Foresight Styles of strategy level leaders

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ABSTRACT

The Foresight Styles Assessment (Dian 2009; Gary 2008, 2009) was regarded as an important measure of a strategy level leader's dominant and back-up styles of engaging with matters related to anticipating the future. This study sought to confirm the factor structures of the measure. A quantitative two-step methodology was adopted as a pilot study preceding the main study in which a web-based survey methodology was used. The sample consisted of 298 strategy level leaders. Data was analysed by exploratory factor analysis and confirmatory factor analysis. The FSA's four factors Directive, Adapter, Framer and Reactor were confirmed. Theoretical concerns could be raised regarding whether the Reactor factor describes a foresight style.

Key words:

INTRODUCTION

The concept of foresight has often been referred to as a desirable organisational core-competence yet remains largely misunderstood and empirically under-studied. This study seeks to describe foresight in individuals, in particular strategy-level leaders, in terms of their competence to do so. Foresight is innate to human beings yet differs from individual to individual depending on a number of elements. Their competence to exercise foresight is related to their cognitive ability to meet the need to envision possible futures.

Nelson and Narens (1990) note that the predominantly rational one-dimensional approach to competence, is no longer adequate in explaining the nature of competences. A more multi-dimensional holistic approach is better suited in terms of explaining human abilities and the attendant aspects thereof. The measurement of foresight competence is captured by the Foresight Styles Assessment which determines the style of foresight adopted by an individual. The aim of the paper is to examine the factor structure of the foresight styles construct.

A quantitative two-step methodology was adopted as a pilot study preceding the main study. A web-based survey methodology was used to collect primary data. The data was analysed utilising multivariate data analysis techniques including exploratory factor analysis, confirmatory factor analysis, multiple regression analysis and structural equation modelling.

LITERATURE REVIEW

This study proposes that leadership and strategy research converges at the level of the organisation and at the level of the individual. Of particular interest is how the concepts of foresight and strategic thinking, are related in terms of strategy development in an organisational context. While often used interchangeably in the relevant literature, the study asserts that the concepts of foresight and strategic thinking are overlapping yet distinct. Strategy is embedded in the need to contemplate the future of the organisation within the context of a holistic and systematic understanding of the organisation and its environment. Strategic thinking requires rational and generative thought processes in the formulation and conceptualisation of an organisation's longer-term future direction and strategic choices. In a larger study it was proposed that foresight competence enhances strategic thinking. *In this study the focus is on the factor structure of foresight styles as a dimension of foresight competence*, the competence that allows leaders to make effective strategic decisions.

In this study the focus is on the top level of leadership of the organisation that exert the most influence on the organisation's strategy. Storey (2005) refers to this as strategy-level leadership whereas some other researchers also refer to these as the executives, strategic leaders, upper echelons or top management of the organisation (Boal & Hooijberg 2000; Cannella Jr & Monroe 1997; Carpenter, Geletkanycz & Sanders 2004; Finkelstein & Hambrick 1996; Goll & Rasheed 2005; Hambrick 2007; Hambrick & Mason 1984; Waldman, Javidan & Varella 2004)

Foresight expands the range of alternative organisational futures and thus enhances the formulation of strategic choices in terms of strategic thinking. Strategic decision-making therefore not only reflects the decision-maker's strategic thinking but the decisions are also enhanced in this process thus reducing the potential failure to make clear and explicit choices. Due to the specific purpose of strategic thinking within the context of formulating organisational strategy, its inputs include but are not limited to the outputs of foresight. The purpose of foresight in the context of strategic thinking is primarily to expand the boundaries of perception of the strategic thinker and present them with a broader range of normatively determined alternatives of how the future could evolve.

Foresight competence

Foresight competence has been described as the cognitive ability *to creatively envision possible futures, understand the complexity and ambiguity of systems and provide input for the taking of*

*provident care in detecting and avoiding hazards while seeking to achieve a desired future (*Van der Laan 2010).

