

**THE IMPACT OF OPEN INNOVATION IN THE BANGLADESHI
GARMENT INDUSTRY**

Mohammad Musa Khan, Zueb Ur Rahman & Khandker Farina Rashid

Abstract

The 'outside-in' model has become obsolete as a result of augmented mobility of workers, accessibility to education, curtailed production life-cycles, intensified competition, globalisation of economies, prevalence of information technology, and the availability of knowledge. In this day and age, enlightened firms around the world are innovating collaboratively across the innovation chain (i.e. Open Innovation) to churn phenomenal outcomes, and, as such, one cannot help but wonder of the prospects of these revolutionary models in a developing nation's context. The authors of this paper posit that distinguishing and assessing human dimensions in relation to the ever-evolving nature of business is essential for organisational harmony and success. Upon examining several top-ranking garment-manufacturing firms in Bangladesh in their national setting, the authors establish a framework of interactive, constant human dimensions so as to measure these firms' capacity relative to the Open Innovation doctrine. The results were bittersweet with positive and negative aspects. The examined firms, in totality, agreed that whilst advanced technology is of vital importance, its influx renders competition more severe, thus putting a renewed emphasis upon human dimensions. The results provided insightful evidence of strengths present in these firms; strengths that coincide with the Open Innovation doctrine well -- e.g. leadership and culture and regulatory instruments thereof, geographical proximity, and so forth. Furthermore, the Bangladeshi government's nascence, so to say, and thus inability to bear lofty organisational ambitions was also found to be a major inhibitor, as well as the nation's cultural ethos in relation to providing full access to other firms as a part of collaborating. It was discovered that the fundamental issue, in large part, for the aforementioned issues stemmed from the social fabric and infrastructure of the national and educational setting, which are indicative of a lack of awareness for a paradigm change. Since Open Innovation is a revolutionary process in itself, it is suspected that Bangladesh shall consume a good number of years before reaching the innovation-driven stage. The study presents leaders with insights that are required to strengthen priorities and direct resources in the pursuit of bringing about desired sensitivities, cognition, behaviours, and other outcomes.

Keywords: Open Innovation, Creativity, Organisational Ambidexterity, Innovation, Absorptive Capacity, Mobility, Human Resources, Social Capital, Network Ties, Leadership, Trust, Emotional Intelligence, Intellectual Capital, Government, Governance, Developing Nation, Bangladesh, Ecosystem, Globalisation, Revolution, Business Model, Paradigm, Geographical Proximity.

Introduction to the Problem

To adapt and secure a competitive advantage has become ever-more central to organisational themes, and it was the age of technology that introduced novel ideas and opportunities. Amidst the sprouting of technology, the fundamental objective of firms has been to reach new customers, either in existing or new markets, and to consciously establish sustainable practices. A firm's alignment of its technological and human assets serves as a measure of its advantage/s or the lack of it.

Vaughan (2001) declares that, 'Practitioners acknowledge that a major system implementation is not just a question of technology nor is it simply an exercise in overhauling a business process; rather, business processes and information technologies must be examined together -- and both within the context of the organisation as a whole.' Furthermore, Bortz (1993) stresses that investments in technological capabilities alone are not sufficient, and that an instrumental culture must be fostered.

The authors of this paper provide a framework through which a firm's latent potential for Open Innovation, in the form of constant natural forces such as network ties, social capital, intellectual capital, and tacit knowledge, are measured in relation to internal dimensions such as leadership and culture and external dimensions such as the effects of government, institutions, and industry. The aforementioned have been identified as fundamental elements that constitute the consummation of Open Innovation.

Importance of the Problem

The human aspect has long been overlooked. The early work assumed technology to be an objective, external force that would have [relatively]deterministic impacts on organisational properties such as structure(McLoughlin, Preece and Dawson, 2000).Authors like Mintz berg (1979) state that there are more dimensions to technology, and that the generic approach to technology creates boundary and measurement ambiguity. Under the now-defunct generic notion, the examination of how different assumptions, knowledge, and techniques could be embedded in different artefacts or practices and how these could have differential consequences for human action and cognition is rendered impossible.

In accordance with Koltz (1992), for instance, the interest on work ergonomics stems from cost economisation and optimisation of use. However, the work today is more cognitively complex, more collective and project-based, more dependent on social skills and personal relationships, more time-pressured, and needs more creativity and innovation capability (Yue and Liang, 2011).

A depth of knowledge and social tools in an employee is not only an amenity from a manager's perspective but a prerequisite for the fostering of innovation and a stimulating culture thereof

since nowadays developing successful technological innovations is essential for creating and sustaining an organisation's competitive advantage (Martín-de Castro et al., 2013). In fact, there have been forces that explain peoples' central role in effective innovations and organisational success.

The latest data released by UNESCO [United Nations Educational, Scientific and Cultural Organisation] Institute for Statistics [UIS], literacy rates for adults and youths, upon a global scale, continue to ascend. Individuals who possess awareness and a depth of knowledge translate into a purpose-built tool for the generation of innovative practices. In fact, authors O'Mahony and Lakhani (2011) posit that communities play an underappreciated role in organisational theory -- critical not only to occupational identity, knowledge transfer, sense-making, social support, innovation, problem-solving, and collective action but, enabled by information technology, increasingly providing socio-economic value -- in areas once inhabited by organisations alone. An organisation's success depends on employee knowledge, experience, creative activity, and qualification, and emphasis is placed on continuous learning and research and development (Hana, 2013). This is where the concept of Open Innovation assumes a pivotal role.

The Open Innovation is a revolutionary business paradigm, whereby, in addition to developing practices within, organisations are encouraged to outsource their assets as well as contract that of others in order to attempt profiting together, thus, in a sense, annulling the conventional notion of competition as we know it. The Open Innovation paradigm may be understood as the antithesis of the traditional vertical integration model where internal research and development [R&D] activities lead to internally developed products that are then distributed by the firm (Chesbrough, Vanhaverbeke, and West, 2006).

Open Innovation business practices challenge orthodox strategies for competitive advantage in that they not only encapsulate the corporate sector but endorse participation from governments, educational institutes and public research organisations, communities, and even individuals. As in some other communities around the world, economic turmoil and financial crisis in Bangladesh and the need for businesses to deal with global hurdles and exploit opportunities may make Open Innovation a prerequisite.

However, in spite of the large volume of empirical work, many of the prescriptions being proposed are fairly general, rather than specific to particular contexts and contingencies (Tidd, 2013). Much of this [available work] seems to have been without much critical analysis of the evidence (Trott and Hartmann, 2009). In addition, as pointed out by Dr. Greenwood (2010), there is little research addressing the innovative capacities needed for a firm's effective management in the knowledge-based economy.

Consequences of the Study

The authors of this paper take issue with the so-called ambiguity of the Open Innovation paradigm in Bangladesh's garment industry. The proponents of Open Innovation tend to offer universal, and often universally positive, prescriptions whereas research suggests that the specific mechanisms and outcomes of Open Innovation models are very sensitive to context and contingency (Tidd, 2013). To the authors' knowledge, no empirical research has been conducted in Bangladesh's context as yet. It is to be noted that Bangladesh must learn alternative approaches since, in accordance with Kirchbach (2003), it remains in the preliminary resource-driven stage, which only threatens its global position. The paper shall give evocative insights to government officials and business leaders and executives, as well as financial and educational institutions in the pursuit of expressing the purposefulness of a new model, that is, the Open Innovation paradigm.

