

Journal of Asia Entrepreneurship and Sustainability



Refereed Edition

Print: ISSN 1177-4541

On-Line: ISSN 1176-8592

www.asiaentrepreneurshipjournal.com

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Volume VIII, Issue 2, August 2012

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The Comparison of relationship among Quality and Structure of Social Capital and Organization entrepreneurship in Mazinoor Lighting Industry Company

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Abstract:

Social capital is a proper bed for physical and human capital productivity and is a way to reach success. In absence of social capital, other capitals will lose their effectiveness and without that, passing the course of development and economic and cultural completion become very uneven and difficult. Social capital will facilitate the risky and innovative behavior which is inseparable component of entrepreneurship and just very straightly will enter the practical function of people. In fact, this kind of capital will facilitate the total function of individual as a group entrepreneur.

In present article, we reviewed the relationship between social capital and organizational entrepreneur in Mazinoor Lighting Industry Company located in Mazandaran province through Pierson correlation test, binominal test and Friedman test. The results showed a meaningful and positive relationship between social capital and its dimension with organizational entrepreneurship. Also the correlation coefficient of structural

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dimension of social capital in Mazinour organization is of more importance. The index of innovation in product has priority in regard to organizational entrepreneurship.

Key words: Social capital, Organizational entrepreneurship, Quality and structural dimensions of social capital.

Introduction:

Social capital like other forms of capital is productive and it provides the opportunity of access to certain goals which they are unattainable without it. In absence of social capital, other capitals will lose their effectiveness, and passing the ways of cultural and economical development will be uneven and difficult (Alvani, shirvani, 2006)

It's stated that, in relation to this kind of capital with entrepreneurship concept, social capital will facilitate entrepreneurial behavior as well as straightly will enter practical function of individuals, and it will form the behavior of individuals who potentially and practically are entrepreneur and employer.

In present article, with the aim of reviewing the value of the relationship of social capital dimension including structure and quality dimensions and organizational entrepreneurship and comparing for, intensity and the rate of effectiveness of every one of independent variables on dependent variables of organization entrepreneurship in Mazinour light industry organization, is tied as brief and documentary as possible, with giving definitions and importance of subject matter, with Pierson correlation tests, binominal test and fridman test, we turn to analyzing the data.

Definitions:

Due to relative nature of principles, rules and discovered theories, various sources in human sciences, different study sources, present variety of views about the definition₄

of a human phenomenon as if the severity of views in human sciences is somehow that in case of special phenomenon, a certain view can not be offered (Ahmadpur, 2003, 3).

Based on the above statement, from social capital accompanied with its dimensions and organizational entrepreneur, different definitions were defined. Some of them will be briefly stated: Putnam knows social capital as a collection of concepts like confidence, norms and networks that causes relationship and best participation of members of a society and at the end, support the mutual benefits. In his view, confidence and corresponding action are sources that exist in actions of society members (Putnam, 1993).

Structural dimension of social capital in relation to managerial structure and processes like managers and leaders responding based on their functions, clearness in decision making, is the rate of deciding and group working and the corporate pattern which is found in organizations is considered as this dimension involves the rate of relationships that individuals have with one another (Bolino, 2002, 507).

Quality dimension of social capital in relation to phenomena like values, approaches, undertakings participations and confidence which are present in a system and involves the nature of relationship in an organization. In other word, this dimension will be focused on nature and quality of relationship (Bolino, 2002, 507).

Organizational entrepreneurship means that an entrepreneur who employed in a firm and is found in all levels of organization. First, it was believed that entrepreneurs are personally the owner of their business, but today the belief is that, entrepreneurs can be

employed in many companies. It was from this point that organizational entrepreneur was created (Samad Aghayi, 2000, 16).

Problem statement:

In economy based on knowledge, intellectual capital is used in order to create organizational value. In a favorable state, one of the capabilities of each entrepreneurial organization is that can help through the proper management of their capitals, especially social capitals in creating and sharing knowledge. In absence of social capital, other capitals will lose their effectiveness and passing the ways of development and completeness will be difficult (Puyan, 2006).

Social capital has an important role in entrepreneurial activities. First, entrepreneurs are individuals, who are the product of their social environment, and second, entrepreneurship is a social activity, and as a result, presence or absence of social links and communications will affect the nature of the business. Therefore, the subject of present article has shown the relationship between entrepreneur variables and social capital dimensions including quality and structure in the entrepreneurial organization of Mazinour Lighting Industry Company in Mazandaran province. The matter of this study is as the following:

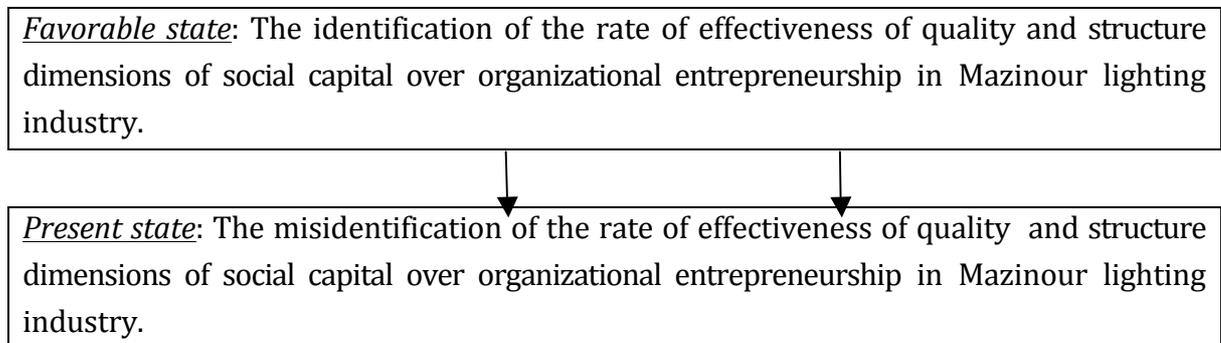


Figure 1. Problem Statement

Conceptual model of research and hypothesis:

Every conceptual model is a starting point for doing researches as if it will determine the social so-called variables of research and the relationship among them (Edward et al, 2000).

To understand the subject, the conceptual model of present research is shown below. Its necessary to state that in this model, the variables of organizational entrepreneur involves seven dimensions and social capital also involves two: quality and structure dimensions.

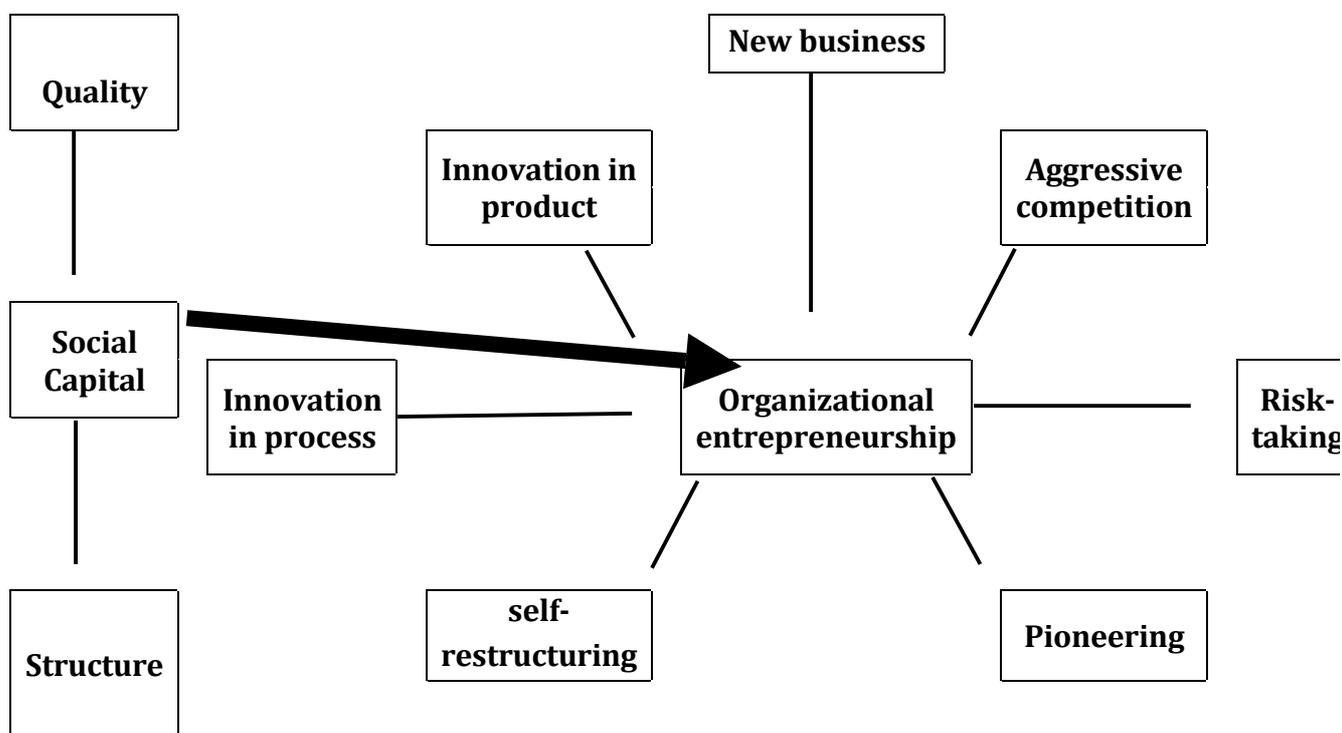


Figure 2. Conceptual model of research

Based on the above model, the original hypothesis states that there is a meaningful relationship between social capital and organizational entrepreneur. Secondary hypotheses also are so: there is a meaningful relationship between social capital and entrepreneurship.

Also, there is a meaningful relationship between quality dimension of social capital and entrepreneurship.

Research Experimental History:

Changnan expresses that there is a meaningful relationship between social capital, entrepreneurial directing and organization resources (Nan, 2007).

Fokuyama states that social capital has transformed family workshops to Taiwan Economic development engine (Fokoyama, 1995).

Coleman believes that there is a near relationship between social capital and human capital on economic growth. The effect of social capital on economy is avoidable (Coleman, 1993).

Kavoisi and Seiyd-doost in a research under the title of "the effect of social capital on the rate of satisfaction of insured people" concluded that the rate of attainment of to social security organization to the satisfaction of insured individuals depend on the rate of its employees success in establishing fair interaction with them, and the quality of establishing such interactions relates to the quality of their social communication with each other and the rate of social capital saving inside the organization (kavousi, Seyed-dust, 2009).

Rahman Saádat is taking action to estimate social capital level and its process in the country with the application of fuzzy style. All the results show that social capital has several fluctuations caused by political, historical and cultural issues. In long run, this process has slight decline, and in recent years, this decline has increased (Saádat, 2009).

Research methodology:

In present research, in order to collect information, both procedures, the field and library has been used, and if we consider research classification according to goals, this research will be among those applicable researches. If the classification of various researches is based on nature and style, the research method of the study due to its nature lies among descriptive and non-examinational researches (field and measurement) and considering the style, it is among two-variable correlation research group.

Statistical population also consists of managers, chiefs and all the responsible persons of Mazinour Lighting Industry Company. Out of 500 employees present in the company, 128 persons were experts and above, and we got the number of statistical sample 96. As a result, 100 questionnaires were distributed and at the end, only 98 were collected.

Data gathering tools were questionnaires and the most needed information and data for analyzing questions and examining the hypotheses were done by using oral questionnaire tools.

In order to determine the capability of confidence, 6 coefficient of Cronbach is measured *Cronbach's alpha* (, 1951, 297-334). That is done by SPSS software. The least accepted value is 0.7, but 0.6 even 0.55 is also accepted Nunnally, 1978). Coefficient computed in research questionnaires has been more than 0.7.

Information and data analysis:

Pierson correlation coefficient procedure is used for hypotheses tests. In order to review the situation of each factor related to social capital and organizational

entrepreneurship, binominal test, and for grading each factor, Friedman test are used. Besides, structural equation model consisting of confirmatory factor analysis (CFA) and the course analysis test has been used for appraising the research theoretical framework and reviewing of casual relationship among variables.

7.1. Descriptive data:

Out of 100 statistical samples, there were 95 men and 3 women. 9 were single and 89 were married. 95 persons were BS-holders, and 3 persons were Ms Holder. 18 persons had work experience below 5 years, 26 persons, between 5-10 years, 18 persons, between 10-15 years, 13 persons, between 15-20 years, 11 persons, between 20-25 years and 22 persons had experience more than 25 years.

7.2. Hypotheses Tests (analytical statistics):

7.2.1. Main Hypotheses Tests:

Main hypotheses: There is a meaningful relationship between social capital and organizational entrepreneurship.

		Social capital
organizational entrepreneurship	correlation coefficient	0.686
	meaningful level	0.000
	no. of observations	98

Table 1: Pierson correlation test – social capital and organizational entrepreneurship.

The rate of correlation coefficient between organizational entrepreneurship and social capital is equal 0.686 with meaningful level of 0.000. Since the rate of meaningful level is less than the rate of the first kind error in 0.01 level, therefore, hypothesis H0 is rejected. It means that, there is a meaningful relationship between social capital and organizational entrepreneurship. The amount of correlation coefficient shows a strong relationship between these two variables and since correlation coefficient has a positive sign, it shows that, with increasing social capital, the amount of organizational entrepreneurship also will increase. **7.2.2. Secondary Hypothesis Test no. 1:**

Secondary Hypothesis 1: There is a meaningful relationship between structural dimension of social capital and organizational entrepreneurship.

		Structural dimension of social capital
organizational entrepreneurship	correlation coefficient	0.682
	meaningful level	0.000
	no. of observations	98

Table 2: Pierson correlation test – structural dimension of social capital and organizational entrepreneurship.

The rate of correlation coefficient between structural dimension of social capital and organizational entrepreneurship is equal 0.682 with meaningful level of 0.000. Since the amount of meaningful level is less than the rate of the first kind error in 0.01 level, therefore, hypothesis H0 is rejected. It means that, there is a meaningful relationship

between structural dimension of social capital and organizational entrepreneurship. The amount of correlation coefficient shows a strong relationship between these two variables. Besides, since the correlation coefficient is positive, it shows this point that, with increasing the structural dimension of social capital, the rate of organizational entrepreneurship will also increase.

7.2.3. Secondary Hypothesis Test No. 2:

Secondary hypothesis 2: There is a meaningful relationship between quality structure of social capital and organizational entrepreneurship.

		Quality dimension of social capital
organizational entrepreneurship	correlation coefficient	0.352
	meaningful level	0.001
	no. of observations	98

Table 3 – Pierson correlation test – Quality dimension of social capital and organizational entrepreneurship.

The amount of correlation coefficient between Quality structure of social capital and organizational entrepreneurship is equal to 0.352 with meaningful level of 0.001. Since the rate of meaningful level is less than the rate of the first kind error in 0.01 level, therefore, hypothesis H0 is rejected. It means that, there is a meaningful relationship between social capital and organizational entrepreneurship. The amount of correlation coefficient shows a middle relationship between these two variables. Besides,

since correlation coefficient has a positive sign, it shows that, with increasing social capital, the amount of organizational entrepreneurship also will increase.