Although numerous prominent leadership and strategy studies refer to the cognitive ability of foresight, attempts to conceptualise and operationalise it are scarce. Only a handful of studies have previously investigated foresight in terms of psychological measures (Hayward 2005) or conceptualised in terms of foresight styles (Dian 2009; Gary 2008). The relationship between orientation to time and leadership have also been conducted (Thoms 2004; Thoms & Greenberger 1995) and provide support for the assertion that orientation to time presents a significant contribution to a construct of foresight.

While a construct of foresight remains elusive, it is this study's assertion that Gary's refinement of Dian's foresight styles (2008) and Fortunato and Furey's MindTime dimensions (2009) meaningfully represent an individual's foresight competence. Both measures have been assessed as having construct validity (Fortunato & Furey 2009; Gary 2008). Psychological constructs, whether measuring personal differences, cognitive abilities or time perspectives are acknowledged as contributing to foresight research and decision making (Gary 2008; Tonn, Hemrick & Conrad 2006; Tonn & MacGregor 2009).

Despite the support for the development of a construct of foresight competence based on psychological measures, this study supports Gary's (2008, p. 7) assertion that such measures remain limited in comprehensively describing the meaning of foresight and are "less than the eloquent concept of foresight". However, it is contested that measuring foresight competence (as opposed to the concept of foresight itself) as a cognitive ability is meaningfully reflected in validated psychological measures that clearly describe the elements of such ability (van der Laan 2010).

Measurement of Foresight

Futures Studies is concerned with the study of foresight as an enabler of futures thinking in terms of formulating images of alternative futures (Inayatullah 2008) and is thus directly related to foresight as an individual cognitive competence. It has been described as having had research conducted in all three major research paradigms, empirical, interpretive and critical (Inayatullah 1998). Inayatullah proposes that all three paradigms should be used to contextualise data, in terms of our meanings ascribed to them in order to position them in the historical structures of knowledge and power.

While critical futures studies and increasingly integral futures have a primarily realist or constructivist orientation (Neuman 2006), this study agrees that there is a lack of empirical foundations necessary for meaningful interpretive and critical approaches, and theory development (Gary 2008). It is argued that empirical observations of the surface level are fundamental in order to facilitate the logics

employed by the critical and interpretative orientations. In order to meaningfully conduct deeper analysis of social issues (Inayatullah (1998, 2002), an understanding of the value free and objective observations of the empirically observable is required.

The purpose of adopting a post-positivist paradigm is that empirical research enriches the interpretive and critical approaches. The nature of social sciences generally and the study of individual cognitions are constantly evolving concepts and its inferences are probable, based on empirical observation and measurement which is associated with the quantitative research approach (Creswell 2009; Neuman 2006; Perry 2008) and thus provides an empirical platform for further interpretive and critical studies of the layered natured of reality.

The construct of foresight competence was operationalised based on the literature supporting validated measures of the dimensions that can be regarded as constituting foresight competence in strategy-level leaders (van der Laan 2010).These were hypothesised as related in terms of orientation to time described by mental time travel (Suddendorf & Corballis 2007) and incorporated in the Theory of MindTime (Fortunato & Furey 2009) in addition to the Foresight Styles (Dian 2009) of the individual. The characteristics described by these orientations and styles are linked to the definition of foresight competence. Of particular importance in this study is the measurement of foresight styles as an important dimension of the foresight competence construct.

Foresight Styles and competence

The Foresight Styles Assessment (Dian 2009; Gary 2008, 2009) was regarded as an important measure of a strategy level leader's dominant and back-up styles of engaging with matters related to anticipating the future. Dian (2009) proposes that Foresight Styles are in essence a reflection of the style with which individuals cognitively respond to change and their envisioned prospects of the future. Foresight is embedded in the roles and tasks of strategy-level leaders. Foresight Styles explain how foresight cognitions differ from individual to individual within the context of their internal disposition used to understand the future. Gary (2008) notes that these cognitive dispositions emerge from an individual's innate innovativeness and response to differing contexts dependent on temporal cognitions. These differ according to their propensities to tolerate risk, creativity, tolerate ambiguity, their value orientations, in addition to their predominant focus on the past, present and future.

