucidates jobs and duties, in this way engaging aggregate activity inside organisations (Micheal & Chen, 2014). In a client oriented administration firm, employees must have the capacity to adjust and react rapidly to client needs. For this to happen, it is suitable for administration firms to lessen their dependence on inflexible guidelines and cultivate a situation in which contact representatives trust they are not continually observed (Jaworski, 1988; Michael & James, 2000). A highly structured environment suppresses the ability of employees to respond to customer concerns. High formalization by and large directs that employees should initially look for the contribution of administration before following up on client concerns or demands (Bowen and Lawler 1992, Michael & James, 2000). So, there has been a divergent view in the literature of how formalisation can affect the organisational structure of the organisation, intern having an affect on the strategic thinking process of the organisation. Inter-departmental cooperation portrays the trading of data and the coordination of exercises crosswise over Inter-departmental units (Eisenhardt, 1995). It expands firms' innovation performance since it encourages information trade, upgrades the quantity of conceivably helpful thoughts, builds adaptability of the workforce, and enhances practical execution of new items exhibits that functional performance which is contrarily identified with market introduction (Troy et al., 2008). Accordingly, to support the age of resourcefulness and imagination from every individual representative, interdepartmental teams or groups ought to be masterminded (Moon, 2013).

H1: Centralisation has true homogeneity in effect sizes among the studies

H2: Formalisation has true homogeneity in effect sizes among the studies.

H3: Interdepartmental teams have true homogeneity in effect sizes among the studies

Organisational competencies (OR) & strategic thinking

From the skyline of resources and competencies, competitive advantage results from the utilisation of assets and capacities to produce differential fulfilment in gainful markets (Mildred et al., 2008; Rahnama & Rahpeyama, 2015). The reason for a competitive advantage frequently lies in the resources and competencies that are as of now available. The organization's orientation towards the market is always connected with advancement and competitiveness (Kohli and Jaworski, 1990; Rahnama & Rahpeyama, 2015). Strategic thinking is the premise of improvement in business of today and is reliable with social changes, technological accomplishments and the requests of creating focused situations. Advancement of an association only does not rely upon executives, their choices and considerations, but rather it relies upon their specialised, human and perceptual abilities (Smith, 2002; Hosseini, 2007; Rahnama & Rahpeyama, 2015). Firms with high mechanical competency will probably actualize fundamentally new product developments. Hence the findings from the literature strongly comment on the importance of the organisational competencies and their role in the thinking process.

H4: Market competency has true homogeneity in effect sizes among the studies

H5: Technological competency has true homogeneity in effect sizes among the studies

External factors (EF) of strategic thinking

Environmental turbulence has an activating job on the versatile administration hones in associations. In particular, the literature shows that environmental turbulence gives minimal dependable data, prompting 'causal-ambiguity' (Ali, Halit & John, 2014; Celly & Frazier, 1996). At the point when the environmental condition turn out to be more violent, and accordingly less

unsurprising, organisations change their practices, procedures, and schedules to address the difficulties by adjusting organisations practices and systems (Beckman et al., 2004). Rapidly changing markets and advances require instant reactions and quick conclusive moves for firms to make preferred standpoint of the external opportunities. Taking into account that the idea of strategic thinking is the management of chaotic complexities, multifaceted nature. Environmental turbulences are probably going to be important factors of thinking (Moon, 2013; Rahnama & Rahpeyama, 2015). It also inferred from the literature that organisations with better technological and market orientation fall on the positive side of the decision making with respect to handling the environmental disturbances.

Environmental dynamism concerns impacts on firm procedures and execution originating from sources outer to the firm, for example, market and technological dynamics (Henri, Tom & Martijn, 2012). Organisation adapting strategies that underscore product/market transformation, which are related with high environmental dynamism, depend all the more emphatically on tight budget objectives. Environmental dynamism can likewise be relied upon to influence firms' utilization of data hotspots for target setting. Specifically, past execution data will be most instructive for target setting when environmental dynamism is low (Chenhall 2003; Govindarajan 1984). Uncertainty, change, or intensity ought to be comprehensively deciphered as the level of low stability and advancement of the innovation is associated with firms' production and distribution forms (Oscar, Javier & Pablo, 2014). So, the dynamism in outside the firm has an impact on the activities and processes inside the firm which may have an effect on the strategic thinking of the system.

H6: Market turbulence has true homogeneity in effect sizes among the studies.

H7: *Technological turbulence has true homogeneity in effect sizes among the studies.*

H8: *Environmental dynamism has true homogeneity in effect sizes among the studies.*

Organisational culture (OC) & strategic thinking

Strategic conformity is the degree to which an organisations system adheres to the central propensities of its industry (Finkelstein & Hambrick, 1990; Stewart & Eden, 2006). In firms whose strategies adjust to their enterprises' central tendencies, the basic abilities for successors are recognition with those industries' systems and practices (Gupta, 1988; Zhang & Nandini, 2003). Firms with novel and one of a kind systems that veer off from industry inclinations will probably want successors who can investigate and assess a scope of aggressive practices beyond those that most firms in their enterprises have officially embraced (Finkelstein & Hambrick, 1990; Zhang & Nandini, 2003). Firms expectation on accomplishing competitive strength have a strategically forceful culture (Hamel & Prahalad, 1989; 1994) A strategically aggressive culture infers that all in the organisation comprehend that endeavors to win intensely, excel, and rule markets are ceaseless (Venkatraman, 1989; Jean, Kelly & Amit, 2011). Strategic aggressiveness states that the organization is yearning with respect to development and matchless quality in its business sectors, dedicating every conceivable asset and working in all conceivable approaches to achieve the targets and strategic goals (Hamel & Prahalad, 1989; 1994). Researchers in the literature have define strategic flexibility as the ability of the firm to digest the strategic changes over a period of time (Evans, 1991; Harrigan, 1985). Strategic flexibility mirrors an organisations capacity to react constantly to unforeseen changes and to acclimate to sudden outcomes of unsurprising changes (Suchetha & Hermann, 2010). Organizations that are more arranged towards the market don't accomplish an enhancement in performance, as opposed to the individuals who have more strategic flexibility (Jose & Antonio, 2005). The reward and remuneration framework is a basic factor of organizational culture since it can either energize or obstruct representatives' activities (Hambrick & Snow, 1989). Reward frameworks are a basic piece of any association's structure. How well they fit with whatever remains of the frameworks in an association importantly affects how viable the association is and on the personal satisfaction that individuals involvement in the association. (Bonn,2005) A reward framework that incorporates long haul and executive performance of official execution can lead the association to accomplish it's vital goals because of it's impact on official conduct. The above factors are considered to have an affect on the organisational culture with

respect to time and a change in the above parameters can have an impact on the strategic thinking of the organisation.