7.3. Binominal Test:

7.3.1. Binominal test – confidence variable

For confidence variable, there isn't a meaningful difference from mean (the distribution is normal): H0.

For confidence variable, there's a meaningful difference from mean (the distribution isn't normal): H1.

Variable	Group	Number	Observation rate	Meaningful
confidence	Group 1: lower than mean ($\leq P3$)	20	0.16	
	Group 2: higher than mean ($P > 3$)	78	0.84	0.000
		98	1.0	

Table 4 – Binominal test - Confidence variable

A meaningful level is less than the amount the first kind error in 0.01 level, therefore, hypothesis H0 is rejected. The ratio of higher observations than mean is more than the ratio of lower observation than mean. It means that, the confidence variable among the employees is at a favorable level.

7.3.2. Binominal test – Corresponding relationship variable

For the variable of corresponding relationship, there isn't a meaningful difference from mean: H0.

For the variable of corresponding relationship, there is a meaningful difference from mean: H1.

Variable	Group	Number	Observation rate	Meaningful
Corresponding relationship	Group 1: lower than mean ($\leq P3$)	23	0.2	0.000
	Group 2: higher than mean ($P > 3$)	75	0.8	
		98	1.0	

Table 5 – Binominal test - Corresponding relationship variables

Meaningful level is less than the amount of the first kind error in 0.01 level; therefore, hypothesis (H0) is rejected. The ratio of higher observations than mean is more than the ratio of lower observation than mean. It means that, corresponding relationship variable among employees at Mazinour organization is at a favorable level.

7.3.3. Binominal test – New business

For new business variable, there is not a meaningful difference from mean (H0) (distribution is normal).

For new business variable, there is a meaningful difference from mean (distribution isn't normal) (H1).

Variable	Group	Number	Observation rate	Meaningful
New business	Group 1: lower than mean ($\leq P3$)	82	0.88	0.000
	Group 2: higher than mean ($P > 3$)	16	0.12	
		98	1.0	

Table 6 – Binominal test – New business Meaningful level is less than the amount of the first kind error in 0.01 level; therefore, hypothesis H0 is rejected. Considering that, the ratio of higher observations than mean, is less than the ratio of lower observation than mean, therefore, it can be resulted that, following new business variable in Mazinour organization isn't at a favorable level.

7.3.4. Binominal test – Goods and Services innovation:

For services/product innovation, there is no meaningful difference from mean (distribution is normal) (H0).

For services/product innovation, there's a meaningful difference from mean (distribution is normal) (H1).

Variable	Group	Number	Observation rate	Meaningful
Goods and Services innovation	Group 1: lower than mean ($\leq P3$)	71	0.76	0.002
	Group 2: higher than mean ($P > 3$)	27	0.24	
		98	1.0	

Table 7 – Binominal test – Goods and Services innovation

A meaningful level is less than the amount of the first kind error in 0.01 level; therefore, hypothesis (H_0) is rejected. The ratio of higher observation than mean is less than the ratio of lower observation than mean. It means that, innovation in products and services are not at a favorable level.

7.3.4. Binominal test – Process innovation

For process innovation variable, there is no meaningful difference from mean (distribution is normal) (H_0).

For process innovation variable, there's a meaningful difference from mean (distribution is normal) (H_1).

Variable	Group	Number	Observation rate	Meaningful
Process innovation	Group 1: lower than mean ($\leq P3$)	70	0.86	0.000
	Group 2: higher than mean ($P > 3$)	28	0.14	
		98	0.1	

Table 8 – Binominal test – Process innovation

A meaningful level is less than the amount of the first kind error in 0.01 level; therefore, hypothesis (0) is rejected. The ratio of higher observations than mean is lower than the ratio of lower observation than mean. It means that, innovation variable at Mazinour Company is at a favorable level.

7.3.4. Binominal test – Self-restructuring variable

For Self-restructuring variable, there is a meaningful difference from mean (distribution is normal) (H0).

For Self-restructuring variable, there isn't a meaningful difference from mean (distribution is normal) (H1).

Variable	Group	Number	Observation rate	Meaningful
Self structuring	Group 1: lower than mean ($\leq P3$)	81	0.87	0.000
	Group 2: higher than mean ($P > 3$)	17	0.13	
		98	1.0	

Table 9 – Binominal test – Self-restructuring variable

A meaningful level is less than the amount of the first kind error in 0.01 level; therefore, hypothesis (0) is rejected. The ratio of higher observations than mean is lower than the ratio of lower observation than mean. It means that, Self-restructuring variable at Mazinour Company isn't at a favorable level.

7.3.6. Binominal test – Pioneering variable

For pioneering variable, there's not a meaningful difference from mean (distribution is normal) (H0).

For pioneering variable, there's a meaningful difference from mean (distribution is not normal) (H1).

Variable	Group	Number	Observation rate	Meaningful
pioneering	Group 1: lower than mean ($\leq P3$)	77	0.83	0.000
	Group 2: higher than mean ($P > 3$)	21	0.17	
		98	1.0	

Table 10: Binominal test – pioneering variable

Meaningful level is less than the amount of the first kind error in 0.01 level. The ratio of higher observation than mean is lower than the ratio of lower observation than mean; thus, it means that pioneering variable in Mazinour Company is not at favorable level.

7.3.7. Binominal test – Risk taking variable:

For risk taking variable, there is not a meaningful difference from mean (distribution is normal) (H0).

For risk taking variable, there is a meaningful difference from mean (distribution is not normal) (H1).

Variable	Group	Number	Observation rate	Meaningful
Risk-taking	Group 1: lower than mean ($\leq P3$)	72	0.76	0.002
	Group 2: higher than mean ($P > 3$)	27	0.24	
		98	1.0	

Table 11 – Binominal test – Risk-taking

A meaningful level is less than the amount of the first kind error in 0.01 level. Then, hypothesis (0) is rejected. The ratio of higher observations than mean is lower than the ratio of lower observations than mean. It means that, pioneering variable in the company is not favorable.

7.3.8. Binominal test – aggressive competition variable:

For aggressive competition variable, there isn't a meaningful difference from mean (distribution is normal) (H0)

For aggressive competition variable, there is a meaningful difference from mean (distribution is not normal) (H1)

Variable	Group	Number	Observation rate	Meaningful
aggressive competition	Group 1: lower than mean ($\leq P3$)	82	0.88	
	Group 2: higher than mean ($P > 3$)	16	0.12	0.000
		98	0.1	

Table 12 – Binominal test – aggressive competition

A meaningful level is less than the amount of the first kind error in 0.01 level; then, hypothesis (H_0) is rejected. The ratio of higher observation than mean is lower than the ratio of lower observation than mean. It means that, aggressive competition variable isn't in a favorable level.

7.4. Friedman variance analysis test:

7.4.1. Social capital variables rating:

There is no meaningful difference between present situations of mean degrees of social capital variables.

There is a meaningful difference between present situations of mean degrees of social capital variables. The value of K^2 to affirm one of the hypotheses, is 174.489 with freedom degree of 5 and meaning level near to zero. Since the amount of meaningful level is less than the amount of the first kind error in 0.01, there is a meaningful difference between present situations of social capital variables.

Priority	variable	Mean degrees
1	Variety	3.91
2	Corresponding relationship	3.83
3	Structural	3.16
4	Size	3
5	Confidence	2.95
6	Communicational	2.51

Table 13 – social capital variables rating

According to the results of table, the variety index in Mazinour Company is of more importance, and on the contrary, the less importance is given to communication index.

7.4.1. Organizational entrepreneur variables rating:

There is no meaningful difference between present situations of mean degrees of organizational entrepreneurship (H0).

There is a meaningful difference between present situations of mean degrees of organizational entrepreneurship (H1).

The amount of K2 is 17.742 with a freedom degree of 6 and a meaningful level near to Zero. Since the amount of meaningful level is less than the amount of the first kind error in 0.01 level, there is a meaningful difference between present situations of organizational entrepreneurship variables.

Priority	variable	Medium ranks
1	Innovation in products	3.01
2	Risk taking	2.98
3	Innovation in process	2.86
4	Pioneering	2.79
5	aggressive competition	2.76
6	New business	2.74
7	Self-restructuring	2.72

Table 14 – organizational present situation variables rating

According to the results, the highest rate is related to innovation in products and the lowest rate is related to self-restructuring. It means that innovation index is of the most importance and the least importance is given to self-restructuring index.

7.5. Analysis of structural equations model (SEM):

Two important applications of structural equations model are considered in this research. The first application known as a style for reviewing the currency of tools has been employed under the title of confirmatory factor analysis about both organizational entrepreneurship and social capital.

Second application has been employed as a strong technique for analysis of contemporary regression equations which is used in the course analysis framework in reviewing causal relationship between organizational entrepreneurship and social capital in present research.

7.5.1. Confirmatory Factor Analysis:

I) Designing of measurement Model Y for hidden characteristic of organizational entrepreneurship.

The Confirmatory factor analysis states that, whether the representatives which are considered for introducing infrastructure or considered hidden variables are really their reference or not. Also, the selected indicators with what accuracy are representative or graceful hidden variable. Since the hidden characteristic of organizational entrepreneurship here has the role of dependant variable, therefore, it's placed in framework of measuring Model Y.

In analysis model of Confirmatory factor analysis that has amounts higher than 2, are statistically meaningful (Bentler & Yuan, 1999, p. 185). Considering the results, all the reported values of t corresponding to standard parameters are above 2.

.Variable	Mark in model	Course coefficient	Standard deviation	t	p-value	U
New business	CE1	0/52	0.06	6.2	0.000	0.782
Innovation in products & services	CE2	0/41	0.09	5.34	0.000	
Innovation in process	CE3	0/42	0.09	4.82	0.000	
Self-restructuring	CE4	0/34	0.09	3.91	0.000	
Pioneering	CE5	0/35	0.09	2.67	0.000	
Risk-taking	CE6	0/51	0.10	5.36	0.000	
Aggressive competition	CE7	0/46	0.09	5.17	0.000	

Table 15 – Course coefficients and meaningful level of representatives related to the factor of organizational entrepreneurship

Fitting Model:

The ideal is that the amount of K2 has a meaningful level more than 0.05. Since the samples of the study were less than 200 cases; the results are interpretable. Considering the reported value of this quantity in the following table, the results can be considered as valid, because the amount of K2 was not meaningful and its meaningful level reported higher than 0.05. GFI, AGFI indicates a rate of relative variances and co-variances that can be explained by the model. Both of these criteria are between zero to 1, that if it be near to 1, the goodness of fitting model with observation data is more. The amounts of this model are higher than 0.9 that it confirms the results of K2 test. In case of RMR, if it be near to zero, the mentioned model has a better fitting. In this research, the slight amount of RMR (0.026) represents suitable explaining of co-variances. To review that in what extent the observed data is acting well, normed fit index (NFI), non-normed fit index (NNFI), incremental fit index (IFI) and comparative fit index (CFI) has been used. To Brown and Kodak point of views (1992), the values above 0.9 of these indices indicate a very proper fitting of designed model in comparison with other possible models. Finally, for reviewing that how the considered model compounds the fitting and saving together, a very strong index known as root mean square error of approximation. Suitable fitting and research designing for analysis model of confirmatory (RMSEA) has been used. RMSEA index is the root mean squares of approximation. For good models, this index is 0.05 and less. A model that in which this index be 0.10 or more, has a weak fitting (Homan, 2005, 30). The slight amount of this index (0.000) represents a very factor of organizational entrepreneurship.

Indexes	Reported value
K square	13.8, meaningful level 0.46
Root Mean Square Residual (RMR)	0.026
Goodness of Fit Index (GFI)	0.96
Adjust Goodness of Fit Index (AGFE)	0.91
Normal Fit Index (NFI)	0.94
Non-Normed Fit Index (NNFI)	1.00
Incremental Fit Index (IFI)	1.00
Comparative Fit Index (CFI)	1.00
Root Mean Square Error of Approximation (RMSEA)	0.000

Table 16 – Fit indexes of Y measuring model

According to the characteristics of the fitting, the data of this research is well fitted with factorial structure and theoretical foundation of organizational entrepreneurship variable. This represents that the questions are in a line with theoretical construct.

II) Designing of measuring model X for hidden characteristics of social capital.

Since the hidden characteristics of social capital here has the role of independent variable, therefore, it has been called measuring model X.

The values of t in the following table represent that all reported values of t are higher than value 2.

Variable	Mark in model	Course coefficient	Standard deviation	t	p-value	U
Quality dimension	Confidence	SC1	0/29	0.08	3.45	0.000
	Corresponding relationship	SC2	0/02	0.07	0.29	No meaningful
Structural dimension	Variety	SC3	0/51	0.09	5.7	0.000
	Size/Capacity	SC4	0/66	0.16	4.21	0.000
	Structural	SC5	-0/10	0.07	-1.43	No meaningful
	relational	SC6	0/48	0.10	4.71	0.000

0.70

Table 17 – Course coefficients and meaningful level of representatives related to the factor of social capital

Fitting Model:

K2 value in the following table shows that this quantity is meaningful. The index value of GFI is reported 0.94 and regard to the fact that GFI index comparing with K2 has a higher validity, then, it relies on this index and we appraise that the fitting of model is appropriate. The reported value of GFI for this model is higher than 0.9 that shows a clearance of total co-variances in the context of data in the research. AGFI value also is near to 0.9 and as its interpretation is more difficult than GFI, It has been relied on the value of GFI in absolute indices section.

Whatever the RMR of test is closer to zero, the mentioned model has a better fitting. The slight value of RMR in this research (0.07) shows a proper clearance of co-variances.

Values above 0.9 Normed Fit Index (NFI), Non-Normed Fit Index (NNFI) and Incremental Fit Index (IFI) indicate a very appropriate fitting of model. Finally, for reviewing that how this model compounds the fitting and saving together, it was used the very powerful index of Root Mean Square Residual (RMSEA). The value of this index 0.81, and is less than 1 that shows an acceptable fitting.

Indexes	Reported value
K square	16.99, meaningful level 0.049
Root Mean Square Residual (RMR)	0.07
Goodness of Fit Index (GFI)	0.94
Adjust Goodness of Fit Index (AGFE)	0.85
Normal Fit Index (NFI)	0.89
Non-Normed Fit Index (NNFI)	0.86
Incremental Fit Index (IFI)	0.90
Comparative Fit Index (CFI)	0.84
Root Mean Square Error of Approximation (RMSEA)	0.081

Table 18 – Fit indexes of X measuring model

7.5.2. The analysis of confirmatory course of structural model

In the structural model, we are looking to determine whether the present relationship between hidden characteristics is confirmed considering the data gathered from sample or not. With regard to t values in the following table, it can be said that for each standard parameter, the results are valid for all the parameters.