Dian's (2009) typology measured by the Foresight Styles Assessment (FSA) suggest that there are six distinct styles in which foresight is manifest: Futurist, Activist, Opportunist, Flexist, Equilibrist and Reactionist. Measurement of these dispositions is not directed at identifying a superior style in isolation but rather determines the values of each as differentiated across the spectrum of dispositions. As such the typology recognises the diversity of cognitive tendencies, differing from individual to individual, that interact with their temporal orientation and environmental change. Dian describes the

styles as "distinct, yet co-occurring, relatively stable aspects of a person's time perspective" (Gary 2008, p. 5).

The Foresight Styles Assessment (FSA) instrument has undergone tests for validity and reliability and it was found that a reduced four factor version had greater factor loadings and fit. Gary (2008, p. 76), in his study to empirically test the FSA, concludes that the refined four factor FSA "is valid and reliable with minimum construct validity for exploratory research". However, it should be noted that this assertion has not undergone further tests for validity and reliability and hence is the impetus of this manuscript. Table 1 illustrates Gary's reduced four factor version of the Foresight Styles Assessment (FSA).

Table 1 in here

An assumption may prevail that in order to be competent in foresight one would need a dominant style described as Framer by the FSA. While this is certainly related to the characteristics of an effective strategy-level leader, it is the ability to switch between styles according to the circumstances that may describe foresight competency better (Gary 2008). Aspects of other styles such as the Adapter's ability to adjust to new situations as the future demands may contribute to foresight competence. One would expect however, that individual's that have a propensity to be Framers, would rely on Tester and Adapter styles depending on the situation but reject the Reactor style.

The construct further addresses Gary's (2008) concern that the aspects of foresight that could have been captured in the Reactor Style are omitted from the revised Foresight Styles Assessment. Gary's concern is that the Reactor style could have captured positive aspects of this style's orientation to the past. This study aims to evaluate the reduced foresight styles measure and determine the validity and reliability of the measures in terms of describing the Gary's hypothesised four foresight styles.

METHOD

The research was conducted as a quantitative cross-sectional study (Neuman 2006). Cross-sectional research may be descriptive, explanatory or exploratory but is unable to encapsulate change or social processes. Quantitative approaches to research design typically include the strategy of enquiry in the form of surveys which was deemed suitable for the cross-sectional nature of the enquiry (Creswell 2009). Based on the post-positivist paradigm of the study and the quantitative approach being deemed most suitable, a research design that meets with the paradigms and needs of the study was necessary. Survey research, is regarded as an appropriate strategy in providing a quantitative description of the relationship between variables and a parsimonious basis for empirically determined knowledge claims (Creswell 2009).

The measurement development process for the larger study included both the conceptualisation and operationalisation of the relevant concepts in order to observe the idea empirically (Neuman 2006). From these the variables were operationalised into valid and reliable measures. The FSA was one of four instruments integrated into a questionnaire for a comprehensive study. The focus in this paper is on the Foresight Styles Assessment (Dian 2009) as reduced by Gary (2008) into a four factor measure which has twenty-six questions.

In terms of the reliability and validity of the FSA scale (Gary 2009) reported that 41.72% of variance was explained and factor loadings (α) of 0.89, 0.78, 0.77 and 0.66 respectively. Written permissions to use the Foresight Style Assessment (original and reduced) were received from the originators of the scales. The selection of the scales in terms of the study's research issues and hypotheses were generally judged as being appropriate by a panel of experts. None of the experts rejected the operational measures of the concepts which contributed to the face validity in terms of the scale.

Pilot study: The questionnaire for the comprehensive study was administered to master's degree graduates of the Institute for Futures Research, University of Stellenbosch who were invited by the Institute to participate. Eighty-eight participants viewed the questionnaire and 37 completed responses were received representing a 42% response rate. Participants were requested to provide feedback relating to the ease of completing the questionnaire, clarity of the questions and perceived understanding of the instrument. These elicited no negative responses requiring amendments to the questionnaire. The pilot study provided sufficient support for added validity of the measures.

Sample: The study adopted a non-probability, purposive sampling approach (Leedy & Ormrod 2005; Neuman 2006). The number of potential respondents could therefore not be determined. However, email invitations purposefully targeting organisational leaders and including a hyperlink to the online survey questionnaire yielded 431 respondents who had started the questionnaire. Of these, 305 (71%) responses were retained. The balance of 126 (29%) were either incomplete or contained inconsistent data and were determined as unsuitable for inclusion in the primary data set.