H9: Strategic conformity has true homogeneity in effect sizes among the studies.

H10: Strategic aggressiveness has true homogeneity in effect sizes among the studies.

H11: Strategic flexibility has true homogeneity in effect sizes among the studies.

H12: CEO Emphasis has true homogeneity in effect sizes among the studies.

H13: Reward System has true homogeneity in effect sizes among the studies.

Technological Change (TC) & Strategic Thinking

Strategic thinking is defined as the thinking process of an organisation to adapt the changes that take place in the market and perform better by working strategically on those changes. Technological change is one such change which needs to be adopted by the organisation to upgrade their way off business. Researchers overly emphasized on technical aspects and overlook the importance of integration with business strategic thinking (Huang & Keskar, 2006). Technological change can be categorised and each category has its own set of factors which influence the technology change in the organisation (Majharul Talukder, 2012). Prior research reveals that R&D investment is a fundamental influence on competitiveness and national development (Conner, 1991; Tidd et al., 2001) and may result in superior performance and growth. R&D spending has a favourable and significant impact on the growth of firm's productivity (Wakelin, 2001) and long-term performance. R&D intensity helps in better support firms' relationships with external partners to keep ahead of competency and market, improving firm performance (Miller et al., 2009). Hence R&D intensity has a significant impact on the firm performance. Technology adopt lag is defined as the product development team's lag or time taken to make a new technology know how fully available in place of a required or existing know-how prior to the prototype design stage in a new high-tech product development process (Saji & Mishra, 2012). Existing technologies often fall short of fulfilling desired requirements to achieve highly competitive new high-tech products (Krishnan & Bhattacharya, 2002; Daniel, Fariborz & Franics, 2011), Hence leading to a lag in the adoption of newer technologies. So, technological changes leads to a lag in the adoption of new technologies in the organisation with requires intensive evaluation process thus influencing the thinking of the organisation. Firms that introduce a higher number of new technologies in their NPD projects tend to be more successful in their new product commercialisation efforts. Dynamic customer needs and intense competition, which always make the firm follow an upward trajectory on performance parameters (Bhattacharya, Krishnan, & Mahajan, 1998; Mohr, 2001). Lesser the lag more soon the technology is adopted and sooner the operational efficiency of the firm increases leading to a better firm performance. From the findings of the literature review 3 factors have been listed; R&D intensity, technological novelty, technology adoption lag (Pilar, Ana, Devashis, 2009; Masaki, Arvind & Preet, 1996; Saji & Shashi, 2012; Daniel, Fariborz & Franics, 2011). The extant studies from the literature have shown that the above three factors grace an affect on the technological change in an organisation which affect the thinking process in the organisation.

H14: R & D intensity has true homogeneity in effect sizes among the studies.

H15: Technological Novelty has true homogeneity in effect sizes among the studies.

H16: Technology adaption lag has true homogeneity in effect sizes among the studies.

Methodology

A structured literature review method has been adopted to identify and synthesise the factors that are affecting the strategic thinking of an organisation. To synthesise the identified factors meta analysis is conducted on the factors from papers identified in ABDC ranked journals of strategic management area. The papers were searched with the key words such as strategic thinking, strategic intelligence, thinking strategically, antecedents of strategic thinking, factors of strategic thinking. A total of 65 papers were identified out of which 45 turned out to be conceptual papers and 20 were empirical papers. Factors common in at least two papers were considered, as the factors studied in a

single paper cannot be synthesised using meta analysis. Factors that are identified for synthesising using the meta analysis tools are centralisation, formalisation, Interdepartmental teams, market competency, technological competency, market turbulence, technological turbulence, environmental dynamism, strategic conformity, strategic aggressiveness, Strategic flexibility, R&D Intensity, Technological Novelty, Technological adoption lag, CEO Emphasis.

Meta-analysis technique (Schmidt & Hunter, 2014) was adopted for quantitatively analyzing the 45 empirical studies. This technique helps in analysing the effect sizes of the factors from the studies considered. There are two types of effect sizes, random effect and fixed effect. The difference between fixed and random effect meta-analysis technique is that fixed effect meta-analysis assumes effect size to be homogenous as studies included in the meta-analysis are believed to be sampled from the same population. Whereas in case of random effect meta-analysis the effect size is assumed to be random since the studies included in the meta-analysis are sampled from a super population. In this study a fixed effect meta analysis is conducted to check the effect sizes of the studies. Comprehensive meta analysis software is the tool used to generate the effect sizes of the studies. All the studies considered in the literature review have correlation analysis as common, the values of which acts as the input to the tool for generating the effect sizes. Hedges g test (Powers, Vedel, & Emmelkamp, 2008) is conducted for the studies, individually for every factor. The analysed effect sizes and standard errors help in identifying the homogeneous or heterogeneous nature of the factor. This is done by calculating the q statistics (Lipsey & Wilson, 2001; Julian & Thompson, 2002). The null hypothesis generated quotes that there is true homogeneity in effect sizes among the studies and alternative hypothesis states that there is heterogeneity. Q-statistics is distributed as χ^2 with (k-1) degrees of freedom, where k is number of samples per factor. $Q = \sum(W * ES^2) - \frac{\sum(W*ES)^2}{\sum W} \sim \chi^2_{(K-1)}$, Where W=Relative Weight and ES=Effect size. Q stats has low power as a comprehensive test of heterogeneity, especially when number of studies is small (Julian & Thompson, 2002). Hence this test is weak at detecting the heterogeneous nature of the factor. As an alternate, I^2 test (Laméris, 2008) is calculated that describes the percent of variation across studies that are due to heterogeneity rather than chance (Higgins, 2001). $I^2 = \frac{Q - (K-1)}{Q} * 100\%$. The I^2 value has levels of interpretation such as $I^2=0\%$ there is no heterogeneity, $I^2=25\%$ there is low heterogeneity, $I^2=60\%$ there is moderate heterogeneity, $I^2=80\%$ and above there is very high heterogeneity and if I^2 is negative, it is considered to be as good as 0 and I^2 can never reach 100%. The entire procedure explained above has been adopted to synthesise the factors affecting the strategic thinking and to identify the true homogeneity and heterogeneity of these factors among the empirical studies considered from the literature.