In doing so, officials should be able to adapt and refine corporate strategies, investments, practices, and culture to achieve and sustain enduring competitive advantage (Greenwood, 2010). It is all the more imperative to scrutinise upon this industry because it remains a national mainstay. Approximately 78% of Bangladesh's export earnings can be attributed to the garment industry (Yunus and Yamagata, 2012). The Industry Policy of 2010 envisages an increase in the industry sector's share in GDP to 40 percent by 2021 (Yunus and Yamagata, 2012).

Driven by these concerns, the study proposes to answer the following questions:

- (a) Is leadership and culture in relation to innovation an important blend in the garment sector for Bangladesh?
- (b) Do external forces lead to an improved capacity for Open Innovation?

The questions in turn are guided by the following objectives:

- (a) To address the human element of Open Innovation; its quintessential features and applications in Bangladesh's context.
- (b) To scrutinise upon the significance of external forces and consequently measure their compatibility in Bangladesh's context to Open Innovation.

Literature Review

Technological progressions in businesses are a commonplace in today's world. In spite of technology's importance, it gives rise to a stalemated situation between firms, necessitating them to discover novel methods of outpacing one another. Due to this, firms are readily investing resources into nurturing a revolutionary leader. A competent leader's capacities, out of reach of technology and thus impossible to replicate, helps build a dynamic culture wherein the most

human of aspects team to produce a competitive advantage beyond reach, or so has been the objective.

Nowadays, business Gurus themselves profess the inadequacy of internal resources. The internal resources or dimensions of leadership and culture are therefore sought to be paired with the larger world. Such a radical move means pairing with the facilitators of these human aspects, namely educational institutes, the government, and other business entities. This is where the concept of Open Innovation makes paramount sense.

Internal Dimensions

Importance of Advanced Technology

Sloane (2011) states that most organisational heads view the essence of collaboration as key to their success with innovation, being aware that internal resources alone cannot suffice.

The next step beyond collaboration is 'Open Innovation' (Sloane, 2011), a concept developed by Henry Chesbrough, an American organisational theorist, author, and adjunct professor (Haas-Berkeley, 2015).

Porter (2013) states, 'Companies in developing countries typically have lower factor costs, such as labour, and this might let them compete for a time with rivals outside the country even if they are behind in Operational Effectiveness and their products are not distinctive. But factor cost advantages tend to diminish over time, and eventually companies in developing countries will need to address both of those issues.' Mintzberg and Kotter are of the same opinion and posit that change and continuity must be managed simultaneously (Moore, 2012). This is incredibly true in Bangladesh's context.

The authors identify the drivers of innovation with authors, Goff in and Mitchell (2010), namely technological advances, changing business environment, consumers' needs, and intensified competition.

The Role of Leadership

Ware, Michaels and Primer (2004) state that leadership begins with values and their purpose is to indicate what is deeply valued. Kotter's (2008) studies indicate that leaders are essential to bringing about a change in established cultures by, for instance, creating an atmosphere of 'crisis'.

Agbor (2008) posits that creativity and innovation require leaders to drive and control deliberate changes, transforming them into creative, effective, and productive processes. In broader terms, it is to be understood that there are four human forces that accentuate effective leadership, namely, social capital, emotional intelligence, and mobility/availability of educated individuals.

The mobility and availability of highly educated people has increased over the years (Chesbrough, 2012). As a result, large amounts of knowledge exist outside the research laboratories of large companies (Miryala and Aluvala, 2015). In addition to that, when employees change jobs, they take their knowledge with them, resulting in knowledge flows between firms (Chesbrough, 2012) -- this concept is explained in Nonaka's (1991) work as 'tacit knowledge'.

Social Capital

The term 'social capital' broadly refers to a network of *social ties*. Social capital has been related to intellectual capital because it shows an intangible nature itself, and because it can allow developing and strengthening intellectual capital from external sources thanks to network ties (Lopez Saez, 2010). Chang et al. (2006) state that stronger social capital shall bloom more organisational learning because it involves interaction, which leads to innovativeness. The level of organisational innovativeness [in turn] will significantly affect the degree of accumulating intellectual capital and influence organisational performance (Chang et al., 2006). These findings are consistent with Law (2000) [upon Gherardi and Nicolini's results] who discovered that organisational learning is an outcome of interaction amongst individuals. Consistent with Chang et al. (2006), Krebs, (2008) states that social capital is a prerequisite for organisational learning, adaptability, and agility, either within an organisation or beyond its peripheries to other entities. In fact, Porter (1990) states that innovation results as much from organisational learning as it does from formal R&D.

Culture

The ability to consistently conceive of, create, and bring to market new innovations is highly dependent on the quality of talent and the environment in which they [employees] work (Sinar, Wellins and Pacione, 2015). Bureaucracy, politics, hierarchical structures, conventional approaches to problem solving, and the need to be publicly accountable are viewed as 'impediments to innovation and creative strategy' (Barsh, 2008).

These barriers tend to create a risk-averse culture, both individually and corporately that further stifles the creativity needed to develop and deliver first-rate products, services, experiences, and processes (Heinrichs, 2009). As a result, an organisation may find itself with a limited ability to attract and retain the competent, innovative employees. Leadership is, therefore, a mechanism of sorts to ensure the best possible talent, and a dynamic culture is paramount since, as Khurosani (2013) argues, dynamism invests leaders with an elevated capacity for the undertaking of risks for better gains. As a result of dynamism manifest in innovative practices, organisations develop strong internal and external social networks, which in turn render their atmospheres conducive to geniuses. Such a setting may lead to an increase in intellectual capital because organisations, as stated by Hargadon (2002), realise advanced linking capabilities and sooner recognise opportunities.

The authors, therefore, propose the role of leadership and culture as the two lynchpins which help drive the model forward.

External Dimensions

The external dimensions may be best symbolised by the *triple helix* framework. The *triple helix* is the most well-known framework used to describe collaboration between universities, policy institutions, and industry (Etzkowitz and Leydesdorff (2000); Leydesdorff and Meyer (2003). Since business entities are in their infancy with regard to Open Innovation, the authors recognise educational institutes and the government as two of the most prominent and capable of the external dimensions.

Educational Institutes

For a university, external engagement denotes the effort of the academic institution to interact with its appropriate communities around intellectual, educational, social, cultural economic and technological development (Gutteridge, 2007). The generic economic and social benefits of universities, such as educating cohorts of graduates, generating scientific knowledge and creating instrumentation infrastructures, have long been recognised as an important source of industrial innovation, particularly in some industries (Mansfield 1991; Salter and Martin 2001). After getting their academic degrees many students will act as boundary spanners in increasingly open business environments (Huff, Möslin and Reichwald, 2013). Organisations in both manufacturing and service sectors increasingly embrace a collaborative approach to innovation (Chesbrough 2003; 2011). Challenges such as employee-related challenges [i.e. turnover, disengagement, and job discontentment] paired with customer-related challenges [i.e. increased customer expectations and increased service efficiency expectations] have prompted an increasing number of organisations to consider boundary spanning.