Age, gender, nationality. The sampling unit of analysis was the strategy level leader of organisations in Australia and South Africa. In summary, the sample consisted of 298 qualifying respondents. The Australian sample accounted for 52.3% of the total while 47.7% were from South Africa. There were 75.2% males and 24.8% females. The majority of respondents (51.3%) were between the ages 45-59 years old with those aged between 35-44 years old accounting for a further 26.5%. The sample was therefore predominantly (77.8%) in their middle to advanced stages of their careers and corresponds with the senior levels represented by the sample (82.5% of the total being Directors / CEOs / Senior Managers / Professionals).

Education. Respondents with post-graduate qualifications accounted for the majority of the sample (62.4%). The sample primarily consisted of persons with tertiary level degrees (87.6%). The South African sample had a higher level of post graduate respondents (73.9% of South African respondents) while the Australian sample had a higher proportion of bachelor degreed respondents (30.8% of Australian respondents). With 8.1% of respondents having high school level education, the sample can be regarded as predominantly having a tertiary level education. Respondents that have been exposed to foresight concepts and methods (67.9%) varied between the two countries with the South African sample indicating that 85.9% of respondents had this exposure (52.6% in Australia).

Experience. The sample drew upon strategy level leaders from predominantly the financial services, retail, manufacturing and mining / resources sectors. A majority of the sample (61.8%) indicate industry experience, including experience in their current positions, which exceeds 10 years.

Administration: Web-based survey research was deemed to be the most effective and efficient strategy to utilise in terms of collecting the data necessary for the study.

Data cleaning: For FSA, with 26 variables to be included in the regression analysis, the critical χ^2 = 54.05 (p=0.001). Thus, multivariate outliers were operationalised as cases with Mahalanobis Distance Values greater than 54.05. Using this method, thirteen multivariate outliers were detected. These cases were eliminated from the analysis.

Data analysis

Structural Equation Modelling (SEM) was utilised as the prominent data analysis technique for the larger study. SEM is regarded as a comprehensive technique that is able to determine the closeness of data fit utilising fit indices, confirm the factor structures of the scales used to measure the variables and examine the series of dependence relationships of multiple variables proposed by the study's conceptual model taking into account the effects of mediating constructs (Cunningham 2008). Measurement model evaluation and specification is an important part of the SEM technique.

The testing of the measurement model followed Mulaik and Millsap's (2000) suggestion that Exploratory Factor Analysis (EFA) precede conducting Confirmatory Factor Analysis (CFA) of the measurement models. It was determined that this procedure would not only affirm the framework for the larger study's analysis but also facilitate the reduction of items of lengthy ordinal scales and justify the elimination of items that have low measurement properties which were not in theoretical violation of the study's theoretical framework (Yang, Nay & Hoyle 2009).

It should be noted that there is a prevailing debate as to the correctness of Millsap and Mulaik's (2000) approach. Following their suggested process could lead to a potential loss of information in the measurement of the constructs (Little et al. 2002). In response to this criticism, it is argued that item

level analysis has a number of disadvantages including lower reliability, lower communality and a higher possibility of distributional violations related to the intervals between scale points (Hau & Marsh 2001). The debate is an extensive one and resolutions seem unlikely. On a balance, it was determined that due to the relative lack of refinement of the four factor FSA, the further testing of its validity and the potential of obscuring of underlying factorial structures attributed to the complexity of the foresight styles construct (Gary 2009), initial testing according to the purposes of EFA were appropriate. In summary, this research used EFA followed by CFA to refine the initial measures of the constructs and test the measurement models to be used in the further SEM analysis.

Exploratory Factor Analysis (EFA).