Survey of literature

We have conducted a structured and comprehensive literature review on strategic thinking including both theoretical and empirical work. Firstly key words for strategic thinking such as strategic thinking, thinking strategically, antecedents of strategic thinking, factors of strategic thinking, strategic intelligence, strategic planning and thinking were used for a computerised search. The data bases used for this search were EBSCOhost and scopus. The timeline of search was kept to be 1990 to 2018 for theoretical papers and empirical papers were extracted from the timeline of 2000 to 2018. The downloaded papers were then classified according to the ABDC category of journals. Finally the complete data base of literature for strategic thinking was categorised into theoretical and empirical papers. A total of 65 papers were considered out of which 44 were empirical and 21 were theoretical.

Criteria of Inclusion

As explained in the survey of literature, a total of 44 empirical papers were considered for the meta analysis. The papers were considered based on three different criteria for conducting the meta analysis. Firstly, we considered studies which have their dependent variable as strategic thinking, organisational structure, culture, resources, technological change. Since it was inferred from the

literature that the factors falling in the above categories have an impact on the strategic thinking of an organisation (Bonn, 2013). Secondly, we have included papers which have spoken about strategic thinking at an organisational level and omitted the papers which have analysed the strategic thinking at an individual level which consists of psychological traits of the individual to the top management executives. Finally, all the papers included in the analysis had the type of methodology used in the work as common. Meta analysis can be conducted for means, variances, regression, correlation etc. In our study we kept correlation analysis as standard for all the papers.

Coding Procedure

As explained in the above section, the papers with correlation analysis were considered for the meta analysis. Since the main aim of the study was to check the true homogeneity of the factors listed from the literature, Q statistic was calculated for all 16 factors listed from the literature. Firstly, the sample size for each factor from k (k= Total number of papers) papers was listed and tabulated. Secondly the correlation constant of the factor and the dependant variable was tabulated again from k number of papers. As explained in the methodology section, the required values for calculating the Q statistics were calculated from the sample size and correlation values. Finally the Q statistics is calculated for all 16 factors individually and tabulated. The calculated Q statistics are compared to the tabulated Q statistic from the chi-square table. Calculated Q values that are smaller than the tabulated Q values were inferred to be homogeneous, remaining were again tested for nature of heterogeneity using the I square values. The entire procedure was adopted from the work explained in (Hunter & Schmidt, 2004).

Results & Analysis

Using the comprehensive meta analysis tool the effect sizes and standard errors for all the empirical studies have been calculated by Hedges g test. The Q statistics for every factor is calculated and compared to the tabulated Q statistics from the chi-square table. If the calculated q statistics is less than the tabulated Q the the factor is considered to be homogenous, if it is greater than the tabulated Q value the hypothesis is not accepted and the factor is further tested for heterogeneity. As per the analysis the factors considered under organisational structure; centralisation, formalisation and interdepartmental teams were tested for effect sizes. It was found that centralisation and formalisation are not homogeneous and this shows that the empirical studies considered for the analysis had a different view on the impact of these factors on strategic thinking. Whereas interdepartmental teams has true homogeneity among all the studies from the effect sizes obtained. This shows that literature on centralisation and formalisation has different views on how they have an impact on the strategic thinking of the organisation. Factors of Organisational competencies; Technological and Market competency when tested for true homogeneity the effect sizes obtained from the analysis showed that the studies considered for theses factors have a similar opinion on the type of impact on the strategic thinking. So, the hypothesis is accepted and the factors were interpreted to be homogenous in nature. Factors grouped under organisational culture; Strategic conformity and reward system when tested for homogeneity it was found that there was true homogeneity among the effect sizes and the empirical studies considered for the analysis have similar views on how these factors have an impact on the strategic thinking of the organisation. Whereas other factors listed under organisational culture; Strategic flexibility, strategic aggressiveness and ceo emphasis when tested for true homogeneity in the effect sizes showed a heterogeneous nature. It was inferred that these three factors have been discussed with different perspectives on how they affect the strategic thinking of an organisation and based on the I squared values it shows that there is a very high heterogeneity in the effect sizes among the studies considered. Technological change factors considered for the analysis such as R&D Intensity and technology adoption lag when synthesised showed that their effect sizes had no true homogeneity among the effect sizes and also there is a very heterogeneity among the nature of the studies. Technological novelty on the other hand falling under the same category had a true homogeneity in the effect sizes for the studies considered. External Factors identified; Market and technological

turbulence which are basically considered as the control variables in the study had a highly heterogeneous nature among the effect sizes for the studies considered for the study. The summary of the analysis has been tabulated for all the 16 factors considered from the empirical studies in the literature.

Table 1: Meta Analysis

S l. N o. .	Factors	WC	K	N	W	Effect Size	Std Erro r	Q Stat s	Q Tab	Hypothesis Result	I ²
1	Centralisation	-0.01	5	487	112.9 9	0.46	1.11	21.7	9.49	Not Accepted	81.5 6
2	Formalisation	0.42	4	985	200.3 6	2.94	0.69	82.0 9	5.99	Not Accepted	96.3 5
3	Market Competency	0.09	2	683	166.5 1	0.78	0.42	2.74	9.59	Accepted	
4	Technological Competency	0.09	7	236 1	581.5 7	1.35	0.95	4.74	11.0 7	Accepted	
5	Market Turbulence	0.28	2	377	86.24	1.16	0.31	14.5 2	3.84	Not Accepted	93.1 1
6	Technological Turbulence	0.39	2	377	86.78	1.13	0.31	12.7 5	3.84	Not Accepted	92.1 6
7	Environmental Dynamism	0.37	2	548	115.9 9	1.85	0.28	34.9 9	3.84	Not Accepted	97.1 4
8	Strategic Conformity	0.13	2	283	68.74	0.52	0.37	3.07	3.84	Accepted	
9	Strategic Agressiveness	0.34	2	360 6	799.1 2	1.67	0.2	352. 69	3.84	Not Accepted	99.7 2
10	Strategic Flexibility	-0.19	2	973	224.5 6	-0.11	0.23	52.8 3	3.84	Not Accepted	98.1 1
11	R&D Intensity	0.0816	3	696 4	1728. 19	0.541 7	0.216 4	12.4 7	3.84 1	Not Accepted	83.9 6
12	Technological Novelty	0.15	2	222	53.42	0.62	0.39	2.75	3.84	Accepted	
13	Technology Adoption Lag	0.10	2	806	186.9 5	0.91	0.23	39.4	3.84	Not Accepted	97.4 6
14	Interdepartmen tal Teams	0.15	2	367	88.29	0.18	0.3	0.39	3.84	Accepted	
15	CEO Emphasis	0.17	3	367	87.7	0.76	0.31	7.52	3.84	Not Accepted	86.7 0
16	Reward System	0.14	2	367	4079	0.55	0.05	1.60	3.84	Accepted	

The analysis as show in the above table infers that out of 16 factors considered for the analysis, 6 are homogeneous and 10 are heterogeneous. Out of 16 hypothesis generated 6 were accepted and 10

were not accepted, which states that there is true homogeneity in only 6 factors that affect the strategic thinking and the remaining 10 factors have been explained diversely in the literature.