The Role of the Government

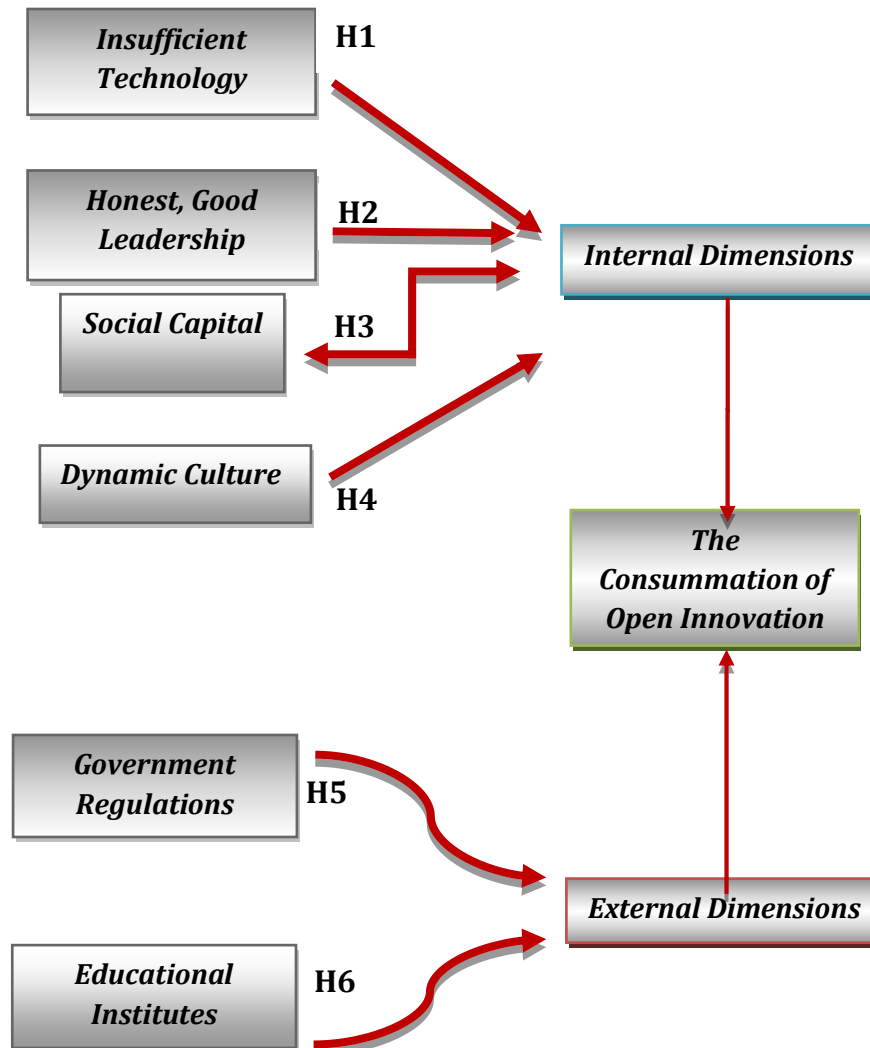
Government policies have a direct impact on the innovation environment in which companies operate and the R&D productivity of a country/region through the creation of institutional factors such as the legislation with respect to intellectual property, competition and taxation policies, and government spending in research activities (OECD, 1998).

Mahmood and Rufin (2005) endorse the view that when the technological frontier is afar, governments in these nations can promote industrialisation by actively directing the flow of resources to firms and encouraging firms to invest such resources in technological upgrading. In Kirchbach's (2003) terms, this is the stage past the resource-driven stage, whereby enhancements are made to imported technologies; joint ventures are heavily pursued and elaborate investments in trade-related infrastructure are committed to (e.g. roads). The focus of the national export strategy at this second stage should be on further improving the business environment through

revisions in regulatory arrangements [customs, taxation and company law] (Kirchbach, 2003). Moreover, when the government sees through its business environment to an advanced state, Mahmood and Rufin (2005) state, ‘Government can maximise innovation by playing a merely facilitating role that allows innovation networks to thrive without restraint.’ Whilst external connections are certainly of growing importance, the influence of the national education system, industrial relations, technical and scientific institutions, government policies, cultural traditions and many other national institutions is fundamental (Groeneveld, 2008).

Conceptual Model & Hypotheses

Conceptual Model



Hypotheses Formulation

H1: The importance of technology has made the business atmosphere intense in terms of competition.

H2: Good, honest leadership can supremely enhance organisational competitiveness.

H3: Social capital is a leveraging instrument for a firm's corporate culture, resulting in organisational dynamism and competitiveness.

H4: Dynamic corporate culture can bring better opportunities for firms.

H5: External collaboration requires a nation's government to instil amendments for an atmosphere suitable to Open Innovation practices.

H6: Establishing a relationship with educational institutes facilitates the Open Innovation paradigm.

Research Methodology

Saunders, Lewis and Thorn hill (2009) mention that a strategy should not be thought to be exclusive so long as the objectives are met. Therefore, in keeping with this notion, the authors of this study opt for surveys and single case analysis [triangulation] as a means of mustering data. A questionnaire containing 9 questions -- 4 supplementary -- was prepared for executives and managers at several higher-echelon garment firms. In line with Robson (2002), in-depth interviews [semi-structured] were conducted with the top management in order gain a brighter insight. A total of 120 respondents, executives and managers of 7 Ready-made Garments from Saver and Gazipur, were chosen for the survey/questionnaire. The survey embodied close-ended questions in the form of either agreeable or disagreeable statements represented by a Likert scale. Subjected to deliberation, each respondent was to correspond from a list of five options [1= Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree]. Upon intervals, the interviewee conducted rounds to ensure optimal comprehension of the questions on the respondent's part in case of potential hindrances. The yielded outcomes were subsequently measured, utilising SPSS, in terms of Pearson's Correlation, Standardised Cronbach Alpha, Factors Analysis (Principal Factors Analysis [PCA]),and Regression Analysis.

Research Analysis

Advanced Technology & Competition

H1: The importance of technology has made the business atmosphere intense in terms of competition.