Hidden characteristic	Variable	Course coefficient	Standard deviation	t	U
Organizational entrepreneurship	New Business Innovation in Products and Services	CE1	0.043	5.01	0.001*
	Innovation in Process	CE2	0.083	5.75	0.001*
	Self-Structuring	CE3	0.080	5.2	0.001*
	Pioneering	CE4	0.082	3.66	0.001*
	Risk-taking	CE5	0.087	2.83	0.001*
	Competition	CE6	0.088	5.67	0.001*
	Quality	CE7	0.081	5.57	0.001*
	Structural	Q	0.077	5.34	0.001*
		E	0.091	6.49	0.001*

$\alpha = 0.7$

Table 19 – Course coefficients and meaningful level of representatives related to confirmatory course analyzing

** Meaningfulness in confidence level %99 (error 0.01)*

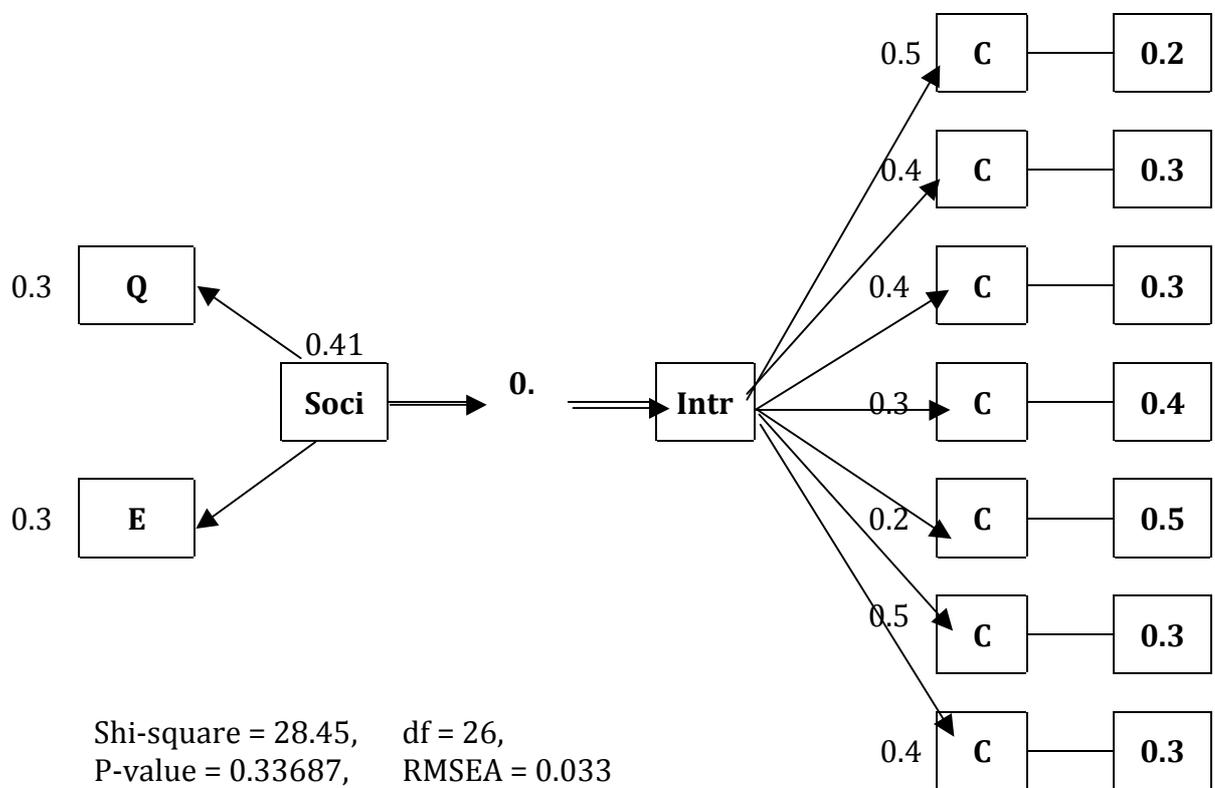
Gamma value	t value	Standard deviation
0.96	6.19	0.16

Table 20 – Structural coefficient and t value for explanation of relationship between hidden characteristics

Since the only casual relation is relation of organizational entrepreneurship construct as the dependant variable and social capital construct as the independent variable, there is only a Gamma value which regard to the value of (t) test, it is meaningful. Therefore, there is a meaningful relationship between these two construct. The high value of course coefficient (0.96) represented the higher effectiveness construct of organizational

entrepreneurship construct than social capital. As the fitting characteristics shows in the table, the data of this research has a proper fitting with factorial structure and theoretical foundation.

The below figure is the final model *Codification* with LISREL 8.54 software.



Indexes	Reported value
K square	28.45, meaningful level 0.33
Root Mean Square Residual (RMR)	0.028
Goodness of Fit Index (GFI)	0.94
Adjust Goodness of Fit Index (AGFE)	0.89
Normal Fit Index (NFI)	0.92
Non-Normed Fit Index (NNFI)	0.98
Incremental Fit Index (IFI)	0.99
Comparative Fit Index (CFI)	0.99
Root Mean Square Error of Approximation (RMSEA)	0.033

Table 21 – Fitting indexes of the model

Fitting Model:

Considering the reported value for K2, the acquired results can be considered as valid. The value of GFI for this model is 0.94, which confirms the results of K2 test. The value of AGEI is also 0.89 that with regard to the results of the K2 and GFE indices is acceptable. The slight value of RMR in this research (0.28) represents the proper explaining of co-variances. The values above 0.9 of normed fit index (NFI), non-normed fit index (NNFI), incremental fit index (IFI) and comparative fit index (CFI) also represents that the fitting of model is very appropriate. Finally, the less value of RMSEA index (0.33) represents the very proper fitting of gathered data and their excellent fitting.

8. Summing up:

8.1. Discussions and conclusions:

The total objective of the present research is a comparison between quality and structure of social capital with organizational entrepreneurship in Mazinour Lighting Industry. To gain this goal, a brief but documentary explanation of definitions of terms, problem statement and eligibility of this research, conceptual model and history of previous studies are offered. Considering the results of tests, it is concluded that:

- 1) There is a meaningful, strong and positive relationship between social capital and organizational entrepreneurship, so with increasing social capital, the rate of organizational entrepreneurship will increase.
- 2) There is a meaningful, strong and positive relationship between structural dimension of social capital and organizational entrepreneurship. With increasing the structural dimension of social capital, the rate of organizational entrepreneurship will increase.
- 3) There is a meaningful, positive and strong relationship between quality dimension of social capital with organizational entrepreneurship; so, with increasing the quality dimension of social capital, the rate of organizational entrepreneurship will increase.
- 4) Corresponding relationship and confidence variables are in a favorable level.
- 5) New business and aggressive variables are also in a favorable level in Mazinour Industry.
- 6) Variety index possess the highest rank among the social capital requirements. In contrast, the lowest rank belongs to communicational index.

7) Innovation in products and services index possesses the highest rank among the organizational entrepreneurship requirements. The lowest rank belongs to communicational index, too.

8) With regard to the final model as well as resulted parameters, it can be stated that the offered model consists a very appropriate fitting of the gathered data.

8.2. Managerial application suggestions:

8.2.1. It is suggested that a new group under the title of "Producers of new products and services" be formed and it should be the supporter of entrepreneurial culture.

8.2.2. The findings show a low level of organizational strategy regard to being pioneering; therefore, the organization must try to decrease its reactive or deductive aspects and step toward a predictive strategy.

8.2.3. An innovative business in organization would be made through social exchanges and communications. An organization must form some teams or networks, which play the duty of programming and planning to exploration of new markets.

8.2.4. For high managers, it is necessary to turn toward active and organic structures. Whatever employees are more inflexible in new structures and have more freedom at their works and possess the authority to decision-making, a more entrepreneurial culture can be occurred.

8.2.5. The study shows the low level of aggressive competition of the organizations. Some effective solutions in this field consist of increasing goods and services in comparison to competitors, taking more attention to customers and meeting their needs,

and applying new administrative techniques and technologies (such as IT) better and more than competitors.

8.2.6. Establishing and designing a proper reward system is an effective factor to making an organization entrepreneur.

8.3. For future studies:

Based upon the mentioned cases in the text, the below suggestions are offered:

8.3.1. The role of social capital in a knowledge-based organization.

8.3.2. The effect of social capital on financial function of organization.

8.3.3. The study of social capital relationship and social entrepreneurship.

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Comparison of Performances of Male- and Female-Headed Lao MSMEs based on Personal, Family, Social Network, and Skill Factors

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ABSTRACT

Studies in the management field have recognized the emerging importance of female entrepreneurs' contribution to the development of nations. However, surprisingly little research has investigated its antecedents and the firm performance of male- and female-headed firms, particularly in Lao People's Democratic Republic. The contribution of this study was to measure firm performance of male- and female-headed firms by the integration of economic and non-economic indicators. This paper's objectives are to compare the performance of male- and female-headed firms

and to identify clear differences in determinants of performance between male- and female-headed firms from the perspectives of personal, family, social network, and skill determinant factors. Two hundred micro, small, medium sized firms (99 male-headed and 101 female-headed) with between one to 99 employees in the service and trade sectors in six districts of Vientiane Capital were surveyed. The findings showed that personal, social network, and skill determinant factors had impacts on the performance of male- and female-headed firms and were consistent with those of other studies. Also, the findings showed that there was no difference in performance between male and female-headed firms when performance is measured by incorporated economic and non-economic indicators.

Keywords: Personal factor, family factor, social factor, skill factor, economic and non-economic performance, incorporated performance

INTRODUCTION

Female owned businesses play an important role in contemporary Lao economy with 29% of all businesses with more than five employees nationally and 35% in Vientiane Capital being owned and/or headed by females (Lao Department of Statistics 2009). There is no doubt that these enterprises make a considerable contribution to the Lao economy in various ways such as job creation.

Sociologists have adopted the frame of reference that the world consists of multiple socially-constructed realities and is established through social interactions, language, knowledge, and experience (Berger & Luckman 1967). This theory as it relates to females presents a different reality and the situations and experiences of females have

39 been examined in a number of psychological studies (Gilligan 1993; Miller

1976). Helgesen (1990) developed a concept from the ideas of Mintzberg (1973) that female managers emphasized interpersonal connections, coped with work and family matters simultaneously, and were able to achieve individual and business objectives. Other studies suggested that firm performance should be measured more comprehensively by adopting non-economic and economic indicators and that influential factors should also include individual objectives that impact on the comprehensive performance.

This study incorporates both economic and non-economic performance indicators and recognizes personal, family, social network, and skill matters as having potential effects on the performance of male- and female-headed firms. The findings of this study are important for a number of reasons. Existing studies of performance of male-headed firms (MHFs) and female-headed firms (FHF) have mainly addressed personal, family, social network, and skill factors separately. This investigation accommodates these factors as antecedents to performance of male- and female-headed firms. The results could lead to entrepreneurs' greater awareness of the influential factors on the performance of their firms. This awareness can help them to emphasize the importance of antecedents (personal, family, social network, and skill factors) that are closely linked with the individual lives of entrepreneurs, in particular female entrepreneurs. The results also provide valuable information for policymakers who make decisions that affect MHFs and FHF.

The objectives of the paper are to compare the performance of MHFs and FHF and to identify clear differences in determinants of performance between the two from the perspectives of personal, family, social network, and skill factors.

The introduction of the paper is followed by the literature review and the development of the hypotheses. The paper then describes the research methodology, presents the data analysis and discussion, and then provides the conclusion and policy implications from the findings. Finally, it ends with the limitations and suggestions for further research.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Firm performance

Several studies found that male entrepreneurs outperform female counterparts based on quantitative economic measures such as sales turnover, profitability, and jobs created (Brush, 1992; Brush & VanderWerf, 1992; Cuba, Decenzo, & Anish, 1983; Hisrich & Brush, 1983; Longstreth, Stafford, & Mauldin, 1988). For example, FHF's showed lower financial returns than MHF's (Brush, 1990; Hisrich & Brush, 1987) and a slower rate of growth than MHF's (Kalleberg & Leicht, 1991). In business practice, Sexton and Bowman-Upton (1990) observed that growth is a choice and is an unlikely option for many FHF's that pursue other goals. One female-owned business suggested that growth meant not only growing in size but also growing in other aspects such as knowledge and ability to do better (Nelton 1990:19 cited in Brush, 1992).

In addition, empirical studies reported that MHF's perform better than FHF's in terms of economic performance. For example, Rosa et al. (1996) studied 600 firms (half MHF's and half FHF's) in the United Kingdom and found considerable differences in quantitative financial performance between the two groups of firm. For example, FHF's

underperformed in terms of sales turnover, capital assets, the number of

employees, and VAT registration compared to male companies. A study by Du Rietz and Henrekson (2000) of 4,200 firms (405 FHF's) showed that FHF's perform worse than MHF's when sales are used as the performance indicator, but not in terms of profitability, employment, and orders. These authors further reported that the observed differences in economic performance can be attributed to the systematic gender differences in the choice of industry or other structural aspects.

Although financial performance is a very important indicator for firms, traditional economic measurement of business performance was criticized as it is fragmented and presents only a one-sided view of female entrepreneurs' success (Buttner & Moore, 1997). Neider (1987) found that females starting business aim to fulfill high needs of achievement, independence, and control rather than for financial returns. Sexton (1989) observed that FHF's decide to pursue goals other than the business' growth, such as achieving independence and flexibility in balancing family responsibilities with work commitments (Rosa, Carter, & Hamilton, 1996). In fact, the goal of FHF's has frequently been cited in non-economic performance terms including customers' and employees' satisfaction (Hisrich & Brush, 1987; Kaplan, 1988; Mescon, Stevens, & Vozikis, 1983-1984) in addition to maximizing the firm performance (Chaganti, 1986), and to help others and self-fulfillment (Thompson & Hood, 1991). Buttner and Moore (1997: 34-46) identified measures of success for female entrepreneurs including achievement of their goals, profit, and growth. To stay in business, goals are seen in terms of primary economic performance (Kent, Sexton, & Vespec, 1982). However, several researchers asserted that a balance between economic and non-economic goals may be more appropriate for FHF's (Chaganti, 1986; Hisrich & Brush, 1987; Kaplan, 1988). Therefore, Brush (1992:21-22) suggested that business

performance indicators for FHF's should consider both economic and non-economic performance indicators including employees' satisfaction, social contributions, goal achievement, and effectiveness.

A comparison of male- and female-headed firms based only on economic performance without consideration of non-economic performance is not sufficient. To overcome this, this paper incorporates economic and non-economic measurements as performance indicators (hereafter referred to as "firm performance") to reflect performance of male- and female-headed firms. Then, the following hypothesis is established:

Hypothesis 1: There is no difference in performance between MHFs and FHF's when performance is measured in incorporated economic and non-economic terms.