Discussions & Implications

From the analysis it is inferred that a set of six factors (Market Competency, Technological Competency, Strategic Conformity, Technological Novelty, Interdepartmental Teams, Reward System) are homogenous and a set of ten factors (Centralisation, Formalisation, Market Turbulence, Technological Turbulence, Environmental Dynamism, Strategic Aggressiveness, Strategic Flexibility, R&D Intensity, Technology Adoption Lag, CEO Emphasis) are heterogeneous. This study showed that there is a gap to be answered in the strategic thinking literature on why and how there is a heterogeneity or diverse views on the above 10 factors and what role/affect do they have in achieving the strategic thinking in an organisation. This study also quantitatively validates the literature review conducted on the factors affecting the strategic thinking, which gives us a mathematically proven backing for dropping a few factors for the future studies on strategic thinking. Elucidating the implications of this study in detail, a meta-analysis is conducted on the antecedents and their factors of strategic thinking. The analysis has shown that 10 out of 16 factors were heterogeneous which inferred that literature had a diverse view on the effect of these factors, left over 6 factors were homogeneous and were similar with the views. From this study it can be inferred that the effect sizes of 10 heterogeneous factors are not the same for all the studies conducted in the literature and our study has identified the same and further analysed to clinch the assorted views on these factors. The above findings also provide a solid foundation and interesting insights for future research in this area of strategic thinking.

Academic Implications

This study adds to the literature of strategic thinking and the factors having an impact on the strategic thinking at an organisational level. This study also identifies the gap from the findings which explain about the homogeneous and heterogeneous nature of the factors. As there is enough work done on the homogeneous factors there is a scope for the researchers to further explore the factors which have a heterogeneous nature. The finding of this study may help the researchers to further explore the thinking construct from a different perspective. Technological change has been used as an antecedent to strategic thinking in our study, whereas few studies have adopted technological change as a mediator to the firm performance. This study can be further extended by exploring the present constructs with a new theoretical backing. Since the present study also explains the effect of constructs such as organisational structure, culture, competencies and technological change on strategic thinking and firm performance, it contributes to the literature in strategic management as whole. The present research is done in a quantitative setup, this can be explored in a qualitative structure by using different methods such as grounded theory, phenomenology, ethnography and case study. The limitations of this research also unwraps the opportunities for further exploration in the area of strategic thinking & strategic management. The study also contributes to the literature by explaining how the strategic thinking has been evolved over a period of time.

Implications for Industries & Policy makers

The findings of this study give an understanding of what are the factors that effect the strategic thinking in an organisation. The study includes factors such as R&D intensity, technology adoption lag, Flexibility, strategic aggressiveness which are to be prioritised when the strategies are designed. These are the focal points which may bring a strategic thinking environment in the organisation which leads to a better firm performance. Policy makers on the other hand need to understand the behavior of these variables in different scenarios which might give them a proper understanding of how the policies framed might have an impact on the industry. This helps to prevent the failures in the policy or any negative affect on the performance of the industry which may have a direct affect on the growth of the country with respect to that industry.

Directions for future research

We have run the meta analysis and provide an analytic estimate of the factors affecting the strategic thinking at an organisational level. This review off strategic thinking literature for the timeline of around 30 years give a theoretical insight of the current status of this domain and also helped us to identify certain gaps in the current knowledge of thinking literature and hence put ahead research agenda for the future. As a take away from this literature review we have tried to identify a few gaps and define a few frameworks for the further research in the area of strategic thinking.

Framework 1

First framework we propose is to check the affect of the constructs OS, OR, OC, EF on strategic thinking and the moderating affect of technological change between these constructs and strategic thinking. Our initial survey on studies concentrated more on the strategic planing and strategic thinking in their own silos. Technological change is an essential business process that needs to be considered while framing a strategy. Due to the change in the technologies there might be certain disturbances which take place in the organisation. These dynamics may take place in any one of the 4 constructs or it can affect all the constructs and its impact on strategic thinking. So the proposed model can be tested with and without the moderation effect of technological change and the values obtained can be compared and findings can be draw from the results. Future study one this framework also gives us an understanding of the magnitude of effect due to the technological change in an organisation and its impact on the thinking process. Apart from the factors synthesised form this study there are many other technological factors such as technology heterogeneity, Technology intensity, Technical complexity, technical reliability may also be considered while testing the model. There is very scant literature on how technology change as a moderate affect the thinking process in an organisation. These are key gaps in our current knowledge that are in site need of research. The meta analysis done on these factors can act as support for future development of a more clear conceptual model which can be tested when data for the listed factors becomes available. This framework has the advantage that it will allow integration of various findings with different insights.

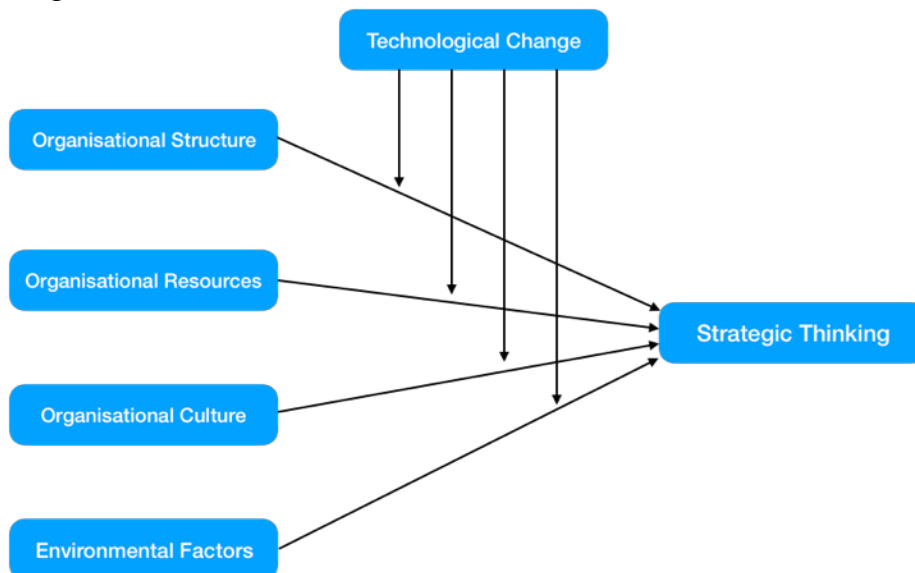


Figure 1: Conceptual framework with technological change as moderator

Framework 2

As a second theme for the future research, we propose that further research on strategic thinking should test the mediating effect of technological change between the constructs and strategic thinking. As explained earlier technological change acts as one of the major business processes which has a great impact on the functional aspects of the organisation. Only recently researchers