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
Importance of Advanced Technology	4.9167	.27754	120
Technology & Disadvantages	3.7833	1.19652	120

Correlations

		Importance of Advanced Technology	Technology & Disadvantages
Importance of Advanced Technology	Pearson Correlation	1	.704**
	Sig. (2-tailed)		.000
	N	120	120
Technology & Disadvantages	Pearson Correlation	.704**	1
	Sig. (2-tailed)	.000	
	N	120	120

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Importance of Advanced Technology	Technology & Disadvantages
Spearman's rho	Importance of Advanced Technology	Correlation Coefficient	1.000
		Sig. (2-tailed)	.510**
		N	.000
	Technology & Disadvantages	Correlation Coefficient	1.000
		Sig. (2-tailed)	.510**
		N	.000
			120
			120

** . Correlation is significant at the 0.01 level (2-tailed).

The results above are used as means of identifying the correlation between the importance of advanced technology and the disadvantages that may be burgeoned thereof. The rule of thumb is that if the Pearson correlation (r) figure is close to 1.00 (**), it is indicative of a very strong relationship between the two variables. However, should the figure not equate to 0.50 (**), it is expressive of a weak relationship. As per our calculation, the correlation achieved is .704 (**), close to the figure 1.00 (**), expressive of a strong relationship between advanced technology and disadvantages thereof, correctly implying, as per our premise, that advanced technology, as crucial as it is, is not sufficient in itself. As the need for advanced technology augments, so do the disadvantages due to an influx. As the statistics show, if advanced technology is being endorsed and employed by a great many organisations, competition shall only intensify. As the concept of Open Innovation articulates, the human element is of greater importance and utilisation.

To add to the calculations' legitimacy, the correlations are significant at the 0.01 level, thus rejecting the null hypothesis. Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- Owen and Demb (2004) state that the importance of a leaders' vision about technology bears greater merit than technology itself.
- There is one principle that undergirds our [firm's] successes: this is about people, not technology (Trost and Yohe, 1999).

Leadership & Flexible Culture (Teamwork)

H2: Good, honest leadership can supremely enhance organisational competitiveness.

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Flexible Culture (Teamwork)	3.8583	1.07137	120
Role of Leadership	4.5250	.75551	120

Correlations

		Flexible Culture (Teamwork)	Role of Leadership
Pearson Correlation	Flexible Culture (Teamwork)	1.000	.840
	Role of Leadership	.840	1.000

Sig. (1-tailed)	Flexible Culture (Teamwork)	.	.000
	Role of Leadership	.000	.
N	Flexible Culture (Teamwork)	120	120
	Role of Leadership	120	120

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Role of Leadership ^b	.	Enter

a. Dependent Variable: Flexible Culture (Teamwork)

b. All requested variables entered.

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	96.413	1	96.413	283.154	.000 ^b
	Residual	40.179	118	.340		
	Total	136.592	119			

a. Dependent Variable: Flexible Culture (Teamwork)

b. Predictors: (Constant), Role of Leadership

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.533	.325		-4.719	.000
	Role of Leadership	1.191	.071	.840	16.827	.000

a. Dependent Variable: Flexible Culture (Teamwork)

Coefficient Correlations^a

Model		Role of Leadership
1	Correlations	1.000
	Covariances	.005

a. Dependent Variable: Flexible Culture (Teamwork)

The generated calculations from the survey results demonstrate a supremely strong relationship between the two variables, meaning that a rise in leadership subsequently gives rise to an environment that favours dynamism in corporate culture and vice versa. The generated Pearson (r) figure is a favourable .840 (**), closest to the Pearson (r) figure of 1.00 (**). The calculations propose an important attribute of the Open Innovation doctrine in that the establishment of advanced technology alone does not guarantee organisational success in this era. Instead, it is the pairing with case sensitive human dimensions, one of them being irreplaceable leadership [wherein liberties beget creativity, confidence, and sustained commitment], that help realise organisational success. These findings are in-line with the survey question that addressed employee partaking as a means of establishing an atmosphere that is hard to replicate.

To add to the calculations’ legitimacy, the correlations are significant at the 0.01 level, thus rejecting the null hypothesis. Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- Jude-York (2003) suggests high performing teams who have mastered technology enhancements and developed the corresponding human/social systems have made significant improvements in their productivity.
- Porter-O’Grady and Malloch (2010) contend that as the innovation culture emerges, the role of the innovation leader gains importance. Moreover, an innovative culture cannot sustain itself without the sight of a leader.

Social Capital & Employee Partaking

H3: Social capital is a leveraging instrument for a firm’s corporate culture, resulting in organisational dynamism and competitiveness.

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
Social Capital	4.8250	.38156	120

Employee Participation	3.8583	1.07137	120
------------------------	--------	---------	-----

Correlations

		Social Capital	Employee Participation
Social Capital	Pearson Correlation	1	.802**
	Sig. (2-tailed)		.000
	Sum of Squares and Cross-products	17.325	39.025
	Covariance	.146	.328
	N	120	120
Employee Participation	Pearson Correlation	.802**	1
	Sig. (2-tailed)	.000	
	Sum of Squares and Cross-products	39.025	136.592
	Covariance	.328	1.148
	N	120	120

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

			Social Capital	Employee Participation
Spearman's rho	Social Capital	Correlation Coefficient	1.000	.682**
		Sig. (2-tailed)	.	.000
		N	120	120
	Employee Participation	Correlation Coefficient	.682**	1.000

	Sig. (2-tailed)	.000	.
	N	120	120

**. Correlation is significant at the 0.01 level (2-tailed).

The results, with the calculated figure of .802 (**), closer to the Pearson (r) figure of 1.00 (**), demonstrate a strong relationship between the two variables and thus correctly denote that if social capital is of a significant force within a firm, the resulting disposition and actions would enhance organisational dynamism and competitiveness. The development of social capital, therefore, is an essential aspect of a firm’s philosophy, whereby a firm is able to instil a code of continual improvement and inexhaustible enrichment, which conjointly lead to a unique position in the market.

To add to the calculations’ legitimacy, the correlations are significant at the 0.01 level, thus rejecting the null hypothesis. Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- A collaborative climate is positively related to cognitive social capital because it leads to shared identification, visions and languages among employees and community members (Baumüller, 2007).
- Social capital can be defined simply as the existence of a certain set of informal values or norms shared among members of a group that permit cooperating among them; communities depend on mutual trust [derived therein] and will not rise spontaneously without it (Fukuyama, 1995).

Flexible Culture (Teamwork) & External Collaboration

H4: Dynamic corporate culture can bring better opportunities for firms.

Factor Analysis/Principal Components Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Flexible Culture (Teamwork)	3.8583	1.07137	120
External Collaboration	3.5167	.89802	120

Correlation Matrix

		Flexible Culture (Teamwork)	External Collaboration
Correlation	Flexible Culture (Teamwork)	1.000	.872
	External Collaboration	.872	1.000
Sig. (1-tailed)	Flexible Culture (Teamwork)		.000
	External Collaboration	.000	

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.500
Bartlett's Test of Approx. Chi-Square Sphericity	167.479
df	1
Sig.	.000

Communalities

	Initial	Extraction
Flexible Culture (Teamwork)	1.000	.936
External Collaboration	1.000	.936

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.872	93.577	93.577	1.872	93.577	93.577
2	.128	6.423	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component
	1
Flexible Culture (Teamwork)	.967
External Collaboration	.967

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

The generated calculations reveal an exceptionally strong relationship between the two variables. As per the Open Innovation theology, the more dynamic a corporate culture is -- in the areas of open-mindedness, flexibility, participation, creativity, innovativeness, and commitment -- the better it is able to adapt to Open Innovation practices like external collaboration, and less likely to experience friction in the transformation process.