The primary objective of EFA is to define the underlying structure of the variables of the analysis (Hair et al. 2006) and to determine the smallest number of factors that reproduce the correlations within a larger set of measured variables (Cunningham 2008). Each of the observed items are expressed as weighted linear measures of the composite measures or factors which in turn collectively represent the main latent variable of interest (Hair et al. 2006). In this study the factorial structure of the FSA , hypothesised to reflect an individual's foresight disposition is of interest. An EFA was conducted to explain the correlations between measured variables, their communality estimates and the proportion of shared variance between items (Cunningham 2008) as compared to Gary's (2008,2009) conclusions thereby facilitating further refinement of the scale prior to further confirmatory analysis.

The method of extraction used for the EFA analysis is the maximum likelihood (ML) method due to the chi-square statistic that it can generate which determines whether the covariances generated by the parameter estimates are significantly different to the empirical sample variances and covariances (Cunningham 2008). The data was screened for univariate and multi-variate normality and as such meet the assumption required for ML. Eigenvalues greater than one (Hair et al. 2006) and scree plots were used to determine the number of extracted factors. An oblique rotation method, oblimin rotation was adopted due to the assumed correlation that is inherent in the factorial structures chosen. This was conducted in order to maximise high loadings and minimise low loadings on identified factors despite the presence of non-zero correlations between factors which is expected in business or social science research (Cunningham 2008). Based on the chi-square statistic generated by the ML estimation, the most parsimonious model was retained for further CFA.

Confirmatory Factor Analysis (CFA).

Following Mulaik and Millsap's (2000) recommendations, prior to conducting CFAs, EFAs should be conducted. SPSS software was utilised for the EFA of the FSA. Thereafter, a CFA was conducted using AMOS software for the FSA. Reliability analysis and descriptive statistics were run using SPSS

in order to establish the Cronbach's alpha and Standard Deviation (SD). As such, the FSA scale was evaluated and the statistical results for the EFA and CFA were derived.

RESULTS

Exploratory Factor Aanalysis (EFA).

The EFA of the FSA scale using SPSS software and the ML extraction method extracted four factors and was moderately consistent with the original measure. Items were reduced from twenty six to thirteen items yielding a Cronbach's alpha of 0.82.All items that were omitted either had very low factor loadings and / or low item reliabilities and the omission was theoretically justifiable (Hair et al. 2006). Thirteen items loaded onto four factors that corresponded with the hypothesised Framer, Tester, Adapter and Reactor Styles. Item loadings ranged from .405 to .967 with the retention of lower loadings being theoretically justifiable. The measure of sampling adequacy was .910 with thirteen items explaining 63.3% of the variance. The Goodness of fit test indicated a Chi-square of 34.430 and p=.352. Hence the data fit the model well. There were no non-redundant residuals.

An EFA using ML extraction and oblimin oblique rotation confirmed the four factor structure of the original scale. The solution was an adequate representation of the data yielding good data fit.

Confirmatory Factor Analysis (CFA).

The CFA using the AMOS software was conducted based on the results of the EFA analysis (see table 2). ML estimation on the covariance matrix did not yield good model fit (CMIN) statistics. The x^2/df fell within the acceptable range of 2.71. Other model fit indices also indicated poor to moderate model fit (RMR=0.86, GFI=0.922, TLI=9.35, RMSEA=0.78 and CFI=951). Eleven of the thirteen loadings ranged from 0.678 to 0.929. Two items yielded loadings of 0.498 (FSA3) and 0.578 (FSA1) yet were retained due to theoretical considerations underlying the original measure. These items were material in terms of retaining the factor structure of the original measure. It was determined that these two low loadings, FSA3 item ('Don't like changes that disrupt opportunity') and FSA 11 ('Against changes that threaten one's position'), represented a construct (Reactor) that was arguably not theoretically aligned with the concept of foresight competence and hence yielded low statistical support. However, it was decided to retain these items in the measure to determine, in terms of prospective regression analysis and SEM, whether there would be justifiable grounds for concluding that the FSA measure is misrepresented by the Reactor construct. Figure 1 illustrates the AMOS output of the CFA with Table two summarising the key statistics and the goodness of fit indices.

Figure 1 in here

In terms of the criteria for fit indices set for this study, the model achieved the minimum requirements with the CFI indicating good fit, some indices indicating satisfactory fit (TLI, GFI, RMSEA) and two indices showing poor fit (AGFI, Chi-square).