In addition to the lack of consideration of non-economic matters there is also a lack of quantitative literature on the measurement of antecedents determining performance and a substantial amount of qualitative literature suggesting taking account of these antecedents in comparative studies regarding the performance of male- and female-headed firms. Based on those arguments, integrated indicators of economic and non-economic performance are expected to have relationships with its antecedents (personal, family, social network, and skill factors) that have been considered to be integrated into the analysis.

Personal Factor

Personal factor refers to personal success, personal related factors, and personal qualities. High motivation in these three mentioned components of personal factor is crucial to firm performance. Firstly, personal success in business often refers to high income and wealth (Brush 1992). However, it is not always the case for female business owners because success for them is defined in terms of self-fulfillment (Buttner & Moore, 1997). A study by Zapalska (1997: 80) of female entrepreneurs in Poland found that business success included achievement and job satisfaction. In practice, several female-owned businesses viewed personal success as achieving a balance between family and work (Holmquist & Sundin, 1990; Humphreys & McClung, 1981; Neider, 1987; Schwartz 1976). This implies that success is consistent with the earlier proposed motive for starting and acquiring businesses. In this regard, family, social, and business relationships are linked, indicating that measures of success should not only be seen as achievements of personal wealth. Secondly, Stoner, Hartman and Arora (1990) identified personal related factors of female-owned business to include perception of self-worth or self-esteem and life satisfaction. These factors can be positive motives for individual entrepreneurs to make the utmost effort to achieve better performance. Thirdly, personal qualities are also essential to the success of female firm owners (Deng, Hassan, & Jivan, 1995; Teo, 1996). These personal qualities can be observed through the competence of entrepreneurs in terms of commitment in business and personal lives. Although the literature has not provided any direct empirical observations of this dimension, this study hypothesizes that high motivation in personal success, personal related factors (self-fulfillment, self-esteem, and life satisfaction), and personal qualities reflected in competence (commitment in

business and personal lives) are expected to have a positive impact on the performance of male- and female-headed firms. Thus:

Hypothesis 2: Personal factor has a positive relationship with performance of male- and female-headed firms.

Family factor

Family factor is also considered to be a function of firm success. Stoner, Hartman and Arora (1990) included family-related factors of female-owned business such as happiness in marriage, marital status, and size of the family. Another important family factor in the success of FHF's includes family support which helps female managers to better cope with the stress of operating business (Deng, Hassan, & Jivan, 1995; Hisrich & O'Brien, 1981). Tamres, Janicki and Helgeson (2002) found that females seek emotional support more than males. Brush (1992) stated that females' personal reality is closely connected to family, work, and community relationships, and women generally show a relationally-based ethic (predominantly concerned with care). Males' reality appears as separate and autonomous, with decision-making being logical and rule-based and more concerned with justice and rights (Gilligan, 1993). Females tend to have a primary focus on domestic responsibilities, work part-time, and have interrupted careers (Aldrich, 1989; Gould & Parzen, 1990; Larwood, Stromberg, & Guter 1985). Literature showed that female-owned businesses are more likely to have several support systems (Hisrich & Brush 1983; Olm, Carsrud, & Alvey 1988; Smeltzer & Fann 1989) and especially a spouse or significant other tends to be a crucial factor for success in female-owned businesses (Hisrich & Brush, 1983; Hisrich & O'Brien 1981; Nelson, 1987; Sexton & Kent, 1989). Family support is found to be one of the influential factors in the success of female business owners (Deng,

Hassan, and Jivan, 1995; Teo, 1996). Furthermore, balancing family and work are important factors in this success (Buttner & Moore 1997). In fact, most FHF's have insufficient support from their families due to the traditional responsibilities such as domestic roles and child care. In the case of American couples the segregation of duties at home seems to be disproportional among males and females in dual-career families. For example, females spend more time on housework than males and are more likely to be involved as the primary caretakers of children (Blair & Lichter, 1991). This leads to conflict in the allocation of time for domestic and business tasks. Stoner, Hartman and Arora (1990) found that female-owned businesses experience work-home role conflict in terms of their family structure or in the allocation of time at work, particularly in the early stages of their business cycle. As a result, poor conditions in family factor had a negative relationship with performance of FHF's, meaning that better conditions in family factor have a positive impact on the performance of FHF's. Therefore:

Hypothesis 3[1]: Better conditions in family factor have a positive relationship with the performance of FHF's.

In MHF's, male entrepreneurs are often not involved with traditional family duties and pursue their business without concern for the domestic roles as they are likely to have the full support of their family members. This allows them to have enough time to put effort into business to improve performance. Thus:

Hypothesis 3[2]: Family factor has no impact on the performance of MHF's.

Social Network Factor

The social network factor plays an essential role in the performance of male- and female-headed firms. In social life, females' social networks are frequently a function of their children, such as parent-teacher associations and school committees, and compared to males they are often excluded from informal business networks, professional business clubs, male-only clubs, old boys' networks, and business lunches (Brush, 1990; Gould & Parzen, 1990) because of other obligations at home and lack of time (Belcourt, Burke, & Lee-Gosselin, 1991). But the networks are essential to survival of female-owned firms (Blanco, LeBrasseur, & Nagarajan, 1996; Brodsky, 1993; Shim & Eastlick, 1998) and females are good at developing relationships (Teoh & Chong, 2007). These relationships can build effective networks with external partners such as suppliers, customers, and financial institutions that are channels to access resources and sustain the performance of FHF's. The important networks can provide support systems, mentors, and advisors. The existence of business associates and friends, and participation in trade associations and women's associations are crucial to the performance of both MHFs and FHF's (Hisrich & Brush, 1987).

Thompson and Hood (1991) contended that a female's perception of the corporate social performance of their business is different from a male's because of their psychological make-up and sociological experiences. Success for female entrepreneurs includes making social contribution such as caring for others in the community (Buttner & Moore, 1997). This social contribution can create valuable relationships and social networks with key customers and community.

In these ways, social networks can channel the firms to important resources and business partners as well as increase both social recognition and social relationships through help to others. This can lead to an improvement in the reputation and the brand royalty of products and services that the firms offer to the community and society leading to increased sales. Therefore:

Hypothesis 4: The social network factor has a positive relationship with the performance of male- and female-headed firms.

Entrepreneur's Skill Factor

Entrepreneurs need a range of skills to deal with the complex business world to achieve their business goals. For females a number of skills such as human relations, communication, negotiation, business, and knowledge of product and service skills are recognized as influential factors in their success (Rashid, 1996; Teo, 1996).

Firstly, human relation skills can help inspire teamwork and staff in an organization (Rashid, 1996). These skills help unite members in a group and allow them to work better together internally and externally to achieve business goals. Effective human relation skills can have a positive impact on firm performance.

Secondly, communication skills are important to firm success (Rashid, 1996). Communication is the process of sending and receiving symbols with meanings attached (Schermerhorn, 2010:407) and may take various forms, such as face-to-face and via phone, fax, e-mail, voice mail, written messages, memos, letters, and reports and may be with different persons, members of the team, subordinates, and/or

external partners. Kray and Thompson (2005) found that males are expected to use more aggressive, verbal message strategies than females while females are expected to use more pro-social message strategies than males. The communication skills of male- and female-headed firms are crucial to link the firms with people and achieve social networking.

Thirdly, negotiation skills are important to firm success as they aim to achieve mutual agreement among parties to allow the sharing of preferential benefits. Negotiation is the process of making joint decisions when the concerned parties have different preferences (Schermerhorn, 2010:421). In practice, it can have positive and/or negative outcomes. For example, negotiation for business purposes may involve sales, purchases, staff contracts, loans for business finance, and transactions. It is interesting to note the different style of male and female negotiators because of the conversation styles among them that could reflect the outcome of the negotiation. In a study of conversations styles of male and female negotiators, Tannen (1990) observed that male negotiators are expected to adopt more confrontational styles during the negotiation process to maximize their own outcome, whereas females are expected to create a more positive impression than male counterparts. Kray and Thompson (2005) found that female negotiators show a greater concern for relationships than do male negotiators in competitive contexts. These authors further observed that males may have more information through old boys' networks, more knowledge about the negotiation process, and more experience compared to female negotiators, leading to differences in performance of males and females.

Fourthly, business skills in terms of the generation of ideas and dealing with people were found to have a positive relationship with performance (Brush & Hisrich, 1991). As business skills are concerned with business development, it can be argued that female-owned firms face challenges of learning business skills early in their business life cycle and are thus less profitable than in later stages in which competence has been developed (Miskin & Rose, 1990). One of the business skills often referred to is planning and this was reported to have a positive relationship to firm performance in a meta-analysis of 14 studies (Schwenk & Shrader, 1993). A study of 220 Israeli female entrepreneurs found that there is a positive relationship between business skills and performance (Lerner, Brush & Hisrich, 1997).

Lastly, knowledge of product and service skills is important to the success of firms (Teo, 1996). It was found that owners/managers have a good knowledge about the product and services in the market. This knowledge can be used as a self-assessment of weaknesses, strengths, opportunities, and threats and, as a result, firms can create short-term and long-term planning to deal with unforeseen situations in the business environment.

The literature showed that various skills of male- and female-headed firms are expected to have an impact on their performance. Therefore, the following hypothesis is proposed:

Hypothesis 5: Skill factor has a positive relationship with performance of male- and female-headed firms.

Control Variables

In this study, control variables were used to justify factors other than theoretical variables that could explain the variance in dependent variables. Education, firm size, firm age, and industry sectors, all features expected to influence the performance of male- and female-headed firms, were adopted as control variables.

Education. Previous literature used the education of entrepreneurs as a variable as it is expected to influence the path to business success through the enhancement of psychological confidence and knowledge. Danneels (2008, 525) found that a firm's previously accumulated knowledge facilitates the absorption of further knowledge. The entrepreneurs' years of formal education before starting a business have a positive impact on firm performance (Brush & Hisrich, 1991). Box, White and Barr (1993) confirmed that there was a positive relationship between entrepreneurs' high levels of educational performance and this can keep small businesses profitable (Yusuf, 1995). Previous studies of comparisons between female and male entrepreneurs did not control factors such as educational levels (DeMartino & Barbato, 2003). The present study controlled the education of male and female entrepreneurs as it was expected to have an impact on performance.

Firm size. Literature on the differences in performance of male- and female-headed firms recognized the effect of firm size. For example, FHF's tend to employ fewer people compared to male counterparts (Charboneau, 1981; Humphreys & McClung, 1981). This means that FHF's are more likely to exposure to the liabilities of smallness compared to MHF's (Kalleberg & Leicht, 1991). These liabilities include problems in

51 raising capital, fulfilling government regulations, and competing for labor

with bigger firms (Aldrich & Auster, 1986). Kalleberg and Leicht (1991) believed that the smallness of FHF's is to blame for their underperformance as compared to MHF's. Firm size can reflect on past success and may influence current firm performance (Aldrich 2000; Ravichandran & Lertwongsatien, 2005) and can be an important determinant of firm performance and survival (Mukhtar, 2002). Bigger firms can provide greater economies of scale compared to smaller companies (Dass, 2000).

Firm age. Firm age indicates the length of time a company has been in business. This tends to have an effect on the practice of management by the accumulation of knowledge through learning by doing, increased confidence in problem-solving capability, and enhanced ability to improve business plans to cope with uncertainty (Mukhtar, 2002). Moreover, firm age can be seen as an indication of external legitimacy of the existence of inter-firm relationships, staying power, and pervasiveness of internal routines (Fichman & Kemerer, 1993; Kalyanaram & Wittink, 1994), all of which can impact on current firm performance. On the other hand, younger firms may be faced with the responsibilities of newness that can confound their performance (Aldrich & Auster, 1986; Hannan & Freeman, 1984; Ravichandran & Lertwongsatien, 2005). Younger firms seem to have lower sales and therefore lower profits (Watson, 2002) whereas older firms appear to be larger in terms of sales turnover, number of employees, and capital assets (Rosa, Carter, & Hamilton, 1996). Furthermore, older companies tend to establish good networks and have established relationships with business partners, suppliers, financial institutions, communities, government, and customers as well as having an established reputation in the markets. Therefore, firm age often represents the power and experience of firms in its industry, an influential factor for firm success.

Industry sectors. It is also important to control industry sectors to remove the bias in the findings due to the variation in sectors (Boden & Nucci, 2000; Carter, Williams, & Reynolds, 1997; Chell & Baines, 1998; Du Riet & Henrekson, 2000; Fischer, Reuber, & Dyke, 1993; Mukhtar, 2002; Robinson & Sexton, 1994; Singh, Reynolds, & Muhammad, 2001). FHF's are found to be dominant in retail sales and in the personal and educational service industries, a so-called 'female ghetto' (Kalleberg & Leicht, 1991). Firms in the service and trade industries normally expect lower growth rates and less success quantified by earnings or returns on investment compared to firms in other industries because service and trade industries are labor intensive and highly competitive in terms of their product markets (Humphreys & McClung, 1981). The industries in this study were grouped into two sectors, trade and service.

RESEARCH METHODOLOGY

Sample and Data Collection

The authors collected information on the factors that impact on firm performance of micro, small, and medium sized enterprises (MSMEs) in the service and trade sectors by the use of a field survey in six districts (Xaysettha, Sisattanak, Chanthabouly, Sicottabong, Hadsayfong, and Xaythany) in the Vientiane Capital, Lao PDR from January to March 2010. The field survey was conducted by the researchers, one team leader, and four field workers.

The questionnaire was adopted after two pilot tests in Vientiane Capital. The first pilot survey was conducted in early January and then the questionnaire was modified. The second pilot survey was conducted in late January. Again, the questionnaire

was modified and finalized by the researchers. Finally, the actual survey was carried out in February and March 2010. The data was collected from 200 companies of which 99 were MHFs and 101 were FHF, with 1 to 99 employees.

Measurement

Table 1 shows the measurement of variables directly from the questionnaire. Principle Component Analysis (PCA) of factor analysis method was utilized for extracting factors from FAC1 to FAC5. Other variables were measured according to the questionnaire.

Table 1

Measurement of Variables	
Variables	Measurement
<u>FAC1</u> Firm Performance [5-Likert Scale]	<ul style="list-style-type: none"> • Employee satisfaction • Business relationship • Achievement of the organizational goal • Profit maximization
<u>FAC2</u> Personal Factor [5-Likert Scale]	<ul style="list-style-type: none"> • Self-fulfillment • Personal achievement • Satisfaction being one's boss • Overall entrepreneur's job satisfaction
<u>FAC3</u> Family Factor [5-Likert Scale]	<ul style="list-style-type: none"> • Balancing family and work • Family relationship • Family status (happiness and wealth)
<u>FAC4</u> Social Network Factor [5-Likert Scale]	<ul style="list-style-type: none"> • Social relationship • Social contribution • Social recognition/increase social status • Helping others
<u>FAC5</u> Entrepreneur's Skill Factor [5-Likert Scale]	<ul style="list-style-type: none"> • Human relation skill • Communication skill • Negotiation skill • Business skill • Knowledge of product and service skill

Gender	This refers to the sex of entrepreneurs. Male entrepreneur is represented by 1 while female entrepreneur by 0.
Education	This is measured by ordinal numbers from 1 to 10 corresponding to the level of education of owner/managers. From the lowest to the highest level these are: not complete primary, primary, not complete lower secondary, Lower secondary, not complete upper secondary, upper secondary, vocational, technical, bachelor degree, and post graduated (Master/Ph.D).
Firm size	This is measured by the total number of current full-time employees. According to Prime Ministerial Decree No.42 (2004), the Lao PDR defines a micro firm as consisting of 1 to 2 employees; a small firm consisting of 3 to 19 employees, a medium firm having 20 to 99 employees and a large firm having 100 employees or more. Our sample firms belong to the micro, small and medium sized firm categories.
Firm age	This is the number of years since the MSMEs were established, which is taken to represent industry experience for the firm. Firm age is measured by the number of years since the firm was incorporated (Ravichandran & Lertwongsatien 2005).
Industry sectors	They were recoded as two industry dummy variables by controlling trade and service sector (Robinson & Sexton 1994).