Indeed, with a favourable Pearson (r) figure of .872 (**), close to the Pearson (r) optimal figure of 1.00 (**), the calculation goes to show that Bangladeshi garment firms possesses the attribute that is of utmost importance to the entire paradigm. Their formal policies and leadership qualities, evidently, are aligned to produce conditions that are very fertile for an evolutionary transformation.

To add to the calculations' legitimacy, the correlations are significant at the 0.01 level, thus rejecting the null hypothesis. Moreover, the KMO value demonstrates an adequate relationship. The KMO value varies between 0 and 1, and whilst numbers closest to the figure 1 (e.g. 0.93) demonstrates a superb relationship, a KMO values between 0.5 and 0.7 are mediocre. Kaiser (1974) recommends accepting values greater than 0.5 as acceptable. The KMO value of 0.5, therefore, renders the authors fairly confident that factor analysis is appropriate, given the highly significant relationship ($p < 0.001$).

Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- Miles et al., (1998) have supported the necessity of collaboration within knowledge exploitation because it is a collaborative process, and knowledge-based approaches cannot succeed without effective collaboration.
- Nonaka (2007) states that teams play a central role in the knowledge-creation company because they provide a shared context where individuals can interact with each other and engage in the constant dialogue on which effective reflections depend.

External Collaboration & Government Capacities

H5: External collaboration requires a nation’s government to instil amendments for an atmosphere suitable to Open Innovation practices.

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
External Collaboration	3.5167	.89802	120
Government	1.9500	.81838	120

Correlations

		External Collaboration	Government
Pearson Correlation	External Collaboration	1.000	.218
	Government	.218	1.000
Sig. (1-tailed)	External Collaboration	.	.008
	Government	.008	.
N	External Collaboration	120	120
	Government	120	120

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.218 ^a	.048	.040	.88005

a. Predictors: (Constant), Government

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.577	1	4.577	5.910	.017 ^b
	Residual	91.389	118	.774		
	Total	95.967	119			

a. Dependent Variable: External Collaboration

b. Predictors: (Constant), Government

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.049	.208		14.637	.000
	Government	.240	.099	.218	2.431	.017

a. Dependent Variable: External Collaboration

Coefficient Correlations^a

Model		Government
1	Correlations	Government
		1.000
	Covariances	Government
		.010

a. Dependent Variable: External Collaboration

A Pearson (r) figure with a magnitude less than 0.5 (**) expresses a moderate uphill, yet positive, linear relationship between two variables, whilst a Pearson (r) figure that falls below 0.3 (**) expresses a weak uphill linear relationship. The generated calculations exhibit a Pearson (r) figure of .218 (**) which implies that low scores on one variable is associated with low scores on the other variable. In other words, should the government capacity increase in terms of adequate policies and other prerequisite measures, so shall the ability for organisations to uphold seemingly spontaneous external collaborations.

The calculations are tremendously consistent with our earlier speculation and the outcomes reflect answers gleaned from management experts at the garment firms during focus group discussions.

The correlations are significant at the 0.05 level, reasonably securing legitimacy at a 5 percent risk of concluding that a difference exists. Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- Leyden and Link (2012) express that organisations cannot tackle all hurdles single-handedly and therefore the government has a significant role to play by supporting innovations in the private sector and rewarding it.
- Shavinina (2003) mentions that regulations, standards, and rules in the form of institutions [science and technology infrastructure] are in the governments' control, and these cannot change without the governments' cooperation.

External Collaboration & Educational Institutes

H6: Establishing a relationship with educational institutes facilitates the Open Innovation paradigm.

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
External Collaboration	3.5167	.89802	120
Universities	3.8417	1.06112	120

Correlations

		External Collaboration	Universities
External Collaboration	Pearson Correlation	1	.836**
	Sig. (2-tailed)		.000
	N	120	120
Universities	Pearson Correlation	.836**	1
	Sig. (2-tailed)	.000	
	N	120	120

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

			External Collaboration	Universities
Spearman's rho	External Collaboration	Correlation Coefficient	1.000	.757**
		Sig. (2-tailed)	.	.000
		N	120	120
	Universities	Correlation Coefficient	.757**	1.000
		Sig. (2-tailed)	.000	.
		N	120	120

** . Correlation is significant at the 0.01 level (2-tailed)

The results above are used as means of establishing the dynamics of collaborating with educational institutes. If the Pearson correlation (r) figure is close to 1.00 (**), it is indicative of a very strong relationship between the two variables, whilst a figure which does not equate to 0.50 (**) expresses a weak relationship. As per our calculation, the correlation achieved is .836 (**), close to the figure 1.00 (**), expressive of a strong relationship between keen firms and educational institutes. The statistics reveal that the link between academics and industry is growing by leaps and bounds. If collaborations are reinforced using educational institutes, firms shall find themselves in greater harmony with the Open Innovation paradigm as prevailing gaps in capabilities for the cause of innovation shall be filled by young and self-motivated individuals engaged in both orthodox and unorthodox disciplines.

To add to the calculations' legitimacy, the correlations are significant at the 0.01 level, thus rejecting the null hypothesis. Furthermore, since the sample size is relatively small, the authors have used secondary resources for justification:

- The diversity of channels through which knowledge and technology flow between firms and universities testifies that firms work with universities not just to access 'novel' technological knowledge but also for supporting and completing ongoing development activities (Mac Pherson, 2002; Cohen, Nelson and Walsh, 2002; Carayol, 2003; Lee, 2000).
- Universities carry a central role, especially in regional contexts, that goes beyond only supplying technology and trained knowledge workers and is rooted in bidirectional or network models of collaboration rather than unidirectional knowledge transfer (Meyer-Khramer and Schmoch, 1998; Perkmann and Walsh, 2007).

Conclusion & Recommendations

Principal Findings

Bangladesh, with a score of 20 is considered a collectivistic society (Hofstede, 2015). Diaconu (2011) asserts, highlighting culture, that innovation may be achieved only by those countries with a high level of human and social capital. The garment firms subjected to this tedious study exhibit a corporate culture which is quite capable of fostering innovation upon a grander scale. The relationship is positive because the findings demonstrate the employees' trust in their leaders, and the concept of trust in the ever-developing field of business is essential for the activation of emotional intelligence, which, given suitable conditioning, offers an edge on a grand scale.

Cultural Dimensions	Bangladesh	Index (Score)		
		Highest	Lowest	Mean
Power distance	80	104	11	58
Individualism	20	91	06	48
Masculinity-femininity	55	95	05	50
Uncertainty avoidance	60	112	08	60

Table 1: Compiled by Rahman (2005) from (Hofstede, 2001)

Their flexible yet orderly atmosphere had been created through leadership integrity, as trust is based on expectations, as well as demonstrations, of leaders being open, honest and fair (Mai and Akers on, 2003). Employee commitment is also directly related to how open their organisation is with information (Mai and Akers on, 2003).