have started to pay attention to various dynamics these constructs cause while developing a strategic thinking culture in the organisation. Technological change being one of the important constructs we considered for the role of a mediator might have a different affect on the behaviour of strategic thinking with might be interesting to study both from academic as well as industrial point of view. A perspective on technological change as a mediator should involve a researchers effort of how to delineate its affect of the constructs on strategic thinking. An examination of a such an effect should also give us an extensive conceptualisation of how important can be a role of technological change in an organisation to develop the culture of strategic thinking. Thus, as indicated in the conceptual model, research should push the envelope further and take a closer look at the mediating affect of technological change between the constructs and strategic thinking. The findings derived from testing this model can help us understand the magnitude of the affect of TC on strategic thinking. This also helps the top management teams to understand the dynamics that are place in different functional departments due to the adoption of new technologies in their organisation, which also helps in detecting the failures before hand which have an adverse impact on the efficiency and performance of the business.

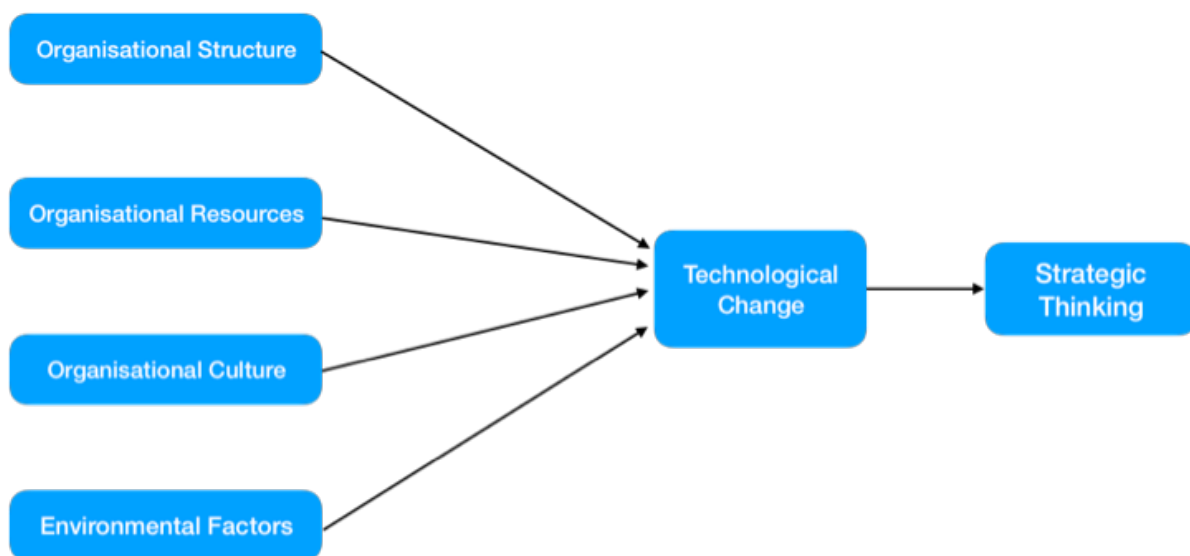


Figure 2: Conceptual framework with technological change as mediator

Framework 3

Finally, as a third board research avenue, we suggest that future research should benefit from considering the impact of strategic thinking on the firm performance along with the moderating affect of environmental factors and mediating affect of strategic thinking between the constructs and firm performance. Studies till now in the literature have spoken about the various factors tat have an affect in the strategic thinking of the organisation and how to develop a culture of strategic thinking in the organisation. Virtually no studies have examined the mediating affect of strategic thinking with respect to the performance of the organisation. With the interest of taking the research on strategic thinking to a step ahead we propose this conceptual framework where the mediating affect of strategic thinking as well as the moderating affect of the environmental factors such as market and technological turbulence on the firm performance can be analysed. Future research should concentrate on empirically studying the different dynamics in a organisation due to strategic thinking and should be able to answer multilevel questions regarding the same. The findings from this framework explains of how organisations practicing strategic thinking differ form, those not, by showing a better behaviour in terms of firm performance. Also by studying the moderating affect of environmental factors it gives the top management teams to understand on how the external factors can affect the performance of the organisation and was measures in the form of strategies can be framed to prevent a fall in the performance. This conceptual model can be further extended to identify the causal loops which might give insights on how the change in the behavior of a

particular construct can have an affect on the entire system. Future research may integrate and test the behaviours of these factors to understand their contribution in achieving strategic thinking in the system

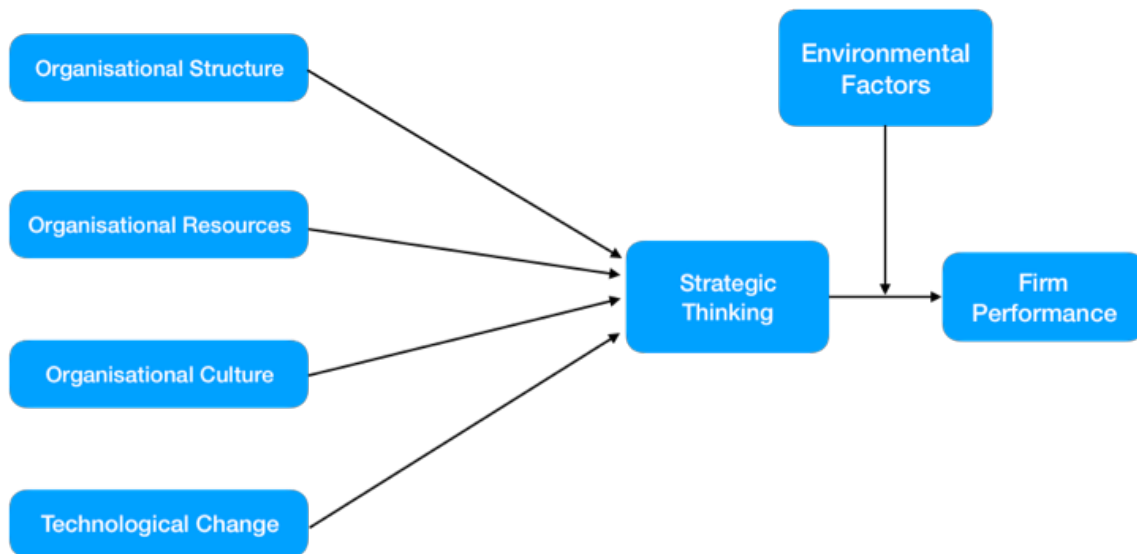


Figure 3: Conceptual framework with environmental factors as moderator for firm performance