DATA ANALYSIS AND DISCUSSION

Factor Analysis and Scale Reliability

Factor analysis was employed to identify the determinant factors of business success for male- and female-headed MSMEs in Lao PDR. To test the relevance of factor analysis for the data set, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was applied. According to the suggestions of Kaiser (1974), variables having a KMO value of less than 0.5 were dropped from the study. The variables with factor loadings above 0.4 were recommended by Kaiser (Bryman, 1990) or loadings of 0.40 or greater were considered meaningful for interpretation (Ford, MacCallum, & Tait, 1986). For this study, only variables with factor loadings from 0.5 were included in the analysis. The

KMO values for the data set, as shown in Table 2, range from 0.67 to 0.77,

indicating that factor analysis qualified for data analysis. The Bartlett Test of Sphericity was highly significant for five factors in Table 2, suggesting that factor analysis can be applied to the data set because it was unlikely that the correlation matrix of the variables was an identity.

This study checked the reliability by the use of Cronbach's Alpha. If the Cronbach's Alpha achieved 0.70, it was sufficient for the reliability of data set (Paige & Littrell, 2002). For this study, the Cronbach's Alpha of the five factors ranged from 0.70 to 0.84, indicating the reasonable reliability of the data (see Table 2).

Table 2
Factor Analysis and Scale Reliability

Factor Name and Items	Factor Loading	Eigenvalue	Kaiser-Meyer-Olkin KMO
<u>Firm Performance [FAC1]</u>		2.12	0.67
Employee satisfaction	0.87		
Business relationship	0.83		
Achievement of the organizational goal	0.65		
Profit maximization	0.50		
Cronbach's Alpha =0.70			
<u>Personal Factor [FAC2]</u>		2.42	0.76
Self-fulfillment	0.84		
Personal achievement	0.80		
Satisfaction being one's boss	0.76		
Overall entrepreneur's job satisfaction	0.55		
Cronbach's Alpha =0.72			
<u>Family Factor [FAC3]</u>		2.06	0.69
Balancing family and work	0.86		
Family relationship	0.82		
Family status (happiness and wealth)	0.81		
Cronbach's Alpha =0.77			
<u>Social Network Factor [FAC4]</u>		2.42	0.72
Social relationship	0.87		
Social contribution	0.81		

Social recognition/Increase social status	0.78		
Helping others	0.63		
Cronbach's Alpha =0.78			
<u>Entrepreneur's Skill Factor [FAC5]</u>		3.09	0.77
Human relation skill	0.83		
Communication skill	0.83		
Negotiation skill	0.77		
Business skill	0.76		
Knowledge of product and service skill	0.73		
Cronbach's Alpha =0.84			

Models

After factor analysis and the scale reliability test, the regression analysis was used to determine the impact of various variables on the performance. The analysis adopted three models. The first model, to answer hypothesis 1, examined if there was any differences in performance of female- and male-headed firms. The first equation was used to examine the relationship between one independent variable, gender (GD_i) and the dependent variable performance (PER or FAC1). In equation [1], the control variables (x_j) included personal factor (FAC2), family factor (FAC3), social network factor (FAC4), and skill factor (FAC5), education, firm size, firm age and industry sectors (trade and service). The first model or overall model is specified in equation [1] as follows:

$$PER = \alpha_0 + \beta_1 GD_i + \sum_{j=1}^9 \gamma_j x_j + e \quad [1]$$

In the second and third models, the regression analysis was used to determine the impact of various variables on the performance. For these two models, the whole

sample was classified into two groups, namely the female- and male-headed firms, to compare the determinant factors that influence performance of female- and male-headed firms in Lao MSMEs. The multiple regression models are specified in equations [2] and [3] below:

$$PER_{Female} = \alpha_0 + \sum_{i=1}^4 \beta_i x_i + \sum_{j=1}^5 \gamma_j z_j + e \quad [2]$$

$$PER_{Male} = \alpha_0 + \sum_{i=1}^4 \beta_i x_i + \sum_{j=1}^5 \gamma_j z_j + e \quad [3]$$

where, in equation [2] PER_{Female} [FAC1] is the performance of female-headed firms and in equation [3] PER_{Male} [FAC1] was the performance of male-headed firms; x_i is the independent variables: personal factor (FAC2), family factor (FAC3), social network factor (FAC4), and skill factor (FAC5). Control variables (z_j) included education of entrepreneurs, firm size, firm age, and industry sectors (trade and service).

Analysis Results

Differences both in characteristics of male and female entrepreneurs and in business characteristics are illustrated in Table 3. In the sample, male entrepreneurs accounted for 49.5% of the total sample and 50.5% were female entrepreneurs.

Education levels of male and female entrepreneurs showed significant differences. Male entrepreneurs tended to have a higher education level relative to female entrepreneurs. For example, 30% of male entrepreneurs obtained bachelor degrees whereas only about 16% of female entrepreneurs attained this level. Moreover, there

was a larger proportion of male entrepreneurs who completed technical school. However, there were higher proportions of female entrepreneurs who earned post-graduate qualifications and completed upper secondary school than males.

The ages of the firms were diverse. The majority (86.14%) of FHF's were between 1 to 10 years old while 79.80% of MHF's fell in the same group. For MHF's, 18.18% had stayed in business between 11 to 20 years compared to 10% of the firms owned by females. In general, differences in ages of businesses existed in male- and female-headed firms but both groups tended to be young.

The differences in firm size can impact on the performance of MHF's and FHF's. The majority of firms in male and female-headed firms were small-size (69.70% of the MHF's compared to 62.38% of the FHF's). The second large share of firm size between male- and female-headed firms was in micro-size firms. The share of firm size between male- and female-headed firms was almost the same proportion in medium-size firms.

Lastly, the majority of male- and female-headed firms were in the service industry (71% of MHF's compared to 53.47% of FHF's) and 46.53% of the FHF's and 39.7% of the MHF's were in the trading sector .

Table 3
Respondent Demographic Information for MHFs and FHF's

	MHFs		FHF's	
	Frequency	Percent	Frequency	Percent
Gender				
Male	99	49.5		
Female			101	50.5
Education				
Not complete primary	0	0.00	1	0.99
Primary	4	4.04	4	3.96
Not complete lower secondary	3	3.03	5	4.95
Lower secondary	6	6.06	10	9.90
Not complete upper secondary	8	8.08	9	8.91
Upper secondary	19	19.19	26	25.74
Vocational	19	19.19	14	13.86
Technical	9	9.09	13	12.87
Bachelor degree	30	30.30	16	15.84
Post graduated(Master/Ph.D)	1	1.01	3	2.97
Firm Age				
1-10 years old	79	79.80	87	86.14
11-20 years old	18	18.18	10	9.90
21-32 years old	2	2.02	4	3.96
Firm Size (No. Employees)				
Micro: 1-2	29	29.29	36	35.64
Small: 3-19	69	69.70	63	62.38
Medium: 20-62	1	1.01	2	1.98
Industry Sectors				
Trading	29	29.29	47	46.53
Service	70	70.71	54	53.47

The mean scores, standard deviations, and correlation coefficients of each variable are displayed in Table 4. To verify the validity of the models, the authors tested for multicollinearity among independent variables by calculating the variance inflation factor (VIF) in the regression models (Kleinbaum et al., 1998). The VIF was calculated by $1/(1-r^2)$ (Newbert, 2008:756). The VIF for all research variables ranged far below the VIF of 10 that Kennedy (1992: 756) suggested as a warning of 'harmful

collinearity.’ This suggested that there was no problematic multicollinearity present in the models as the results of any subsequent statistical tests, as shown in Table 5. This meant that the VIF statistics for each explanatory variable were at only above 1.0 (Neter, Wasserman, & Kuter, 1985), indicating that no variable caused harmful influence on the results because of multicollinearity (Sharfman & Fernando, 2008).

As shown in Table 5, the model displayed that the *F-statistic* was significant suggesting that it not only fitted the data well, but also indicated the robust relationship between explanatory variables and the dependent variable. The findings also indicated that all models explain a considerable amount of the explained variance in performance (R^2 ranges from 38 to 41% and adjusted R^2 ranges from 35 to 36%).

Table 4
Mean, Standard Deviation and Correlation Matrix

	Mean	S.D	1	2	3	4	5	6	7	8	9	10
PER-FAC1	3.91	0.57	1									
PF-FAC2	3.90	0.65	.448**	1								
FF-FAC3	3.71	0.68	.269**	.486**	1							
SF-FAC4	3.52	0.61	.308**	.402**	.454**	1						
SK-FAC5	3.82	0.67	.314**	.290**	.224**	.224**	1					
Gender	0.50	0.50	-0.002	-0.009	0.018	0.033	-0.04	1				
EDU	6.61	2.04	0.121	.183**	.281**	0.136	.234**	0.128	1			
FS	4.89	5.73	0.018	0.09	0.07	0.043	0.135	0.009	-0.048	1		
FA	6.85	5.41	0.095	0.04	0.135	0.12	-0.009	0.012	0.071	-0.024	1	
Trade	0.38	0.49	-.166*	-0.048	-0.085	-0.07	-0.123	-.178*	-.197**	-0.058	.175*	1
Services	0.62	0.49	.166*	0.048	0.085	0.07	0.123	.178*	.197**	0.058	-.175*	-1.0

**0.1 p≤; *0.05≤, (2-tailed).

The analysis results of MHFs and FHF are illustrated in Table 5 and are used to test hypotheses 1 to 5 as follows:

Hypothesis 1: The results showed that there was no relationship between the gender of the entrepreneurs and firm performance when the performance was

measured by incorporating economic and non-economic terms (see the overall model in Table 5). This was consistent with the findings of previous literature as females perceive success or performance differently from males, thus suggesting no significant differences in performance of male- and female-headed firms when the performance is measured by incorporating economic and non-economic performance indicators. This is because the success of FHF's was not only in economic terms but also non-economic terms such as employee satisfaction and social contribution through business relationships and achievement of goals. Therefore, it was reasonable to incorporate both non-economic and economic terms. This finding supports hypothesis 1.

Table 5
Regression Results

	Overall	MHF's	FHF's
	Coefficients	Coefficients	Coefficients
<i>(Constant)</i>	4.37***	2.64	5.72***
Gender	0.09	-	-
Personal factor-FAC2	0.23***	0.25**	0.16*
Family factor -FAC3	-0.05	0.10	-0.13
Social network factor-FAC4	0.25***	0.22*	0.27***
Skill factor - FAC5	0.17***	0.17**	0.22**
Education	0.07	0.11	0.02
Firm size	-0.02	-0.06	-0.04
Firm age	0.03	0.03	0.04
Trade	-	-	-
Service	0.53	0.94	0.15
R^2	0.38	0.41	0.40
<i>R-Adjusted</i>	0.35	0.36	0.35
<i>F-statistic</i>	12.82***	7.84***	7.82***
N	200	99	101

***0.01 p≤; **0.05≤; *≤0.10%, (2-tailed).

Hypothesis 2: Personal factor had a positive and statistical significance to the performance of male- and female-headed firms. The findings showed that high motivation in personal success, personal-related factors, and personal qualities contributed to firm performance. This was because high motivation in personal success manifested itself not only in terms of monetary value but also in achievement and job satisfaction. Moreover, high motivation of individual entrepreneurs in personal-related factors, such as self-fulfillment, self-esteem, and life satisfaction, improved firm performance. Lastly, entrepreneurs' personal qualities, such as commitment in business and personal lives, were shown to have a positive impact on firm success. Thus, Hypothesis 2 is supported.

Hypothesis 3 [1]: Better conditions in family factor were found to have a statistically insignificant relationship to the performance of FHF's. One possible interpretation for this could have been that better conditions in family factor were not influential in the case of Lao FHF's meaning that they were still faced with the dual roles involved in business and family. This finding was consistent with several previous studies that found that conflicts between domestic roles, such as child care and caretaking, and careers had a negative impact on commitment in business. Another interpretation may have been that many entrepreneurs may have limited their allocation of time and resources when the family factor was concerned. Family factor was not a main barrier to the performance of FHF's. As a result, Hypothesis 3[1] is not supported.

Hypothesis 3[2]: The result confirmed that family factor had no impact on the performance of MHF's. This may have been due to the fact that, for MHF's,

the conflict of the dual roles involved in business and family was not of concern and the males received support from their family members. Also, MHFs may have depended on other factors other than family factor. For example, they were able to rely on other challenging business approaches such as business strategy, business finance, innovation, and marketing to achieve growth, making family factor insignificant to the performance of MHFs. Thus, Hypothesis 3[2] is supported.

Hypothesis 4: The findings showed that there was a positive relationship between the social network factor and the performance of male- and female-headed firms. The social network proved to be a channel to link the firms with external suppliers, customers, and financial institutions, allowing firms to access resources. Important networks were able to provide support systems, mentors, advisors, and access to important resources as well as making social contributions, creating valuable relationships, and building social networks with key customers and community. As a result, the social network factor contributed to the performance of male- and female-headed firms. Therefore, Hypothesis 4 is supported.

Hypothesis 5: Skill factor had a positive relationship with the performance of male- and female-headed firms. The diversified skills of male- and female-headed firms were important to handle the complex business environment to achieve business goals. This finding was consistent with previous literature because human relations, communications, negotiations, knowledge of products, and service skills were crucial to the success of female business owners (Rashid, 1996; Teo, 1996). As a result, Hypothesis 5 is supported.

FINDINGS AND CONCLUSION

The study aimed to compare the performance of male- and female-headed firms in Lao MSMEs and to identify clear differences in determinants of performance between male- and female-headed firms from the perspectives of personal, family, social network, and skill determinant factors. Five hypotheses were developed and were empirically tested in a sample of 200 Lao MSMEs from the service and trade industries. The results supported hypotheses 1, 2, 3[2], 4 and 5, but hypothesis 3[1] was rejected (see section 4.3).