It is evident that the garment firm’s management teams have punctiliously created an organisational climate of continual improvement, which demonstrates its prospects of adopting the Open Innovation paradigm. The firms have to themselves suitable conditions of a wealth of social and intellectual capital, due in large part to their geographic configuration [in relation to educational institutes and other firms]. The dynamic capabilities of the firm consist of the knowledge and processes needed for recognising new business opportunities and reconfiguring internal and external organisational skills, resources and competences to match the requirements of a changing environment (Helfat, 1997; Teece, Pisano and Shuen, 1997; Zahra and George, 2002). But an ambitious fraction of the garment industry or even the entire industry as a whole may only do as much as their capacities permit. Moreover, as anxious these firms are in forming alliances, fully subjecting other firms to one’s assets remains controversial, due in large part to the national ethos and an absence of awareness by means of apt government regulations.

The government plays a direct role in the livelihood of the firms; therefore, it is vital that it maintains pace with its industries. Its progressive steps in terms of training programmes for the underprivileged and the encouragement of private equity funds and hedge funds compel European and American entities to consider investing in Bangladesh. However, much more is expected of the country’s governance. The firms of this study’s core, in spite of showing clear signs of Open Innovation, suffer from fundamental factors, namely the nation’s young age, poor infrastructure, level of poverty, inadequate policies, and overall awareness. In the garment industry, the cost of energy, communications [road and sea transport], and customs play a major role. The authors conclude that it eventually boils down to education. In Bangladesh’s context, it may be too early to implement Open Innovation practices. Economic historians have long regarded the uneven distribution of technological skills across the world as the proximate cause of differences in economic development (Landes, 1999; Mokyr, 1990).

This pattern is evident of an acknowledgement that whilst the government has been gradually attempting to contribute to its industries, expressing keenness, it suffers from mismanagement, corruption, inadequate and insubstantial policies and structures, and scarce resources. These findings are consistent with authors like Mintzberg (1979), McLoughlin, Preece and Dawson (2000), Groeneveld (2008), and Porter (2013), amongst others, who suggest that the human element, indeed, of the essence by the standards of today's evolving landscape, but as Munkvold, (2003), Sloane (2011), Teece (2010), Porter (2013), and Goffin and Mitchell (2010) imply, firms in the knowledge-based economy must dare to scan the horizon for unorthodox and sustaining approaches to business. Therefore, the ramifications of an absence of an appropriate national education system, *triple helix* bearings, and government measures and the prevalence of an encumbering cultural ethos blatantly ignore these tell-tale organisational characteristics and thus preclude firms from evolving further.

Research Limitations

Every research is subjected to a range of specific limitations. Some of which have been identified with regard to this study are as follows:

1. Oneness: As fine-tuned as the methodology is, there is always the possibility of the sample failing to represent the entire population.

The reason could be due to the sample size or oneness of the organisational setting. Yet another possibility attributed to 'oneness' is in the nature of the survey itself in relation to how respondents grasp each question.

2. Inaccuracy: The sample size or oneness of the organisational setting may instil inaccuracies in the study, leading to a biased and unreliable outcome. Yet another possibility is that of contrived answers, either out of simple insouciance or peer/senior pressure.
3. Novelty: The subject of the study, in large part due to its novelty, may possibly discount legitimacy from the work put forth because of the calibration of several theories to form a picture. The theories may be deemed weak and the subject unsubstantial in relation to the context. But, of course, this case is most rare as appropriate measures have been executed.
4. Resources: Resources, such as time and money, may curb an individuals', especially a students', abilities from delivering an accurate account of the phenomenon. It is possible that access to research material and other crucial sources of information may have been denied.

Scope for Further Research

The results have been most promising as it reveals the evolving perceptions of firms in Bangladesh following recent events and, at the same time, the great number of obstacles that inhibit further. Whilst this study addressed limited questions, it would be intriguing to view the effort put hitherto confirmed, refined, or even refuted by academics alike. In doing so, the integrated studies shall form the bedrock and prove prerequisite in raising awareness for a revolutionary method of conducting business.

As discovered, there are a number of dimensions related to this topic, namely physiological, sociological/cultural, organisational/administrative, local proximity, geopolitical, and political. It is but imperative to scrutinise upon the aforementioned dimensions in order to engender empirical data and thus validate them. A better understanding of the environmental contingencies could cause an epiphany of incipient trends and intelligence for management practice. But, of course, the discovery of further aspects that impact the practice of and culture for Open Innovation is essential, such as the utilisation of intellectual property, the upshots of social networks and emotional intelligence, and the dimension of trust in inter-firm relationships.

References

- Adult & Youth Literacy. (2014). 1st ed. [ebook] UNESCO Institute for Statistics (UIS), pp.2-3. Available at: <http://www.uis.unesco.org/literacy/Documents/fs-29-2014-literacy-en.pdf> [Accessed 3 Oct. 2015].
- Agbor, E. (2008). Creativity and Innovation: The Leadership Dynamics. *Journal of Strategic Leadership*, [online] 1(1), pp.39-40. Available at: http://www.regent.edu/acad/global/publications/jsl/vol1iss1/JSL_Vol1iss1_Agbor.pdf.
- Barsh, J. (2008). Innovative Management: A Conversation with Gary Hamel and Lowell Bryan. *The McKinsey Quarterly*, 1, pp.24-35.
- Baumüller, M. (2007). Managing Cultural Diversity: An Empirical Examination of Cultural Networks and Organizational Structures as Governance Mechanisms in Multinational Corporations. Bern: P. Lang, p.194.
- Bbs.gov.bd, (2015). *Bangladesh Bureau of Statistics*. [online] Available at: <http://www.bbs.gov.bd/> [Accessed 4 Oct. 2015].
- Bortz, W. (1993). Implementing a Culture of Change. In: CAUSE Annual Conference. [online] San Diego, California: CAUSE, pp.1-3. Available at: <https://net.educause.edu/ir/library/text/CNC9309.txt> [Accessed 13 Feb. 2016].

- Carayol, N. (2003). Objectives, Agreements and Matching in Science–industry Collaborations: Reassembling the Pieces of the Puzzle. *Research Policy*, 32(6), pp.887-908.
- Chang, S., Chiang, C., Chu, C. and Wang, Y. (2006). The Study of Social Capital, Organizational Learning, Innovativeness, Intellectual Capital, and Performance. *The Journal of Human Resource and Adult Learning*, [online] pp.64-65 and 69. Available at: <http://www.hraljournal.com/Page/10%20Su-Chao%20Chang.pdf> [Accessed 25 Dec. 2015].
- Chesbrough, H. (2003). The Logic of Open Innovation: Managing Intellectual Property. *California Management Review*, 45(3), pp.33-58.
- Chesbrough, H. (2005). *Open Innovation: A New Paradigm for Understanding Industrial Innovation*. 1st ed. [ebook] Copenhagen, Denmark, pp.2-3. Available at: http://www.druid.dk/uploads/tx_picturedb/ds2005-1592.pdf [Accessed 16 Nov. 2015].
- Chesbrough, H. (2011). *Open Innovation*.
- Chesbrough, H. (2012). *The Thinker Interview: Henry Chesbrough*.
- Chesbrough, H. and Garman, A. (2009). *How Open Innovation Can Help You Cope in Lean Times*. [online] Harvard Business Review. Available at: <https://hbr.org/2009/12/how-open-innovation-can-help-you-cope-in-lean-times> [Accessed 11 Dec. 2015].
- Chesbrough, H., Vanhaverbeke, W. and West, J. (2006). *Open innovation*. Oxford: Oxford University Press, pp.1-3.
- Cohen, W., Nelson, R. and Walsh, J. (2002). Links and Impacts: The Influence of Public Research on Industrial R&D. *Management Science*, 48(1), pp.1-23.
- Diaconu, L. (2011). *The Role of Innovation for the Economic Growth and Development of the States. The Case of the Emerging Countries*. Ph.D. Al. I. Cuza University, Iasi, Romania.
- Etzkowitz, H. and Leydesdorff, L. (2000). The Dynamics of Innovation: from National Systems and “Mode 2” to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), pp.109-123.
- Facultybio.haas.berkeley.edu, (2015). *Henry Chesbrough | Faculty Directory | Berkeley-Haas*. [online] Available at: <http://facultybio.haas.berkeley.edu/faculty-list/chesbrough-henry> [Accessed 10 Nov. 2015].