Conclusion

The meta analysis conducted in this study provides a comprehensive picture of the factors affecting the strategic thinking of an organisation. The study also analyses the homogeneous and heterogeneous nature of the factors. Finally this study provides a theoretical insight of strategic thinking, factors affecting it at an organisational level. Future research on this area may benefit from (a) analysing the type of impact (b) Identifying the driving power of the factors (c) Analysing the interdependencies of the factors on one another.

References

- Aiman-Smith, L. and Green, S.G., 2002. Implementing new manufacturing technology: The related effects of technology characteristics and user learning activities. *Academy of Management Journal*, 45(2), pp.421-430.
- Al-Qatamin, A.A. and Esam, A.M., 2018. Effect of Strategic Thinking Skills on Dimensions of Competitive Advantage: Empirical Evidence from Jordan. *Proceedings of MAC 2018 in Prague*, p.8.
- Alimi, D.A., RANKING THEKEY FACTORS OFSUCCESS IN STRATEGIC THINKING AND MANAGEMENT BY USING MCDM-FAHP TECHNIQUE.
- Alsaaty, F.M., 2007. Entrepreneurs: Strategic thinkers in search of opportunities. *Journal of Business & Economics Research*, 5(2), pp.65-71.
- Alaoui, L., & Penta, A. (2015). Endogenous depth of reasoning. *The Review of Economic Studies*, 83(4), 1297-1333.
- Ameyaw, C. and Alfen, H.W., 2017. Identifying risks and mitigation strategies in private sector participation (PSP) in power generation projects in Ghana. *Journal of Facilities Management*, 15(2), pp.153-169.

- Arayesh, M.B., Golmohammadi, E., Nekooeezadeh, M. and Mansouri, A., 2017. The effects of organizational culture on the development of strategic thinking at the organizational level. *International Journal of Organizational Leadership*, 6(2).
- Baird, I.S. and Thomas, H., 1985. Toward a contingency model of strategic risk taking. *Academy of management Review*, 10(2), pp.230-243.
- Bates, D.L. and Dillard Jr, J.E., 1993. Generating strategic thinking through multi-level teams. *Long Range Planning*, 26(5), pp.103-110.
- Bibu, N., Sala, D., & Alb, M. (2016). Vision and strategic thinking in the Romanian fast growing firms management. *Economic Science Series*, 25(1), 845-851.
- Bonn, I., 2005. Improving strategic thinking: a multilevel approach. *Leadership & Organization Development Journal*, 26(5), pp.336-354.
- Brockwell, S.E. and Gordon, I.R., 2001. A comparison of statistical methods for meta-analysis. *Statistics in medicine*, 20(6), pp.825-840.
- Burta, F. S. (2018). Supply Chain Management And Performance: Framework For Strategic Decision Making. *The Annals of the University of Oradea*, 4(3), 430-446.
- Calandro, J., 2015. A leader's guide to strategic risk management. *Strategy & leadership*, 43(1), pp.26-35.
- Casey, A.J. and Goldman, E.F., 2010. Enhancing the ability to think strategically: A learning model. *Management Learning*, 41(2), pp.167-185.
- Camerer, C.F., 2003. Behavioural studies of strategic thinking in games. *Trends in cognitive sciences*, 7(5), pp.225-231.
- Clarke, C.J. and Varma, S., 1999. Strategic risk management: the new competitive edge. *Long Range Planning*, 32(4), pp.414-424.
- Coeurderoy, R., Guilmot, N. and Vas, A., 2014. Explaining factors affecting technological change adoption: A survival analysis of an information system implementation. *Management Decision*, 52(6), pp.1082-1100.
- Cooper, T., 2012. Exploring strategic risk in communities: evidence from a Canadian province. *Journal of Enterprising Communities: People and Places in the Global Economy*, 6(4), pp.350-368.
- Cox, J.G., 1978. A framework of decision making for technological change. *Long Range Planning*, 11(1), pp.53-58.
- Daspit, J. J., Chrisman, J. J., Sharma, P., Pearson, A. W., & Long, R. G. (2017). A Strategic Management Perspective of the Family Firm: Past Trends, New Insights, and Future Directions. *Journal of Managerial Issues*, 29(1).
- Dionisio, M. A. (2017). Strategic Thinking: The Role in Successful Management. *Journal of Management Research*, 9(4), 44-57.

- Drejer, A., Olesen, F. and Strandskov, J., 2005. Strategic scanning in a new competitive landscape: towards a learning approach. *International journal of innovation and learning*, 2(1), pp.47-64.
- Emblemsvåg, J. and Endre Kjølstad, L., 2002. Strategic risk analysis—a field version. *Management decision*, 40(9), pp.842-852.
- French, S., 2009. Re-framing strategic thinking: the research—aims and outcomes. *Journal of Management Development*, 28(3), pp.205-224.
- Goldman, E. F. (2007). Strategic thinking at the top. *MIT Sloan management review*, 48(4), 75.
- Goldman, E.F., 2012. Leadership practices that encourage strategic thinking. *Journal of Strategy and Management*, 5(1), pp.25-40.
- Graetz, F., 2002. Strategic thinking versus strategic planning: towards understanding the complementarities. *Management decision*, 40(5), pp.456-462.
- Higgins, J.P., Whitehead, A., Turner, R.M., Omar, R.Z. and Thompson, S.G., 2001. Meta-analysis of continuous outcome data from individual patients. *Statistics in medicine*, 20(15), pp.2219-2241.
- Huang, S.H. and Keskar, H., 2007. Comprehensive and configurable metrics for supplier selection. *International journal of production economics*, 105(2), pp.510-523.
- Haans, R.F., Pieters, C. and He, Z.L., 2016. Thinking about U: Theorizing and testing U-and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, 37(7), pp.1177-1195.
- Hussey, D., 2001. Creative strategic thinking and the analytical process: critical factors for strategic success. *Strategic Change*, 10(4), pp.201-213.
- Ibrahim Olaniyi, M. and Elumah Lucas, O., Strategic Thinking and Organization Performance: Study of Nigeria Firms.
- Jelenc, L., 2008. The impact of strategic management schools and strategic thinking on the performance of croatian entrepreneurial practice. *Unpublished PhD dissertation. University of Ljubljana*.
- Higgins, J.P. and Thompson, S.G., 2002. Quantifying heterogeneity in a meta-analysis. *Statistics in medicine*, 21(11), pp.1539-1558.
- Jurse, M. and Vide, R.K., 2010, May. Strategic thinking as a requisite management tool for managing international marketing in turbulent times. In *An Enterprise Odyssey. International Conference Proceedings* (p. 1151). University of Zagreb, Faculty of Economics and Business.
- Kaufman, R., 1992. *Strategic planning plus: An organizational guide*. Sage Publications.
- Kazmi, S.A.Z. and Naaranoja, M., 2015. Cultivating strategic thinking in organizational leaders by designing supportive work environment!. *Procedia-Social and Behavioral Sciences*, 181, pp.43-52.