For H1, the findings confirmed that there was no difference in the performance of male and female entrepreneurs when performance was measured by the incorporation of economic and non-economic terms. For H2, the personal factor had a positive impact on the performance of male- and female-headed firms. For H3 [1], better conditions in the family factor did not have a statistically significant impact on the performance of FHF. H3 [2] was supported because the family factor had no impact on the performance of MHF. For H4, the social network factor had a positive relationship with the performance of male- and female-headed firms. Lastly for H5, the skill factor was shown to have a positive relationship with the performance of male- and female-headed firms.

Policy Implications

The study provides useful information for policymakers and implementers to address problems and design appropriate policy measures to have a positive impact on the performance of male- and female-headed firms. Positive policies can address issues

65 faced by male- and female-headed Lao MSMEs. Lessons may be learnt from

this paper by firms that can assist both MSMEs and policymakers to better address factors contributing to their performance.

Implementers such as male- and female-headed MSMEs need to emphasize influential factors including personal, social networks, and skill factors that create superior performance. To achieve better performance, male- and female-headed firms should be aware of the main drivers of their performance, such as high motivation in personal factor indicated in personal success (monetary value, achievement, and job satisfaction), personal-related factors (self-fulfillment, self-esteem, and life satisfaction), and personal qualities of entrepreneurs (commitment in business and personal lives) that contribute to firm performance. In addition, firms should establish and maintain valuable social network relationships with key partners and must improve various skills of entrepreneurs to sustain superior performance.

This study can be the basis for recommendations to policymakers to create policies that suit the needs of male- and female-headed MSMEs. Influential factors such as the social network and skill factors need to be emphasized to improve performance. The government should encourage firms to establish and maintain valuable social network relationships that can link with important business parties. These networks can be established through relevant groups such as business and women's associations. The government should also provide practical and useful training to improve important skills of entrepreneurs to deal with the uncertainty of the business world, an effective way to improve the skills and competence of entrepreneurs to sustain the superior performance.

Research Limitations and Further Research

This research has a number of limitations. It was unable to measure comprehensive performance indicators beyond the subjective measurements and future research requires objective measurements of financial/economic terms such as return on assets (ROA), return on sales (ROS), and sale growth. Elimination of bias in the models may be achieved by the use of any factors considered influential. Increased sample size is also encouraged in further studies.

ACKNOWLEDGEMENTS

The authors express sincere gratitude to several anonymous reviewers for their helpful suggestions and valuable comments to improve this paper. Special thanks go to the survey team that helped to complete the survey and the Lao Consulting Group. Any errors that appear in the present paper are entirely the authors' responsibility.

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Organizational Climate and Ambiguity Tolerance with Organizational Entrepreneurship: Empirical Study

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Abstract

Purpose – The purpose of this paper is to examine the relationship between organizational climate (OC) and ambiguity tolerance (AT) with organizational entrepreneurship (OE) in High Schools of Tehran City (HSTC).

Design/methodology/approach – The papers develops a research model based on current literature and then test this model in HSTC selected from public sector high schools in Iran. Statistics society consists of 120 managers/ teachers in 22 schools in HSTC. The sample size provided based on "Cohan- Morgan- Korjsay" is 92 managers/ teachers which have been determined with descriptive methods. For data analyzing we used Pearson Correlation, T- test, and One- Way ANOVA.

Findings – The results indicate that, regarding to the obtained significant level between OC and OE, AT and OE was smaller than %5 and shows that there is a significant relation between mentioned variables.

Research limitations/implications – This study could benefit from a large sample, from public sector and replication in more schools.

Practical implications – The paper offers practical suggestions to the educational managers and in general on how to manage of schools.

Originality/value – This paper has tried to provide an inclusive understanding about the OC and AT with OE in High schools. Since there was a lack of such research in an Iranian context, this paper can provide theoretical basis for future researches as well as practical implications for educational managers and the educational professionals.

Keyword: Organizational Climate, Ambiguity Tolerance, Organizational Entrepreneurship, High school, Iran

Article Type: Research paper

1. Introduction

The main objectives of this paper are to identify the major variables affecting of the OE within the Iranian schools and to examine the impact of OC, and AT on OE. While there have been several studies in different sectors in related to OE, a few of them are within the high schools, especially in public schools of Iran. Also, although the survival of a range of involvement systems used by professionals from various sectors, little research has been undertaken to examine if these interventions can be applied to the high schools. There are therefore two gaps in OE. First, there is a lack of study in OE, particularly in public schools of Iran, framework. Second, the past studies have

paying attention on OE in private sector. This study had the aim of overcoming these two gaps to achieve the objectives stated at the start of this paper. Thus, the motivation for this paper is to address the identified the core factors by reporting on the impact of OC and AT on OE among educational professionals within the HSTC. These findings have an implication for educational professionals within the high schools of Iran.

The paper is structured as follows: first, a general literature review on the OC, AT, and OE in various sectors is presented, with the main focus on the key concepts OC, AT, and OE; second, a brief overview of the advocated theoretical conceptual framework which summaries the relationship among the independent variables (OC, AT) and dependent variables (OE) is presented. This is followed by an explanation of the research methodology adopted. Following on from the research methods, the statistical methods employed and the interpretation of the findings are next. The paper concludes with a discussion and implications for future research.

2. Literature Review

2.1 Organizational Climate

According to Patterson et al, (2004) it has long been clear that behaviour is a function both of a person's characteristics and the nature of his or her environment. Important environmental features in work settings have sometimes been brought together under the general heading of "climate", usually measured through individuals' perceptions of their organization's policies and practices (Schneider, 1990; Ashkenasy et al, 2000). Associated research has investigated perceptions of "culture", sometimes taking measures of perceived culture through questionnaires similar to those applied in

climate studies (Reichers and Schneider, 1990; Payne, 2000). As described by Denison (1996), “climate” mainly concerns “those aspects of the social environment that are consciously perceived by organizational members”. Measures of climate seek to represent employees’ experiences of important organizational values and processes, and thus have often been thought of as possible predictors of organizational performance. Four kinds of performance may be suggested: economic (productivity, profitability, etc.), technological (development of new products, etc.), commercial (market share, a specific niche, etc.), and social (effects on customers, suppliers and the public at large) (Bartram *et al*, 2002). Most research in the area of this paper has examined economic aspects of organizational performance, and that approach will be taken here.

The OC is an important consideration for managers in their organizational design process. Kumar & Chander (1998) found that some of the reasons are as follows: firstly, OC is a set of perceptions of employees about the characteristics of their organizations that influences attitudes. Secondly, OC is found to influence certain work- related outcomes, like employee performance, productivity, job satisfaction, involvement, turnover, absenteeism, motivation, organizational commitment, organizational effectiveness, and OE. Thirdly, it influences a whole range of relationships in the organization. Fourthly, OC has been studied in several contexts and found that it has a greater role to play in improving organizational effectiveness. These contexts include public and private organizations, educational institutions, hospitals, insurance company. Lastly, there is a controversy around the relationship between OC and job satisfaction.

Burton et al, (2004) identifies four OC profiles by applying Koys and DeCotiis's three rules for dimensions of OC to Zummuto and Krakower's (1991) model of competing values, initially developed by Quinn and Rohrback (1983) which is used to examine criteria for organizational effectiveness, based on a framework of flexibility versus control and internal versus external view. He calls them group climate (scores high and trust and moral and is internally oriented), developmental climate (scores high on moral and trust as well, but is externally oriented), rational goal climate (scores low on trust and moral and is externally oriented), and internal process climate (scores low on trust and moral and is mechanical oriented). The four climate types are based on their degree on the seven variables trust, moral, equity of rewards, resistance to change, leadership, creditability and duty. In other words, the employees' perceptions about the extent to which every one of the seven variables is present or absent within an organization forms the building blocks of OC (Schott, 2008)

Wilderom et al, (2000) located and summarized 10 relevant studies. They reported that, although most of those had found some dimensions of OC to be associated with performance, different climate aspects had emerged as important in different studies. In addition, causal interpretation of observed relationships has been made difficult by a frequent reliance on cross-sectional research designs, obtaining measures of performance for the period immediately before climate is assessed. It is instead desirable to examine climate at one point in time as a possible predictor of performance in a subsequent period. Two studies that obtained objective organizational performance data later than the assessment of climate were by Denison (1990) and by Gordon & DiTomaso (1992). In the first case, a climate that encouraged employee involvement in company decision-making (through individual inputs and

between-role collaboration) was found (across 34 firms in different industries) to predict company financial success in subsequent years; however, quantitative support for the importance of three other climate dimensions was not obtained.

The study by Gordon & DiTomaso (1992) (across 11 insurance companies) examined aspects of adaptability (a combination of scales to tap action orientation and risk-taking), finding that this climate indicator was associated with subsequent financial growth. However, three other aspects of climate were unrelated to financial outcomes. Research into organizations' climate and performance has thus yielded varying results. This diffuse pattern is likely to arise in part from different studies' use of different indicators of performance, from variations in the temporal sequence of measurement, and from the fact that different kinds of organizations were examined by different researchers. In addition, of particular importance are variations in the intervening processes which may translate an organization's climate into performance. Kopelman, Brief, & Guzzo (1990) have presented a model to make more explicit those intervening processes. OC is viewed as influencing organizational productivity (the form of performance considered in the model) through "cognitive and affective states" and "salient organizational behaviours". The former states are primarily employees' work motivation and their feelings of job satisfaction. Those are considered to influence productivity through three kinds of behaviour: attachment behaviours (attending and staying in the organization), role-prescribed behaviours (tasks in one's organizational role), and citizenship behaviours (helpful contributions that are not mandatory). This model has been developed by Sparrow (2001), who also includes features of person-organization fit and of employees' psychological contract. The psychological contract is viewed as incorporating "mental, emotional and

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attitudinal states” and “salient organizational behaviours”, the two principal intervening processes considered by Kopelman and colleagues (1990). The psychological states are seen as linking perceived climate and potential person-organization fit with salient employee behaviours and then with performance at the organizational level. These states include perceived justice and organizational support, work motivation, and feelings of trust, commitment, job involvement and job satisfaction.

2.2 Ambiguity Tolerance

According to Kajs & McCollum (2009) research on ambiguity and its psychological elements has occurred since the 1950s (Sweeney & Owens, 2002). In general, the term ambiguity is referenced as vagueness of words and uncertainty of conditions or situations where multiple interpretations or views, although at times contradictory, can be present (Visser, 2003). In everyday life, ambiguity can occur when one routinely interacts with numerous meanings, uncertainty, incompleteness, vagueness, contradictions, probability; as well as lack of clarity, structure, information, and consistency (Norton, 1975). Budner (1962) says that situational ambiguity results from three major sources: (a) novelty, i.e., new situation where no familiar signs exist; (b) complexity, i.e., large number of cues need to be taken into consideration; and (c) insolubility, i.e., situation that is contradictory in nature where different cues purport differing arrangements.

AT has been described as “the way people perceive, interpret, and react to ambiguous situations”. The way a person perceives, construes, and responds to uncertain situations determines one’s level of tolerance for ambiguity (Stoycheva, 2002). The

AT construct is rather complex because of the multiplicity of variables, including various types of situations, perceptions, and other factors, e.g., predictability (Benjamin et al., 1996).

One who is characterized as AT tends to view and construe ambiguous situations as a cause of psychological uneasiness or anxiety, or possibly a threat; thus, the ambiguity is viewed as confusing and something to avoid (Stoycheva, 2003). For instance, if a person views a situation as threatening instead of promising, then intolerance for ambiguity probably exists (Budner, 1962). It was found that people who demonstrate intolerance for ambiguity prefer the realm of stereotypes and concrete notions, instead of the sphere of probability and uncertainty (Geller et al., 1993). While much of the literature equates intolerance of ambiguity (IA) and intolerance of uncertainty (IU), researchers have pointed out that a distinction can be made between the two concepts; that being, IA refers to the present circumstances as a cause of threat and IU relates to the future prospect of a negative result (Grenier, Barrette, & Ladouceur, 2005).

One who is characterized as AT tends to have the capacity to recognize and analyze an ambiguous condition in a practical manner without disallowing or distorting elements of its complexity (Stoyvecha, 2003). This type of disposition enables a person to be more adaptive, and endure the anxiety and discomfort of an uncertain situation, allowing more time to generate alternative responses to the situation (Visser, 2003). An individual with a higher AT has the propensity to seek feedback less often than one with a lower tolerance (Bennett et al., 1990). The AT disposition tends to display a risk taking approach as well as resiliency in adversity (DeRoma et al., 2003; Patterson, 2001), and views uncertain situations as desirable (Budner, 1962). Beitel et

al. (2004) found a relationship between AT and psychological mindedness, which is associated with a cognitive profile that includes tendencies for realistic thinking, flexibility, and personal agency.

Research on AT and IA can be found in organizational, social behavioral, and leadership studies (e.g., Bennett et al., 1990; Budner, 1962; Clampitt & Williams, 2000), as well as in the professions of business (e.g., Bakalis & Joiner, 2004; Lamberton et al., 2005; Lane & Klenke, 2004), and medicine (e.g., Geller et al., 1993; Schor et al., 2000; Sherrill, 2005). Many research studies address AT in the context of business (e.g., Bakalis & Joiner, 2004; Gupta & Govindarajan, 1984; Hallinger & Snidvongs, 2008). Major workplace consequences connected to AT have been found in the areas of (a) employee interests/ability versus job responsibilities, (b) worker turnover, (c) company commitment to employees, and OE (Lamberton et al., 2005). Bennett et al. (1990) found that one's level of AT influences a person's decision to ask for feedback. In general, those characterized as IA seek more feedback more often than those described as AT. However, exceptions to this general rule were found. Those depicted as IA tended to lack motivation in asking for feedback on job-specific matters, while those with AT orientations were likely to request feedback on job advancement issues (Bennett et al., 1990).

In a study by Lamberton et al. (2005), outcomes suggested that accountants who have high interests in information technology (IT) are more at ease with ambiguous problem-solving circumstances, especially those situations requiring a high degree of creativity. Elias (1999) found that nontraditional accounting students had a higher AT than traditional ones, suggesting that nontraditional students may have more of the

attributes (e.g., less apprehensive or fearful in oral and written communications) in handling uncertain situations (e.g., audits).

Huber (2003) points out that AT's attributes of flexibility and creativity are becoming increasingly valuable as businesses address the unpredictability and change process of globalization. For organizations to survive in a complex world with varying demands from different constituents, leaders must be able to embrace uncertainty to be effective, demonstrating characteristics of entrepreneurship, adaptability, and innovation (Hallinger & Snidvongs, 2008; Lane & Klenke, 2004). AT is a key disposition in the development of a successful entrepreneur, since innovation and creativity necessitate a certain level of tolerance for ambiguity (Lumpkin 2004). To address the diversity of workforce in a global business environment, two personality attributes are critical: tolerance for ambiguity and openness; this latter characteristic is associated with risk taking, open-mindedness, collaboration, as well as receptivity to work in cross-cultural environments (Bakalis & Joiner, 2004). Thus, a person's tolerance for ambiguity should be viewed as a valued trait in the hiring process.