- Fukuyama, F. (1995). *Trust: The Social Virtues and the Creation of Prosperity*. New York: Free Press.
- George, D. and Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference*. 4th ed. Boston: Allyn & Bacon, p.231.
- Gladwell, M. (2003). *Designs for Working: Why Your Bosses Want to Turn Your New Office into Greenwich Village*. In: R. Cross, A. Parker and L. Sasson, ed., *Networks in the Knowledge Economy*, 1st ed. New York: Oxford University Press, pp.180-189.
- Greenwood, D. (2010). *Collaborate to Innovate: Innovative Capacity Index for Effective Open Innovation*. 1st ed. [ebook] p.4. Available at: https://www.academia.edu/4451912/Collaborate_to_Innovate_Innovative_Capacity_Index_for_Effective_Open_Innovation [Accessed 6 Oct. 2015].
- Groeneveld, R. (2008). *The Government as Actor in Open Innovation: How the Dutch Government Stimulates Open Innovation*. 1st ed. [ebook] Enschede, Netherlands: University of Twente, p.1. Available at: http://essay.utwente.nl/59285/1/scriptie_R_Groeneveld.pdf [Accessed 13 Oct. 2015].
- Gutteridge, T. (2007). *Outreach and Engagement: Afterthought or Strategic Priority?*. *Mid-American Journal of Business*, [online] 22(1), pp.5-6. Available at: <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=62e97441-4753-4eec-b019-12eb1a7f15a0%40sessionmgr4002&vid=5&hid=4201> [Accessed 14 Feb. 2016].
- Hana, U. (2013). *Competitive Advantage Achievement through Innovation and Knowledge*. *Journal of Competitiveness*, [online] 5(1), pp.82-83. Available at: <http://www.cjournal.cz/files/127.pdf>.
- Hargadon, A. (2002). *Brokering Knowledge: Linking Learning and Innovation*. *Research in Organizational Behavior*, 24, pp.41-85.
- Heinrichs, D. (2009). *Strategies for an Innovative Culture in the Saskatchewan Public Service Commission*. M. A. Royal Roads University.
- Helfat, C. (1997). *Know-how and Asset Complementarity and Dynamic Capability Accumulation: the Case of R&D*. *Strat. Mgmt. J.*, 18(5), pp.339-360.
- Hofstede, G. (2001). *Culture's consequences*. Thousand Oaks, Calif.: Sage Publications.

- Hofstede, G. (2015). *Bangladesh - Geert Hofstede*. [online] Geert-hofstede.com. Available at: <http://geert-hofstede.com/bangladesh.html> [Accessed 5 Oct. 2015].
- Huff, A., Möslin, K. and Reichwald, R. (2013). *Leading Open Innovation*. Cambridge, Mass.: MIT Press.
- Innovation for Development: A Discussion of the Issues & an Overview of Work of the OECD Directorate for Science, Technology & Industry. (2012). 1st ed. [ebook] Organisation for Economic Co-operation and Development (OECD), pp.5-6. Available at: <http://www.oecd.org/innovation/inno/50586251.pdf> [Accessed 12 Sep. 2015].
- Jude-York, D. (2003). Technology Enhanced Teamwork: Aligning Individual Contributions for Superior Team Performance. *The York Consulting Team*.
- Kaiser, H. (1974). An Index of Factorial Simplicity. *Psychometrika*, 39(1), pp.31-36.
- Kirchbach, F. (2003). A Country's Competitive Advantage. *International Trade Forum Magazine*, [online] (1). Available at: <http://www.tradeforum.org/A-Countrys-Competitive-Advantage/> [Accessed 29 Dec. 2015].
- Klotz, H. (2011). Postmodern Architecture. In: C. Jencks, ed., *The Post-Modern Reader*, 1st ed. London: St. Martins Press, pp.234-48.
- Kotter, J. (2008). *Corporate Culture and Performance*. [S.l.]: Free Press.
- Krebs, V. (2008). Social Capital: the Key to Success for the 21st Century Organization. *IHRIM Journal*, [online] 12(5), p.39. Available at: http://orgnet.com/IHJour_XII_No5_p38_42.pdf.
- Landes, D. (1999). *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor*. New York: W.W. Norton & Company.
- Law, J. (2000). Comment on Suchman, and Gherardi and Nicolini: Knowing as Displacing. *Organization*, 7(2), pp.349-354.
- Lee, Y. (2000). The Sustainability of University–Industry Research Collaboration: An Empirical Assessment. *The Journal of Technology Transfer*, 25(2), pp.111-133.
- Leyden, D. and Link, A. (2012). *Government's Role in Innovation*. Dordrecht: Springer Science & Business Media.

- Leydesdorff, L. and Meyer, M. (2003). The Scientometrics of a Triple Helix of University-Industry-Government Relations (Introduction to the Topical Issue). *Scientometrics*, 58(2), pp.191-203.
- Lopez Saez, P. (2010). *Intellectual Capital and Technological Innovation*. Hershey, PA: Information Science Reference, p.14.
- MacPherson, A. (2002). The Contribution of Academic-industry Interaction to Product Innovation: The Case of New York State's Medical Devices Sector. *Papers in Regional Science*, 81(1), pp.121-129.
- Mahmood, I. and Rufin, C. (2005). Governments' Dilemma: The Role of Government in Imitation and Innovation. *Academy of Management Review*, 30(2), pp.338-360.
- Mai, R. and Akerson, A. (2003). *The Leader As Communicator: Strategies and Tactics to Build Loyalty, Focus Effort, and Spark Creativity*. New York: AMACOM, American Management Association, p.22.
- Mansfield, E. (1991). Academic Research and Industrial Innovation. *Research Policy*, 20(1), pp.1-12.
- Martín-de Castro, G., Delgado-Verde, M., Navas-López, J. and Cruz-González, J. (2013). The Moderating Role of Innovation Culture in the Relationship Between Knowledge Assets and Product Innovation. *Technological Forecasting and Social Change*, 80(2), pp.351-363.
- McLoughlin, I., Preece, D. and Dawson, P. (2000). *Technology, Organizations, and Innovation*. London: Routledge, pp.74-75.
- Meyer-Krahmer, F. and Schmoch, U. (1998). Science-based Technologies: University–industry Interactions in Four Fields. *Research Policy*, 27(8), pp.835-851.
- Miles, G., Miles, R., Perrone, V. and Edvinsson, L. (1998). Some Conceptual and Research Barriers to the Utilization of Knowledge. *California Management Review*, 40(3), p.286.
- Mintzberg, H. (1979). *The Structuring of Organizations*. Englewood Cliffs, N.J.: Prentice-Hall.
- Miryala, R. and Aluvala, R. (2015). *Trends, Challenges & Innovations in Management*. 2nd ed. Zenon Academic Publishing, p.40.