- Kazmi, S.A.Z., Naaranoja, M., Kytola, J. and Kantola, J., 2016. Connecting strategic thinking with product innovativeness to reinforce NPD support process. *Procedia-Social and Behavioral Sciences*, 235, pp.672-684.
- Kendrick, T., 2004. Strategic risk: am I doing ok?. *Corporate Governance: The international journal of business in society*, 4(4), pp.69-77.
- Kiptoo, J.K. and Mwirigi, F.M., 2014. Factors that influence effective strategic planning process in organizations. *Journal of Business and Management*, 16(6), pp.188-194.
- Laméris, W., van Randen, A., Bipat, S., Bossuyt, P.M., Boermeester, M.A. and Stoker, J., 2008. Graded compression ultrasonography and computed tomography in acute colonic diverticulitis: meta-analysis of test accuracy. *European radiology*, 18(11), p.2498.
- Langowitz, N.S., 1993. Managing a major technological change: Long Range Planning, 25 (3), 79–85 (June 1992). *Long Range Planning*, 26(1), p.152.
- Larson, R. and Hansen, D., 2005. The development of strategic thinking: Learning to impact human systems in a youth activism program. *Human Development*, 48(6), pp.327-349.
- Leavy, B., 2007. Managing the risks that go with high-impact strategies in uncertain markets. *Strategy & Leadership*, 35(4), pp.43-46.
- Lewis, S. and Clarke, M., 2001. Forest plots: trying to see the wood and the trees. *BMJ: British Medical Journal*, 322(7300), p.1479.
- Liedtka, J.M., 1998. Strategic thinking: can it be taught?. *Long range planning*, 31(1), pp.120-129.
- Lin, Y., Wen, M.M. and Yu, J., 2012. Enterprise risk management: Strategic antecedents, risk integration, and performance. *North American Actuarial Journal*, 16(1), pp.1-28.
- Lifshitz-Assaf, H. (2018). Dismantling knowledge boundaries at NASA: The critical role of professional identity in open innovation. *Administrative science quarterly*, 63(4), 746-782.
- Lipsey, M.W. and Wilson, D.B., 2001. *Practical meta-analysis*. Sage Publications, Inc.
- Miller, K.D. and Bromiley, P., 1990. Strategic risk and corporate performance: An analysis of alternative risk measures. *Academy of Management Journal*, 33(4), pp.756-779.
- Millett, S.M., 1988. How scenarios trigger strategic thinking. *Long Range Planning*, 21(5), pp.61-68.
- Moghadam, H., Haddadi, E. and Kikha, A., 2018. Studying the Effect of Strategic Thinking on Innovation Performance (Case study: Sistan and Baluchestan Customs Administration). *Revista Publicando*, 5(15), pp.1123-1135.
- Moon, B.J., 2013. Antecedents and outcomes of strategic thinking. *Journal of Business Research*, 66(10), pp.1698-1708.

- Muriithi, S.M., Louw, L. and Radloff, S.E., 2018. The relationship between strategic thinking and leadership effectiveness in Kenyan indigenous banks. *South African Journal of Economic and Management Sciences*, 21(1), pp.1-11.
- Pagani, M., 2009. Roadmapping 3G mobile TV: Strategic thinking and scenario planning through repeated cross-impact handling. *Technological Forecasting and Social Change*, 76(3), pp.382-395.
- Piercy, N.F. and Lane, N., 2006. The hidden risks in strategic account management strategy. *Journal of Business Strategy*, 27(1), pp.18-26.
- Powers, M.B., Vedel, E. and Emmelkamp, P.M., 2008. Behavioral couples therapy (BCT) for alcohol and drug use disorders: A meta-analysis. *Clinical psychology review*, 28(6), pp.952-962.
- Quinn, J.J., 1985. How companies keep abreast of technological change. *Long Range Planning*, 18(2), pp.69-76.
- Raimond, P., 1996. Two styles of foresight: Are we predicting the future or inventing it?. *Long Range Planning*, 29(2), pp.208-214.
- Reston, J.T. and Shuhaiber, J.H., 2005. Meta-analysis of clinical outcomes of maze-related surgical procedures for medically refractory atrial fibrillation. *European journal of cardio-thoracic surgery*, 28(5), pp.724-730.
- Reus, T.H. and Rottig, D., 2009. Meta-analyses of international joint venture performance determinants. *Management International Review*, 49(5), p.607.
- Rice, M.E. and Harris, G.T., 2005. Comparing effect sizes in follow-up studies: ROC Area, Cohen's d, and r. *Law and human behavior*, 29(5), pp.615-620.
- Salavati, S., Veshareh, E.J., Safari, H., Veysian, A. and Amirnezhad, G., 2017. Strategic thinking and its related factors in a medical science university in Iran. *Electronic physician*, 9(5), p.4332.
- Salamzadeh, Y., Bidaki, V. Z., & Vahidi, T. (2018). Strategic Thinking and Organizational Success: Perceptions from Management Graduates and Students. *Global Business & Management Research*, 10(4), 1-19.
- Shahbazzadeh, M., Rahiminik, A. and Ardestani, A.S., 2016. Survey of Relationship between Strategic Thinking within Deployment of Knowledge Management and Organizational Innovation in Miandoab NIOPDC. *Mediterranean Journal of Social Sciences*, 7(4 S1), p.294.
- Shaheen, K., Ali, Q. and Shah, S.H.H., 2012. Towards a hybrid model of strategic thinking: revisiting the paradox of strategy development versus design. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 1(12), p.166.
- Shirvani, A. and Shojaie, S., 2011. A Review on Leader's Role in Creating A Culture that Encourages Strategic Thinking. *Procedia-Social and Behavioral Sciences*, 30, pp.2074-2078.