Limited empirical research exists regarding the impact of AT and IA on school leadership behavior and consequential managerial approaches. Sample studies on school leadership and AT include a correlation between AT /IA and administrative styles (e.g., autocratic, democratic) of high school principals (Yaffa, 2003). Yaffa (2003) found that principals who practice benevolent and/or autocratic managerial style (task orientation) tend to have low AT, while school leaders who engage in a developer approach (i.e., people orientation) in leadership tend to have high AT.

Anfara et al. (2000) found high AT to be a key characteristic of effective middle school principals.

Patterson (2001) notes that superintendents who can effectively handle unfamiliar situations and unpredictable setbacks can strengthen their resiliency as a school leader. School principals who practice a combination of conceptual and analytical decision-making approaches tend to develop multiple alternatives in addressing issues. This use of cognitive complexity demonstrates a propensity to possess a high degree of AT; a major indicator for successfully maintaining and sustaining schools (Williams, 2006).

2.3 Organizational Entrepreneurship

The term “entrepreneurship” can be traced back to the twelfth century, rooted in the French verb “entreprendre” which means to do something differently (Long, 1983), and the German word “unternehmen,” which means to “undertake” (Cunningham & Lischeron, 1991). Its noun form “entrepreneur” was documented in the fourteenth century (Hoselitz, 1960). The modern term “entrepreneur” was used during the eighteenth century in the writings of Richard Cantillion (1755/1931). The entrepreneurial conceptualization reflected in the literature has emerged from a diversity of scholarly disciplines and perspectives, beginning with origins in economics.

In the mid-1700s, Cantillion (1755/1931), an Irish economist of French descent, defined the term entrepreneur as a speculator searching for profit by buying at a certain price and selling at an uncertain price. In the early 1800s, Say (1803/1971) expanded the concept of entrepreneurship, to include managerial skills and other qualities such

as judgment and perseverance to create value in an economy by moving resources out of areas of low productivity and into areas of higher productivity and greater yield.

In the mid-1800s economist Mill (1848/1965) suggested that the distinguishing feature of an entrepreneur was that they were more than a capitalist in that they assumed both the risk and the day-to-day operations or management of a business. British economist Marshall (1930/1961) defined the entrepreneurial function as providing innovations for efficiency and consequently progress. Knight (1921), the first American contributor in entrepreneurship theory, discussed foresight and distinguished between risk, which is insurable, and uncertainty, which is not, and noted that the entrepreneur is one who bears all uncertainty and makes decisions for which he takes responsibility. Schumpeter (1934) saw the entrepreneur as the major agent of economic development, an innovator trying new combinations of resources to generate new products, new production methods, entry into new markets, new sources of supplies, and new organizations of any industry. Kirzner (1973, 1997), an Austrian economist, emphasized alertness and suggested that the role of the entrepreneur was an arbitrageur who created incremental-continuous innovations by identifying and exploiting potential opportunities. Casson (1982) attempted to develop a theory linking entrepreneurs with economic development, emphasizing resource coordination and decision making.

According to Fox (2005) from the management perspective, entrepreneurship is an organizational process that encourages and practices innovation, risk taking, and proactiveness toward customers, competition, and opportunities (Miller & Friesen, 1982). The process enables the organization to create value by identifying

market opportunities and creating unique combinations of resources to pursue those opportunities (Jacobson, 1992). An entrepreneurial organization is proactive in obtaining intelligence on customers and competitors; is innovative by reconfiguring its resources to formulate a strategic response; and implements the response, which entails some degree of risk and uncertainty (Barrett, Balloun, & Weinstein, 2003). The management perspective of entrepreneurship emphasizes organizational factors as facilitating the success or failure of ventures (Brophy & Shulman, 1992; Sandberg, 1992). Miller (1983) suggested that the degree of entrepreneurial orientation could be seen as the extent to which organizations take risks, innovate, and act proactively. Stevenson (1983) added that entrepreneurial management, defined as a set of opportunity-based management practices, could help organizations remain vital and contribute to organizational and societal level value creation.

3. Theoretical Framework and Development of Hypotheses

This study conceptualizes OC and AT relationships with OE. Figure No. 1 presents the research model for the constructs of concern in this study.

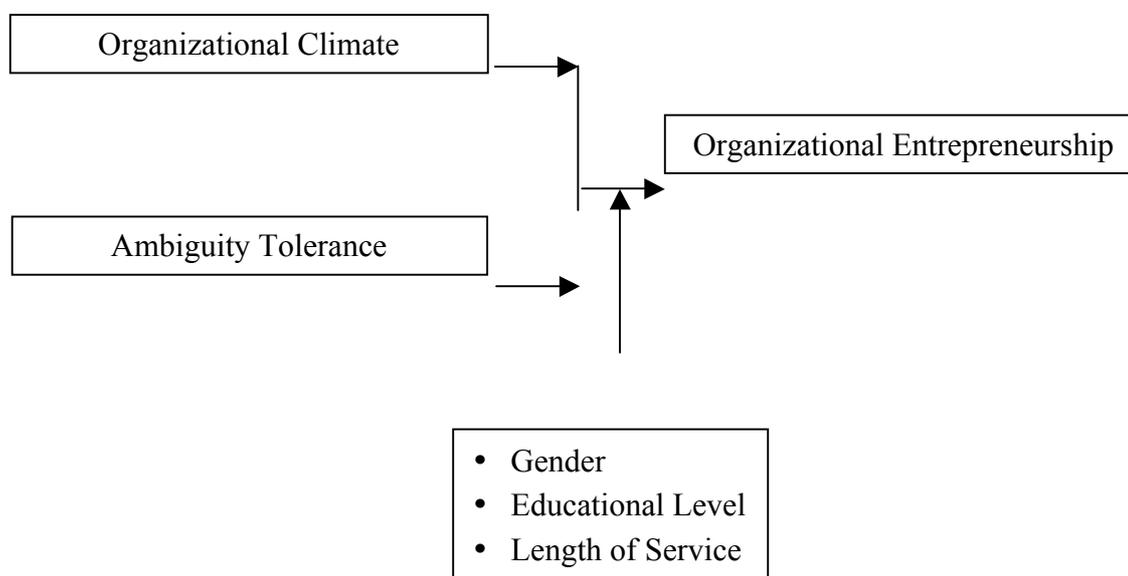


Figure No. 1: Proposed research model

Therefore, the hypothesis is that:

1. There is a positive relationship between OC and OE.
2. There is a positive relationship between AT and OE.
3. There is a relationship between gender and OC.
4. There is a relationship between gender and AT.
5. There is a relationship between gender and OE.
6. There is a relationship between educational level and OC.
7. There is a relationship between educational level and AT.
8. There is a relationship between educational level and OE.
9. The mean of OC in two groups of Length of Service is equal.

10. The mean of AT in two groups of Length of Service is equal.

11. The mean of OE in two groups of Length of Service is equal..

4. Research Methodology

4.1 Purpose

This research is designed to investigate the relationship between OC and AT with OE in HSTC. No studies currently exist on the relationship between OC and AT with OE in HSTC of Iran. The results of this study should help Iranian managers determine whether tight HR should be expended on OC and strategic decisions programs or if the finding could be better utilized elsewhere within the HSTC.

4.2 Sample and Data Collection

All of the HSTC involved in the study are located in Tehran which is one of large province in Iran and plays a vital role in the social/economic development of the country. A list of all HSTC was compiled from the following sources: personnel affairs and welfare and domestic payments department, deputy of personnel affair, and department of organization and methods.

The present study employs a questionnaire survey approach to collect data for testing the validity of the model and research hypotheses. Questionnaire included closed questions and was organized into four sections. Section one consisted of 3 questions concerning responder demographics. Section two focused on information about usage of OC by professionals in support of OE. Section three focused on information about usage of AT in support of OE. Section four dealt with information about OE in HSTC. The sample size provided based on "Cohan- Morgan- Korjsay" is 92 managers/94

teachers which have been determined with descriptive methods. For data analyzing we used Pearson Correlation, T- test, and One- Way ANOVA (Analysis of Variance).

4.3 The Procedure and Measure

The research instrument, a questionnaire, contained two parts. The first part seeks demographic information. The second part was measured on a five point Likert- type scale, measuring three concepts: OC, AT, and OE.

4.4 Validity and Reliability

This research is designed to investigate the relationship between OC and AT with OE in HSTC. A quantitative research methodology was applied in the study, specifically to assist in finding answers to the research hypothesis. After an examination of the literature, the self- researcher questionnaire for OC, AT, and OE was chosen for use in this research. The Cronbach's alpha for this variables are implied in the Table No. 1.

Table No. 1: Measures for Variables

Study Variables	No. of Items	Alpha for Sample	Source of Scale
OC	12	0.94	Burton et al
AT	12	0.85	Yaffa
OE	53	0.89	Brown et al.

5. Measures

5.1 Organizational Climate

OC is measured by a questionnaire by Burton et al (2004) which is based on the competing values framework developed by Quinn and Rohrback (1983). The questionnaire contains seven items, each representing one of the seven variables (trust,

morale, rewards equitability, leader credibility, conflict, duty, resistance to change) which describe the OC profiles. Teachers/ employees were asked to indicate on five-point scales, ranging from 1 = “very less” to 5 = “very high”, the degree of importance they attached to each of seven OC dimensions. These dimensions were level of OC, and school satisfaction with OE. The respondents were further asked to indicate the extent of their importance with their OC along each of the seven OC dimensions.

5.2 Ambiguity Tolerance

AT is measured by a questionnaire by Yaffa (2003) which is based on the competing values framework developed by Norton (1975). The questionnaire contains two items, each representing one of the two variables (task orientation, and people orientation) which describe the AT profiles. Teachers/ employees were asked to indicate on five-point scales, ranging from 1 = “very less” to 5 = “very high”, the degree of importance they attached to each of two AT dimensions. These dimensions were level of AT, and school satisfaction with OE. The respondents were further asked to indicate the extent of their importance with their AT along each of the two AT dimensions.

5.3 Organizational Entrepreneurship

The third part of the questionnaire was an organizational-level scale for OE which included both the extensively used measure of entrepreneurial orientation, as well as a scale for entrepreneurial management, which was based on a modified instrument developed by Brown et al. (2001) that operationalized Stevenson’s (1983) conceptualization of entrepreneurship. The entrepreneurial orientation scale was designed to explore distinct dimensions of innovativeness, proactiveness, and risk taking; and the entrepreneurial management scale was designed to explore distinct

dimensions of strategic orientation, resource orientation, management structure, reward philosophy, and entrepreneurial culture which describe the OE profiles. Teachers/ employees were asked to indicate on five-point scales, ranging from 1 = “very less” to 5 = “very high”, the degree of importance they attached to each of OE dimensions. The respondents were further asked to indicate the extent of their importance with their OE along each of the OE dimensions.

6. Analysis and Results

6.1 Descriptive statistics

Table I shows the demographical information of respondents. This table reveals information regarding gender, educational level, and length of service. Table shows that majority of the respondents (58%) are male and only (42%) are female respondents. Also table shows that majority of the respondents (89%) were holding bachelor degree, master degree, and ph.D degree, and only very few of them were having high school and associate degree of education. When respondents were inquired about their length of service (76%) of the respondents were having length of service less than 10 or equal to 10 years, managers/ teachers having length of service between 11-20 were only (16%) of the respondents and those managers/ teachers who were having length of service of more than 20 years were only 8%.

Table I. Descriptive statistics of Respondents

		Frequency(F)	Percentage
Gender	Male	54	58%
	Female	38	42%
Educational Level	Second Group	82	89%
	First Group	10	11%
Length of Service	1-10	70	76%
	11-20	15	16%
	Above 20	7	8%

6.2 Test of Hypothesizes

6.2.1 Pearson Correlation Analysis

Using a series of Pearson correlation analyses, support was produced for each of the three research hypotheses. For more details, see Table II.

Table II. Pearson Correlation Analysis

		1	2	3
1.	OC	1		
2.	AT	-	1	
3.	OE	.327**	.539**	1

** Correlation is significant at the 0.05 level (2-tailed).

6.2.2 T- test Analysis

6.2.2.1 Gender

Table III shows that the test statistic t- value is 2.140, and significance is .035 that is less than 0.05, so, the mean of OC in two groups male and female is difference, on the other hand there is relationship between OC and gender. But in concern to AT the test statistic t- value is 1.618, and significance is .107 that more than 0.05, so null hypotheses is reject. On the other hand, there is no relationship between AT and

gender. Also, we accept the null hypotheses is related to OE, because the test statistic t- value is -4.257, and significance is .000 that is less than 0.05, so there is relationship between gender and OE.

Table III. T- test Analysis Results/ Gender

	Gender	Mean	S.D.	N	d. f.	Sig.	t- value
OC	M	22.50	3.069	54	92	.035	2.140
	F	22.31	5.593	38			
AT	M	2.63	.449	54	92	.107	1.618
	F	2.42	.284	38			
OE	M	3.25	.481	54	92	.000	-4.257
	F	2.87	.539	38			

P<0.05(2-tailed test)

6.2.2.2 Educational Level

Table IV shows that the test statistic t- value is 3.562, and significance is .000 that is less than 0.05, so, the mean of OC in two educational level is difference, on the other hand there is relationship between OC and educational level. But in concern to AT the test statistic t- value is .511, and significance is .610 that more than 0.05, so null hypotheses is reject. On the other hand, there is no relationship between AT and educational level. Also, we reject the null hypotheses is related to OE, because the test statistic t- value is .085, and significance is .933 that is more than 0.05, so there is no relationship between educational level and OE.

Table IV. T- test Analysis Results/ Educational Level

	Educational Level	Mean	S.D.	N	d.f	Sig.	t- value
OC	Second Group	6.73	1.154	82	92	.000	3.562
	First Group	7.31	1.071	10			
AT	Second Group	15.15	4.485	82	92	.610	.511
	First Group	15.49	4.761	10			
OE	Second Group	31.50	7.694	82	92	.933	.085
	First Group	31.60	7.429	10			

P<0.05(2-tailed test)

6.2.3 One- Way ANOVA Analysis

The ANOVA results (Table V) indicate that the mean of AT in two groups of length of service is non equal [F (2, 90) = 10.474, P< 0.05], and also, OE [F (2, 90) = 12.684, P< 0.05], but mean of OC in two groups of length of service is equal, [F (2, 90) = .142, P > 0.05].

Table V. ANOVA Analysis Results

	Sum of Squares	d.f	Mean Square	F	Sig.
<i>OC</i>					
Between Groups	.378	2	.189	.142	.868
Within Groups	252.616	90	1.337		
Total	252.995	92			
<i>AT</i>					
Between Groups	403.796	2	201.798	10.474	.000
Within Groups	3643.074	90	19.276		
Total	4046.780	92			
<i>OE</i>					
Between Groups	329.1293	2	165.645	12.684	.000
Within Groups	96.13	90	50.846		
Total	10903.578	92			

7. Conclusions

Finding show that there is significant relationship between OC, AT, and OE in HSTC. The analysis of research results showed the overall consistency of findings with the model. This study makes two key contributions to the literature. First, this study, both theoretically and empirically, reveals how high school can usage the professionals in OE. Specifically, the findings of the study show the key role of OC and AT in the OE. The study's theoretical arguments and its empirical findings are both interesting and useful to scholars in this research area. Second, this paper shows theoretically and empirically how high school can generate OE value from organizational culture, a topic that has received little attention to date. The findings on this topic are thus also valuable for academics who study the OE value.