- Mokyr, J. (1990). *The Lever of Riches: Technological Creativity and Economic Progress*. New York: Oxford University Press.
- Moore, K. (2012). *Change and Continuity: Mintzberg and Kotter Agree, You Must Manage Both*. [online] Forbes. Available at: <http://www.forbes.com/sites/karlmoore/2012/11/21/change-and-continuity-mintzberg-and-kotter-agree-you-must-manage-both/> [Accessed 2 Nov. 2015].
- Munkvold, B. (2003). *Implementing Collaboration Technologies in Industry: Case Examples and Lessons Learned*. London: Springer.
- Nonaka, I. (1991). *The Knowledge-Creating Company*. [online] Harvard Business Review. Available at: <https://hbr.org/2007/07/the-knowledge-creating-company> [Accessed 2 Jan. 2016].
- Nonaka, I. (2007). *The Knowledge-Creating Company*. *The Harvard Business Review*. [online] Available at: <http://memberfiles.freewebs.com/84/90/65819084/documents/The%20Knowledge-Creating%20Company.pdf> [Accessed 18 Jan. 2016].
- O'Mahony, S. and Lakhani, K. (2011). *Organizations in the Shadow of Communities*. 1st ed. [ebook] Harvard Business School, pp.2-3. Available at: <http://www.hbs.edu/faculty/Publication%20Files/11-131.pdf> [Accessed 19 Oct. 2015].
- Owen, P. and Demb, A. (2004). Change Dynamics and Leadership in Technology Implementation. *The Journal of Higher Education*, 75(6), pp.636-666.
- Porter, M. (1990). *The Competitive Advantage of Nations*. London: Macmillan.
- Porter-O'Grady, T. and Malloch, K. (2010). *Innovation leadership*. Sudbury, MA: Jones and Bartlett Publishers.
- Rahman, T. (2005). Problems of Democratic Consolidation in Bangladesh: A Cultural Explanation. In: *Network of Asia-Pacific Schools and Institutes of Public Administration and Governance (NAPSIPAG) Annual Conference 2005*. Dhaka, Bangladesh: NAPSIPAG.
- Reagans, R. and Zuckerman, E. (2001). Networks, Diversity, and Productivity: The Social Capital of Corporate R&D Teams. *Organization Science*, 12(4), pp.502-517.
- Robson, C. (2002). *Real world research*. Oxford, UK: Blackwell Publishers.

- Salter, A. and Martin, B. (2001). The Economic Benefits of Publicly Funded Basic Research: A Critical Review. *Research Policy*, 30(3), pp.509-532.
- Saunders, M., Lewis, P. and Thorn hill, A. (2009). *Research Methods for Business Students*. 5th ed. New York: Prentice Hall.
- Schein, E. (1992). *Organizational Culture and Leadership*. San Francisco: Jossey-Bass.
- Shavinina, L. (2003). *The International Handbook on Innovation*. Oxford: Pergamon, p.561.
- Sinar, E., Wellins, R. and Pacione, C. (2015). *Creating the Conditions for Sustainable Innovation: The Leadership Imperative*. 1st ed. [ebook] pp.1-6. Available at: https://www.ddiworld.com/ddiworld/media/trend-research/creatingtheconditionsforsustainableinnovation_tr_ddi.pdf [Accessed 1 Dec. 2015].
- Sloane, P. (2011). *A Guide to Open Innovation and Crowdsourcing: Advice from Leading Experts in the Field*. London: Kogan Page, pp.2-3.
- Tavakol, M. and Dennick, R. (2011). Making Sense of Cronbach's Alpha. *Int. J. Medical Education*, 2, pp.53-55.
- Taylor, A. and Greve, H. (2006). SUPERMAN OR THE FANTASTIC FOUR? KNOWLEDGE COMBINATION AND EXPERIENCE IN INNOVATIVE TEAMS. *Academy of Management Journal*, 49(4), pp.723-740.
- Teece, D. (2010). Business Models, Business Strategy and Innovation. *Long Range Planning*, 43(2-3), pp.172-194.
- Teece, D., Pisano, G. and Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), pp.509-533.
- Tidd, J. (2001). Innovation Management in Context: Environment, Organization and Performance. *International Journal of Management Reviews*, 3(3), pp.169-183.
- Tidd, J. (2013). *Open Innovation Research, Management and Practice*. London: Imperial College Press, p.1.
- Trost, A. and Yohe, J. (1999). Chasms and Bridges on the Path to a New Administrative System. In: EDUCAUSE.

- Trott, P. and Hartmann, D. (2009). Why 'Open Innovation' is Old Wine in New Bottles. *International Journal of Innovation Management*, 13(04), pp.715-736.
- Uis.unesco.org, (2015). *International Literacy Data 2014*. [online] Available at: <http://www.uis.unesco.org/literacy/Pages/literacy-data-release-2014.aspx> [Accessed 3 Dec. 2015].
- Uzzi, B. and Spiro, J. (2005). Collaboration and Creativity: The Small World Problem. *American Journal of Sociology*, 111(2), pp.447-504.
- Vaughan, P. (2001). *System Implementation Success Factors; It's not just the Technology*. 1st ed. [ebook] Boulder, Colorado: The University of Colorado, p.7. Available at: <https://net.educause.edu/ir/library/pdf/cmr0122.pdf> [Accessed 13 Feb. 2016].
- Ware, J., Michaels, B. and Primer, D. (2004). *Investment Leadership: Building a Winning Culture for Long-Term Success*. New York: Wiley, p.22.
- West, J. and Bogers, M. (2013). Leveraging External Sources of Innovation: A Review of Research on Open Innovation. *Journal of Product Innovation Management*, 31(4), pp.814-831.
- Wuchty, S., Jones, B. and Uzzi, B. (2007). The Increasing Dominance of Teams in Production of Knowledge. *Science*, 316(5827), pp.1036-1039.
- Yue, X. and Liang, P. (2011). *Renaissance of Scientific Management's Ignored Aesthetics: Workspace Optimization for Human Resource Management in Project-Based Organizations*. Master. LINKÖPING UNIVERSITY.
- Yunus, M. and Yamagata, T. (2012). *The Garment Industry in Bangladesh*. 1st ed. [ebook] pp.2-3. Available at: http://www.ide.go.jp/English/Publish/Download/Report/2011/pdf/410_ch6.pdf [Accessed 9 Oct. 2015].
- Zahra, S. and George, G. (2002). Absorptive Capacity: A Review, Re conceptualization, and Extension. *Academy of Management Review*, 27(2), pp.185-203.