Innovation as a heuristic to excellence: A study in Indian context

THESIS ABSTRACT

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ABSTRACT

The current research studies the relationship between innovation and business excellence within bounded rationality framework in Indian context. The study conceptualizes innovation as a intuitive decision strategy by a manager/entrepreneur to select those idea, information and opportunities from his/her environment which are ecologically rational and brings excellence in a fast and frugal way. Rather than seeing innovation as mere an act of creating something new or value addition, the current study tries to see it as a strategic intuitive mechanism of adaptation and growth under uncertain business environment. The relationship between innovation and excellence has been noticed by scholars and management practitioners since long. It has been found that the innovative entrepreneurship stimulates economic growth as it leads to effective combination of various factors of production (Schumpeter, 1950). Innovative organizations are more profitable, grow faster, create more jobs and are more productive than their non-innovative competitors, even in mature industries.

The study builds upon the five newly emerging paradigms in business and management indicating a shift from market/customer need fulfillment to need creation, from emphasis on team-work and networking to acknowledgement of spectacular success of nerds, shift from rational economic models to the acknowledgement of the efficacy of intuitive heuristic decisions, from traditional leadership approaches to emphasis on innovative leadership, and rise of entrepreneurial style of management over the traditional meaning and tasks associated with management. The new age corporation are moving from a fundamental business role of meeting the needs of their customers to creating a need for their products in their customers. This may involve sometime guessing what kind of
product a customer may need in future, but companies cannot just afford to bank upon their customers to have this realization because of intense competition amidst increasingly uncertain business environment.

Mid 1970s marked the period of the rise of nerdism in America (Brooks, 2008) wherein socially inept entrepreneurs started developing new innovative technologies and making large amounts of money and acquiring economic credibility, and social prestige. The information revolution produced a parade of highly confident nerd moguls — like, Bill Gates and Paul Allen, Larry Page and Sergey Brin, and so on. In India, nerdism seems to rise to ascendancy at the second half of new millennium. Angela Saini (2011) has termed India a geek nation with immense hunger and passion for science, technology and innovation especially among its newly educated youths. The success of nerds in America inspired the individual initiative to excellence by using innovation as a heuristic (or, short cut) which also promoted wider economic growth and development. According to Schumpeter (as cited in McCraw, 2007) individual entrepreneurship holds the key to economic growth of any country.

Nerds often relied on their gut (heuristics) rather than on rationality to develop new product, new designs or new ways of producing things making use of fast and frugal heuristics as an adaptive mechanism of mind to satisfy the adaptive needs of their venture(s). Research evidences also suggest that heuristic thinking is more powerful in comparison to rational thinking (Thaler, Sunstein & Balz, 2010; Stroop, 1935) and lead to equally good or better outcomes as compared to rational thinking processes (Gigerenzer, 2000; Gladwell, 2005). So based on these, it was hypothesized that the new age managers
and entrepreneurs are also using innovation as a heuristic to achieve excellence and growth in Indian context, and there would be a significant relationship between use of innovation as a heuristic and excellence. Further, attempt was made to identify major factors underlying innovation heuristic, and the way these factors interact with business excellence.

Based on Manimala (1992) and Gigerenzer (2000, 2002) a scale to measure the ability of managers/entrepreneurs to use innovation as a heuristic was developed (α = 0.963, N = 203) and, subsequently, factor analyzed to identify the major factors underlying innovation heuristic. To measure organizational excellence the EXCEL Scale (Sharma et al., 1990) was used which is a 16 item scale designed to operationalize and measure 8 attributes of excellence as espoused by Peters & Waterman (1982) in their book ‘In search of Excellence’. Apart from this, 5 economic indicators of organizations performance were further added after discussion with experts. The total excellence score was computed by adding the total scores of subjects on Excel scale and the 5 indicators of organizational performance.

The current research was done on a sample consisting of 203 people (mean age = 23.92, S.D. = 4.22) involving MBA students, managers and entrepreneurs. The major variables that were studied in the current research were ‘search & adapt heuristic’, ‘fast & frugal heuristic’, ‘heuristic intelligence’ and ‘business excellence’. The preliminary results show that the sample perceives a significant relationship between the use of innovation heuristic and business excellence (r = 0.787, p < .01) irrespective of age, gender and work experience. A correlational analysis showed that innovation-as-a heuristic variable has a
significant correlation with business excellence. The Pearson’s correlation coefficient between ‘search & adapt heuristic’ and ‘business excellence’ scores was $r = .78$ (p < .01); and the Pearson’s correlation coefficient between ‘fast & frugal heuristic’ and ‘Business Excellence’ scores was $r = .65$ (p < .01). Further, the Pearson’s correlation coefficient between ‘Heuristic Intelligence’ and ‘Business Excellence’ scores was $r = .79$ (p < .01). A principal component analysis (PCA) revealed the emergence of two major factors, i.e. ability of managers to use innovation as a search-and-adapt heuristic (SAH) which contributed to 51.44% variance, and ability of managers to use innovation as a fast-and-frugal heuristic (FFH) which contributed to 6.19% variance in the sample data. The reliability of ‘search-and-adapt heuristic’ and ‘fast-and-frugal heuristic’ were found to be .9 and .95 respectively.

A mediation analysis showed that the effect of the two obtained factors on excellence was mediated through their summative effect called heuristic intelligence. The result also showed that path from both heuristics (i.e., ‘search & adapt heuristic’, and ‘fast & frugal heuristic’) to latent variable (i.e., heuristic intelligence) was significant. Path from ‘search & adapt heuristic’ to endogenous variable (i.e., business excellence) was significant (p < .05), this means mediation effect of heuristic intelligence between ‘search & adapt heuristic’ and business excellence is partial (i.e., partial mediation). Further, path from ‘fast & frugal heuristic’ to endogenous variable (i.e., business excellence) is not significant (p – value = .276), this means mediation effect of heuristic intelligence between ‘fast & frugal heuristic’ and business excellence is full. Further, a structural equation modeling (SEM), using Bollen-Stine bootstrap method, was carried out to test
the hypothesized relationship in which the effect of both the predictor factors (i.e., SAH, FFH) over business excellence is fully mediated by heuristic intelligence.

The parameter estimates after SEM showed all paths values as significant. The covariance between ‘search and adapt heuristic’ and ‘fast and frugal heuristic’ was estimated to be 111.812 (p < .001), which is significant. All the variances were also found to be significant (p < .001), however, variance of SAH was much larger as compared to FFH. For the current sample chi-square was not significant ($\chi^2 = 5.446$, df=2, and p = .066, p Bollen - Stine = .094) which indicates that obtained data fits with the proposed model, and the proposed model cannot be rejected, and that the hypothesized model adequately describes the sample data. The relative $\chi^2$ ($\chi^2$/df ratio) was 2.723 which again showed good model fit. GFI & AGFI, which stand for the Goodness-of-fit Index and Adjusted Goodness-of-fit Index, values for the hypothesized model were .987 and .934 respectively showing good model fit again. The obtained value of PGFI for the current sample is .197 which is less than .50, indicating the harmony of indices. SRMR, which stands for the Standardized Root Mean square Residual, was .0111 further indicating good model fit. The values of NFI (Normed Fit Index), TLI (Tucker – Lewis Index), and CFI (Comparative Fit Index) were found to be .996, .993, and .998 respectively indicating again a good model fit. The value of RMSEA was .092, which showed mediocre or average fit which is likely to improve as we increase the sample size. The proposed structural equation model wherein the effects of ‘search-and-adapt heuristic’, and ‘fast-and-frugal heuristic’ was mediated through the ‘heuristic intelligence’ variable was found to be fit.