Table 2 in here

Three factors (Framer, Tester and Adapter) showed very high inter-correlations and the items did not show discriminant validity. Table 3 (Pattern and structure coefficients) illustrate no pattern or structure in the measure after the removal of the Reactor method factor. It was deemed that these FSA factors (Adapter, Framer, Tester) were likely to represent a uni-dimensional construct. The fourth, Reactor factor was determined to represent a method factor (Kano & Azuma 2003; Spector 2006) and was removed from further analysis.

Table 3 in here

DISCUSSION

Foresight competence was regarded as one of a number of antecedent inputs of effective strategic thinking which, in turn was associated with the strategy-making processes in the organisations represented by the larger study's sample.

This paper explores the validity and reliability of one of the measures utilised in operationalising the foresight competence construct of the study. An EFA and CFA of the Foresight Styles Assessment scale revealed that the loadings attributed to the Reactor Factor was very low and significantly negatively correlated with the other three factors of the measure. The CFA of the scale did not yield a significant CMIN, this was due to a reduced level of convergence resulting from the inclusion of the Reactor Style. However, further model fit indices still yielded acceptable model fit. Despite this the arguments supporting the inclusion of the Reactor Factor as part of a valid and reliable measure of Foresight Styles, it was determined that it represented the characteristics of a method factor (Kano & Azuma 2003; Spector 2006) and should be excluded in future statistical uses of the measure. .

The reduced level of convergence could be attributed to the nature of the sample bearing in mind that the scale was previously validated in terms of a large online sample without any specific population parameters (Gary 2008). The original data collection used in prior research was certainly not specified in terms of strategy-level leaders. This research specified strategy-level leaders in the purposive sampling applied of whom the majority of respondents displayed a predilection to being orientated to the present or future. This may point to response bias which is problematic when surveying leaders.

The question arose out of the results as to whether a Reactor Style is theoretically justified when measuring styles of foresight. The research recognises that there are different approaches to foresight

but *questions whether having a predominantly reactionary style of foresight is theoretically justifiable in terms of the definition of foresight*. The study, based on the quantitative data analysis and in revisiting the theoretical foundations of foresight as a concept, concluded that the inclusion of the Reactor Style cannot be justified despite its usefulness in the analysis. It is rather suggested that if this dimension is theoretically applicable, it is treated as a separate construct. It is significant to note that this sample includes 101 CEOs / directors and 120 senior managers. It further illustrates that despite constituting the majority composition of organisation's dominant coalitions, the role played by middle managers, professionals and consultants / strategists in terms of influencing strategy is significant. Of particular interest in the study is the exposure to foresight education at a post graduate level and the effect this may have due to the advanced nature of the concepts and methods contained in such interventions. While it is acknowledged that the industry context largely determines an organisation's emphasis on strategy (Collis & Montgomery 1999; Hambrick 2007), the study is primarily concerned with the strategic cognitions of the leaders. Industry type, while identified, was not of primary concern. However, industry experience is regarded as an important demographic proxy in predicting leaders' strategic orientations and decisions (Finkelstein & Hambrick 1996). The larger study confirmed the statistical significance of this as an interaction effect on the relationship between foresight competence and strategic thinking. This also supports the assertion that industry experience is significant in terms of the development of strategic thinking with experience in excess of ten years being determined as an important benchmark (Goldman 2007).

A limitation to the study is the lack of response from organisational leaders. The sample size however, can still be regarded as 'large' in terms of SEM analysis (Kline 2004) and this sample size was adequate for the reliable statistical analysis of the data albeit not sufficient for group analysis. The study relies on self report data which could include response bias and social desirability bias (Zikmund 2003). For this reason, the survey design included questions that allowed the researchers to triangulate the responses and indicate obvious anomalies.