- Simon, H.A., 1993. Strategy and organizational evolution. *Strategic Management Journal*, 14(S2), pp.131-142.
- Steptoe-Warren, G., Howat, D. and Hume, I., 2011. Strategic thinking and decision making: literature review. *Journal of Strategy and Management*, 4(3), pp.238-250.
- Talukder, M., 2012. Factors affecting the adoption of technological innovation by individual employees: An Australian study. *Procedia-Social and Behavioral Sciences*, 40, pp.52-57.
- Tarka, P. (2018). The views and perceptions of managers on the role of marketing research in decision making. *International Journal of Market Research*, 60(1), 67-87.
- Vaez, H., Ardakani, S.S. and Zanjirchi, S.M., THE EFFECT OF MARKET TURBULENCE AND TECHNOLOGICAL CHANGES ON THE STRATEGIC THINKING (CASE STUDY: TOSE'ETA AVON BANK).
- Vikhanskii, O. S. (2017). Learning as the Basis for Strategic Behavior. *Problems of Economic Transition*, 59(7-9), 667-679.
- Ward, E.P., 1981. Organization for technological change. *Long Range Planning*, 14(4), pp.121-124.
- Weaver, G.J., 2014. TEACHING "CAUSE AND EFFECT" IN BUSINESS SCHOOLS: A PATHWAY TO IMPROVED STRATEGIC THINKING SKILLS. *Academy of Educational Leadership Journal*, 18(3), p.111.
- Wilson, D.B. and Lipsey, M.W., 2001. Practical meta-analysis. *Thousand Oaks CA, US: Sage*.
- Yan, A., & Duan, J. (2003). Interpartner fit and its performance implications: A four-case study of US-China joint ventures. *Asia Pacific Journal of Management*, 20(4), 541-564.
- Yarger, H.R., 2006. *Strategic theory for the 21st century: the little book on big strategy*. DIANE Publishing.
- Zabriskie, N.B. and Huellmantel, A.B., 1991. Developing strategic thinking in senior management. *Long Range Planning*, 24(6), pp.25-32.

Appendix

Table 2: Definitions of strategic thinking

Sl. No.	Author	Definition
1	Liedtka (1998)	"Strategic thinking is traditionally defined as creative, disruptive, future-focused, and experimental in nature and seen to be at odds with traditional notions of strategic planning."
2	Bonn (2005)	"Strategic thinking is a way of solving strategic problems that combines a rational and convergent approach with creative and divergent thought process."

Sl. No.	Author	Definition
3	Kazmi & Narannoja (2015)	“Strategic thinking is considered a significant business process by management experts due to it’s appeal to strengthen organizational performance management and its effectiveness.”
4	Ibrahim & Lucas (2016)	“Strategic thinking is seen as the generation and application of distinctive business ideas and opportunities intended to create competitive advantage for a firm or business.”
5	Alsaaty (2007)	“Strategic thinking is an act of creating a whole new business venture.”
6	Yarger (2006)	“Strategic thinking is about thoroughness and holistic thinking that seeks to understand how the parts interact to form the whole by looking at parts and relationships among the effects they have on one another in the past, present, and anticipated future.”
7	Graetz (2002)	“Strategic thinking is defined as the efforts for innovation and imagination of the future which leads to a redefinition of basic strategies and even industrial businesses.”
8	Kaufman (1991)	“Strategic thinking is defined as “practical dreaming” in the way in which people in an organization assess, view, and create the future for themselves and their associates by defining and envisioning results that add value.”
9	Aarayesh et al. (2017)	“Strategic thinking is a strategic capability that helps managers to understand their ability in predicting and controlling future events and distinguishing them.”
10	Ali (2016)	“Strategic Thinking is a planning process that applies innovation, strategic planning and operational planning to develop business strategies that have a greater chance for success.”
11	Mintzberg (1994)	“Strategic thinking is a distinct way of thinking that utilizes intuition and creativity with the outcome being “an integrated perspective of the enterprise.”
12	Goldman et al. (2010)	“Strategic thinking is thinking that contributes to broad, general, overarching concepts that focus the future direction of an organization based on anticipated environmental conditions.”
13	O’Shannassy (2006)	“Strategic thinking is a particular way of solving strategic problems and opportunities at the individual and institutional level combining generative and rational thought processes.”
14	Raimond (1996)	“Strategic thinking is the ability to synthesise and utilise intuition and creativity in order to give an integrated perspective

Sl. No.	Author	Definition
		to an organisation.”
15	Jelenc (2008)	“Strategic thinking is a self-reflection on an organisation’s future that must be conceived as an organisational cognitive process which is performed and supported by a group through interaction and interdependence.”
16	Hamel & Prahalad (1994)	"Strategic thinking is the attitude of an organisational thinking process which drives smart actions and the will to inspire the entire firm to work towards a goal.”
17	Morteza et al. (2016)	"Strategic thinking is like a lever that paves the way for organization to achieve improved performance”
18	Golden (2011)	“Strategic thinking is a process that aims at improving organisational functioning through smart decision making process.”
19	Ahmed & Ayat (2018)	“Strategic thinking is a process that embedded the manner in which people think and rethink, evaluate, view, and conduct the future for themselves and others.”
20	Hossein et al. (2014)	“Strategic thinking is a process of utilizing previous experiences in a coherent framework and showing the best reaction in vital situations.”
21	Haycock et al. (2012)	"Strategic thinking is an innovative, creative, and right-brained process that encourages an open exchange of ideas and solutions to meet the dynamic, often unpredictable challenges faced in today’s economy.”
22	Drejer et al. (2005)	“Strategic thinking about possible scenarios and strategy in a creative manner that is relatively free from existing boundaries.”
23	Sun Tzu	“Strategic Thinking is comprehensive thinking and investigation required to meet the challenge of war in the greatest concern of state.”
24	Shaheen et al. (2012)	"Strategic thinking is expressed as a process of cognition that drives strategic knowledge, learning and of knowing all the variables that develop the cognitive maps of the minds of strategists at both group and individual level and also getting an understanding of the strategic environment at local and international levels.”
25	Abraham (2005)	“Strategic thinking is a cognitive approach that attempts to discover new and unconventional ways of competing.”