CONCLUSIONS

Together with an assessment of the strategy-level leaders' temporal orientation, the FSA was determined in a larger study (van der Laan 2010) to be a valuable indicator of their foresight competence. This study evaluated the FSA as a valid and reliable measure of strategy-level leaders' propensity to adopt dominant and back-up styles of engaging with matters related to anticipating the future. Results of the analysis indicated that three of the four original factor structures of the measure proposed by Gary (2008) were highly correlated and could be interpreted as a higher-order uni-dimensional measure of an individual's propensity to engaging matters related to anticipating the future which includes the underlying dimensions of foresight style (Framer, Tester and Adapter). This corresponds to the definition of foresight as being future focussed and vigilant in terms of provident

care (Framer), able to change as the future demands (Adapter) and willing to test the possibility of preferable alternative futures (Tester) (Amsteus 2008; Hayward 2005; Slaughter 1999; van der Laan 2010) .

The Reactor Style as proposed in the reduced four factor measure proposed by Gary (2009) indicates that it may either be interpreted as a method factor (as adopted by this study) or theoretically be regarded as an indicator of not exhibiting a dominant propensity to adopt a foresight propensity. The latter consideration requires further research, possibly within the context of a two factor measure indicating individuals' dominant propensity to engage with matters related to future and those that do not exhibit such a dominant cognitive inclination. A caveat to this would be the theoretical conclusion that all humans exhibit ability of foresight as a naturally occurring response to environmental change (Suddendorf & Corballis 2007). The inclusion of the Reactor factor would thus be limited in its interpretation as representing low or under-developed foresight ability.

Organisational leadership development initiatives can be complemented with the insights gained from the study of foresight competence. Based on the assumption that foresight competence enhances strategic thinking, it is deduced that strategic thinking capabilities in strategy-level leadership of organisations can be developed by a) exposing individuals to foresight concepts and methodologies (Alsan 2008; Hayward 2005) and, b) through a range of experiential learning techniques respectively (Goldman 2007). All employee development programmes, and leadership development in particular, will contribute to building the core competences associated with an innovative, flexible, strategically-orientated and sustainable organisation.

Table 1: Reduced four factor version of the Foresight Styles Assessment (FSA)

Foresight style	Characteristics
Framer	Interrogates the future Future time orientated Interested in the long-term issues that define the future Envisions 'bigger picture' futures
Adapter	Adjusts to new situations as future demands Balances multiples challenges and choices Helps others adapt / Is flexible / Activates action Flexible leadership / Change Orientated Influencer
Tester	Adopts new trends / Confirms diffusion of innovation theory Experiments with new trends when they arise Opportunistic / Not cognitive trend analysis
Reactor	Preserves own position Mitigates and resists change

Source: Gary 2008

Figure 1: CFA of Foresight Styles Assessment (FSA)

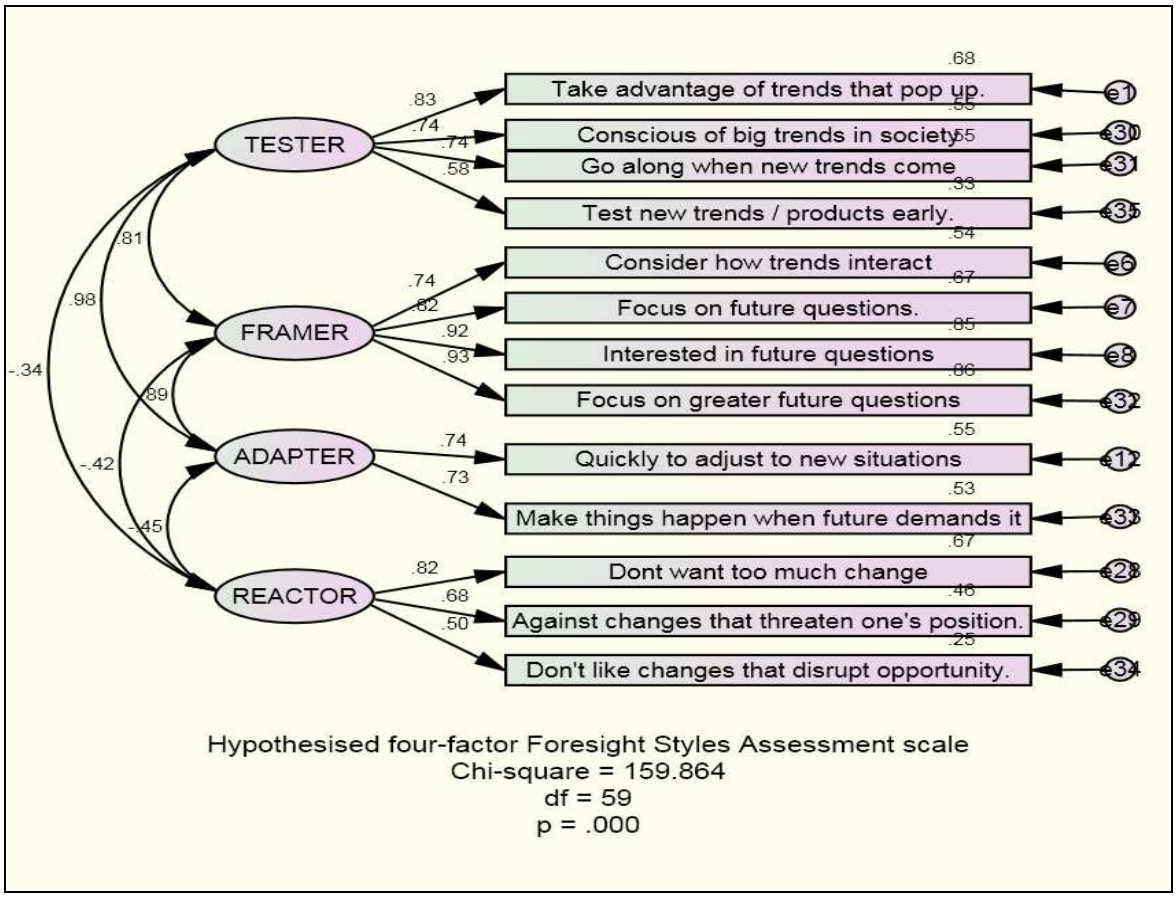

Table 2: Standardised and fit estimates for the Foresight Styles Assesment (FSA)

Reliability – Cronbach's alpha		**0.820**			
Standardised regression weights				***p* value**	**Item Reliability SMC**
FSA1 Test new trends / products early.	←	TESTER	0.578	0.000	0.334
FSA16 Conscious of big trends in society	←	TESTER	0.741	0.000	0.549
FSA17 Go along when new trends come	←	TESTER	0.744	0.000	0.553
FSA24 Take advantage of trends that pop up.	←	TESTER	0.827	0.000	0.685
FSA10 Consider how trends interact	←	FRAMER	0.738	0.000	0.545
FSA14 Focus on future questions.	←	FRAMER	0.818	0.000	0.669
FSA20 Interested in future questions	←	FRAMER	0.920	0.000	0.845
FSA21 Focus on greater future questions	←	FRAMER	0.929	0.000	0.862
FSA5 Quickly to adjust to new situations	←	ADAPTER	0.740	0.000	0.547
FSA22 Make things happen when future demands it	←	ADAPTER	0.730	0.000	0.533
FSA3 Don't like changes that disrupt opportunity.	←	REACTOR	0.498	0.000	0.248
FSA9 Dont want too much change	←	REACTOR	0.816	0.000	0.665
FSA11 Against changes that threaten one's position.	←	REACTOR	0.678	0.000	0.460
p				0.00	
Chi-square (x^2)				159.864	
Degree of freedom (df)				59	
Normed chi-square (x^2/df)				2.710	
Root Mean-Square of Error of Approximation (RMSEA)				0.78	
Tucker-Lewis Index (TLI)				0.935	
Comparative Fit Index (CFI)				0.951	
Goodness-of-fit Index (GFI)				0.922	
Adjusted Goodness-of-Fit Index (AGFI)				0.879	

Source: van der Laan 2010

Table 3: Pattern and structure coefficients: FSA

	ADAPTER	FRAMER	TESTER
FRAMER	888	1.000	
TESTER	.980	.809	1.000
FSA1	.567	.468	.579

FSA22	.736	.653	.721
FSA21	.826	.930	.753
FSA17	.728	.601	.743
FSA16	.726	.600	.741
FSA5	.734	.652	.719
FSA20	.814	.917	.742
FSA14	.726	.818	.662
FSA10	.655	.738	.597
FSA24	.811	.669	.827

Source: van der Laan 2010

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