8. *Limitations*

Some limitations of the research need to be recognized. The sample is relatively small (in 22 schools and 92 managers/ teachers), comparable to others studies that have looked at the teachers/ employees level within the schools within the Iranian context, as such it is representative and the findings presented are general to a wider population of schools in the HSTC.

9. *Future Research*

This study confirms the applicability of educational professionals related issues in developing countries such as Iran. Owing to this, there is a possibility of bias playing role in the outcome of the study. Therefore, this study can be emphasized in other high schools particularly the private schools within the Iranian context. One major implication emerging from this study is the challenge of finding ways of valuing contributions of the education.

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Why Quanxi and Customer Loyalty work: Lessons from Neuroscience

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While for many years, there has been definitive research in business on Quanxi and Customer Loyalty, there has not been much discussing this based on the underlying reasons from Neuroscience. This article looks at the connection between Quanxi and Customer Loyalty and various aspects of Neuroscience, in particular the Somatic Marker Hypothesis, which notes, that the unconscious bias from human experiences serves to connect people emotionally and steer their behavior in an advantageous direction. The Psychological and Physiological causes, which explain this behavior, may offer compelling reasons to indicate that organizations providing products and services, should more aggressively adopt Customer Loyalty and Relationship Building programs and strategies involving their clients. There is even strong evidence that U.S. corporations lose half of their customers in five years, so with new innovations, opportunities and choices for buyers, it is more important than ever to understand how to retain their loyalty.

Introduction

Perceptions and emotions influence an individual's mental state and mood. The study of these mind-body interactions has been greatly enhanced by three techniques which quantify arousing the autonomic nervous system following stimulation. They are the electrodermal skin conductance response (SCR), the electrogastrogram (EGG) and heart rate and blood pressure (HR and BP). The electrodermal skin conductance response (SCR) is a remarkably powerful and informative psychophysiological index. Because SCRs are relatively easy to measure, and provide reliable indices of a wide variety of psychological states and processes, SCRs have been arguably the most popular aspect of ANS activity used to study human cognition and emotion (Dawson, 2000).

With client dealings, the experience that evokes the advantageous direction for clients, are the sales calls they have with providers and the business deals they transact with them. Direct client contact and the sale are considered to be important and the beginning of a loyal relationship (Comer, 1999). The process takes every opportunity to build customer loyalty with each contact. To build this process it is necessary to consult customers for preferences, build familiarity, knowledge and conduct business to build a relationship (Raymond, 1994).

The Somatic Marker Hypothesis.

There is a strong link between Customer Loyalty and the unconscious bias from human experience that impacts people emotionally that influences their behavior in a favorable way (Carter, 2011). The theory says that feelings and emotions give rise to

115 “somatic markers,” which serve as guideposts that help steer behavior in an

advantageous direction. Deprived of these somatic markers, VM patients lose the ability to experience appropriate emotional responses to various stimuli and events. The absence of these emotional responses leads to defective planning and decision-making; this, in turn, leads to the psychopathic-like behavior that is characteristic of VM patients (Damasio, 1996).

Neuroscience studies indicate that mind-body interactions are reciprocal and psychological factors such as imagining an event can influence an individual's mental and emotional state and even contribute to physiological processes, such as sweating, cardiovascular and gastrointestinal arousal (Bechara, 1997). Mind-body interactions are being utilized to reduce psychological and physiological distress and improve human health by monitoring the autonomic nervous system through SCR's (Mayer, 2001). EGG's and cardiovascular arousal, it is possible to study the mechanisms underlying physiological changes in response to stimuli (Vianna, 2006). The Somatic Marker Hypothesis strongly suggests why Customer Loyalty works. Customer Loyalty is necessary because dissatisfied customers will never buy again from that original provider and they can communicate that displeasure to other active and prospective customers (Cathcart, 1990). Companies that work toward these policies and utilize these types of attitudes have higher customer loyalty and higher profit margins. These developments help explain the psychological and physiological basis for human emotional relationships between business organizations and their customers.

Making advantageous decisions in everyday situations requires conscious reasoning driven by unconscious biases. By using SCRs, healthy individuals generate anticipatory SCRs while considering making a decision that later turns out to be

risky. These processes are mediated by the ventromedial (VM) prefrontal sector of the brain (Carter, 2011).

Quanxi and Customer Loyalty

In China, the concept of “quanxi” means developing a network of good connections and developing friendships and trust. It is important to get to know customers and let them get to know the sales force or those responsible for customer development. This takes time and it can mean attending functions, joining organizations, pursuing memberships and doing the things that demonstrate interest, involvement, reliability and trust. These are things that must occur first before business activity will take place. It is also important for firms to have a strategy and a long term plan and ensure that the product or service meets standards or customer expectations.

The definition of Customer Loyalty is “repeat purchasing frequency” or relative volume of same brand purchasing (Oliver, 1999). Oliver, also characterized loyal customers as those who had a “deeply held commitment to buy or re-buy or repatronize a preferred product or service consistently in the future, causing repetitive same brand or same brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior. The best customers are loyal ones and they are outstanding because they cost less to serve, generate greater profits and often act as word of mouth marketers for referral business (Reicheld, 1996).

Firms have to change the way that they look at customers and the retention strategies that they use to keep them (Jackson, Cunningham, & Cunningham, 1988). Maintaining profitable customers is not the exclusive reason that customer retention programs are

117 so critical (Rackham, Honey, Colbert, Fields, Hinson, Morgran, Morris,

Sugden, & Tribe, 1971). They also allow businesses to collect a great deal of information about the customers that they have (Rackham, Honey, Colbert, Fields, Hinson, Morgran, Morris, Sugden, & Tribe, 1971). From this data, companies can better market, target, communicate with, and understand the customers that they have and they can help to customize some of the future interactions that they have with these customers in such a way that the customer will feel more comfortable (Rackham, Honey, Colbert, Fields, Hinson, Morgran, Morris, Sugden, & Tribe, 1971). Retention programs are often relatively inexpensive and they make customers feel special and important (Rackham, Honey, Colbert, Fields, Hinson, Morgran, Morris, Sugden, & Tribe, 1971). There is also a strong link between customer

Customers who repurchase due to loyalty have made a conscious decision, where conceptualized inertia is a single dimension construct, lacking genuine loyalty without any brand commitment (White & Yanamandram, 2004). There is a growing emphasis on post purchase research to determine the level of customer satisfaction, however, (Jones and Sasser 1995) and concluded that satisfaction was not necessarily associated with customer loyalty. In addition, Reichheld (1996) citing data from Bain & Company, concluded that even where customer satisfaction was high, the level of loyalty could be relatively low. In the automobile industry, while only 85% to 95% of customers report that they are satisfied, only 30%-40% return to the previous make or model.

Interpersonal communication between business providers and customers has been widely discussed as an important part of successful sales interactions. More specifically, an important aspect of the communication process is the ability to

listen effectively and knowledgeable, prepared salespeople develop more meaningful relationships by listening to customers, than salespeople who do not (Shepherd, 1993). Sales people who reveal particularly strong empathy in their listening and combine it with the active techniques of listening, helps the retention of the customer after the initial sale. Empathetic listening by the salesperson demonstrates concern about the customer (Comer, 1999).

Buyers are likely to have developed a good deal of trust in their providers, given satisfactory experience with the product and confirmation of promises. Customers trust in their providers is associated with their perceptions of the quality of their listening. For example, salespeople use their empathetic understanding of their customers position to seek resolutions and because of their ability to convince customers of their genuine understanding of and concern for their positions, they are in better positions to negotiate solutions (Comer, 1999). Effective loyalty and retention involves continuing contact with customers, listening to them empathetically and maintaining a service relationship, until customer needs have been met and customer satisfaction has been achieved (Comer, 1999).

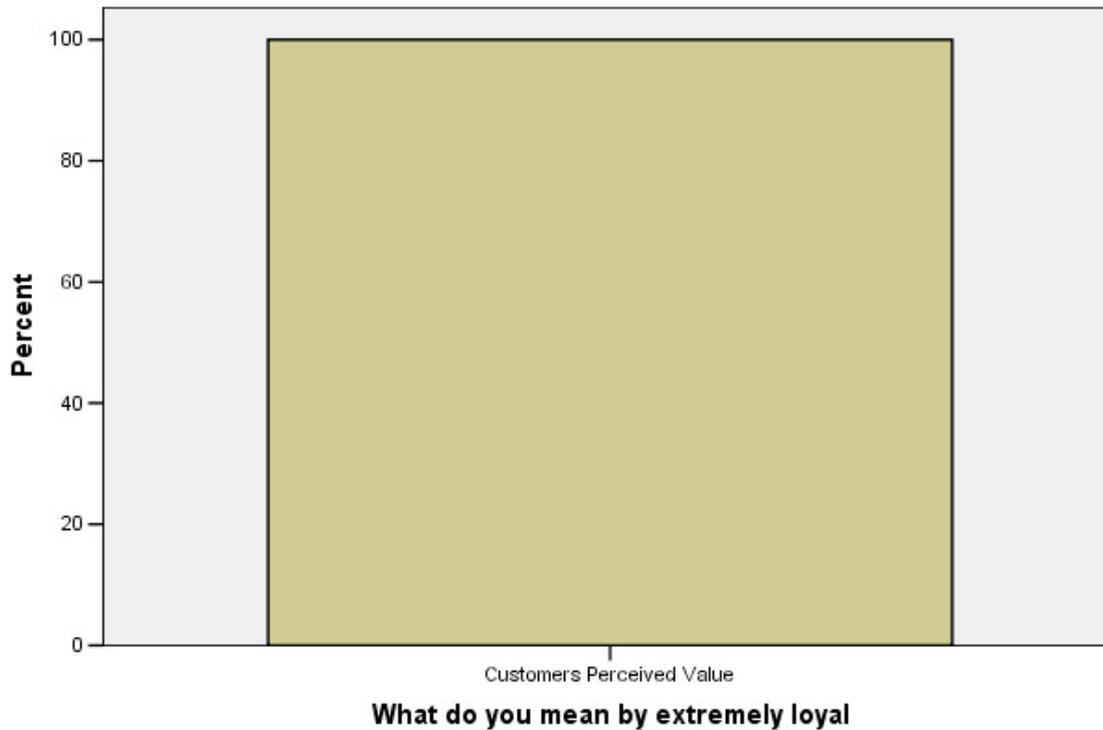
New Research on Customer Loyalty and Retention

Firms are defining customer retention and agreeing that it entails maintaining business and sales from customers, continued sales activity or keeping customers (Carter, 2008). The research shows that 44% of firms are measuring retention through the use of technology and 56% are measuring through other ways, such as surveys, or sales revenue, but these firms are not measuring how to retain customers, which warrants further study (Carter, 2008).

While 97% of firms have said that customer loyalty was very important, only 27% measure customer loyalty, which accordingly should be better tracked by firms (Carter, 2008). A survey regarding customer loyalty was used and sent to 205 companies with 92 responses. The survey consisted of questions which were designed to inquire about customer retention, customer loyalty, customer intimacy and satisfaction programs. The questions, while designed qualitatively to examine relationships not easily explained quantitatively, had the responses assigned a code so that the answers could be used quantitatively to avoid being overwhelmed in data from qualitative responses.

In Question 1, “What percentage of your annual sales is from existing customers?” was a continuous measurement where the mean was 73%. For Question 2 “What is the average number of years your company retains customers?” more than 50% keep their customers for six years or more. For Question 3 “How important is customer loyalty to your company?” the code used was “0” for not important and “1” for very important which was the response of 98%. On Question 4. “What do you mean by extremely loyal?” a code of “0” meant not defined and “1” that customers perceive value. Here, 95% of respondents said that there was perceived value in extreme loyalty and 5% did not answer, suggesting ambiguity in this question.

What do you mean by extremely loyal



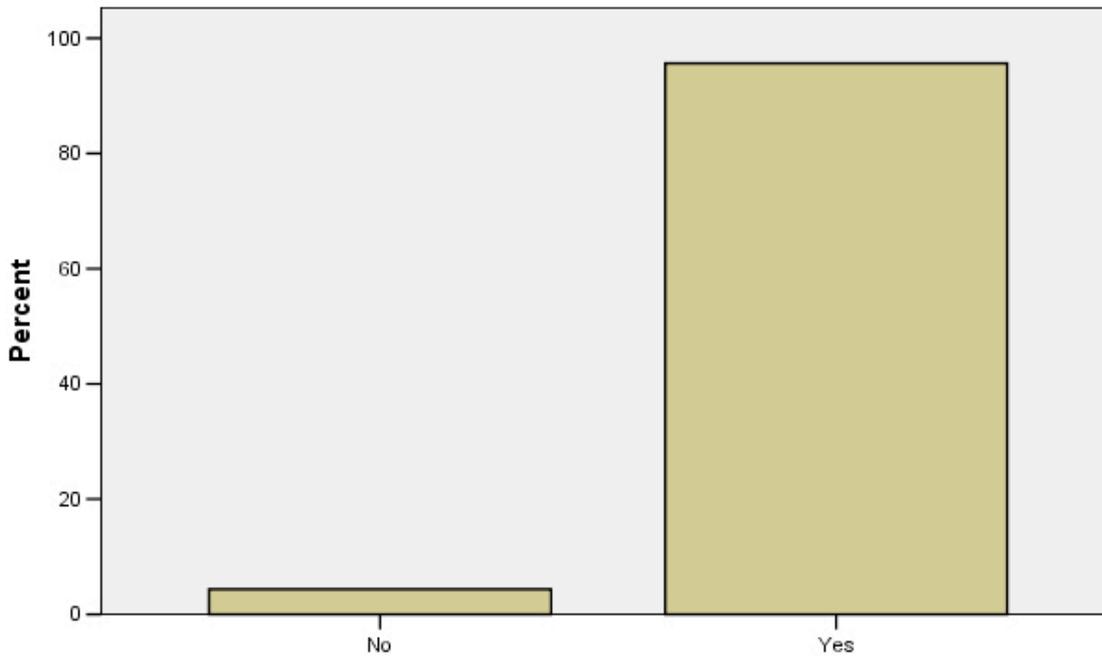
With Question 5. “Do you consider extremely loyal the same as customer intimacy?” a “0” code was used for no and “1” for yes and 62% said yes with 38% not answering, again suggesting ambiguity in the question.

Do you consider extremely loyal the same as customer intimacy?



Question 6 asked “Have any of your top 5 customers purchased from your competition during the last 3 years when you expected to receive the order?” using a “0” code for no and “1” for yes 96% of respondents said yes and 4% said no.

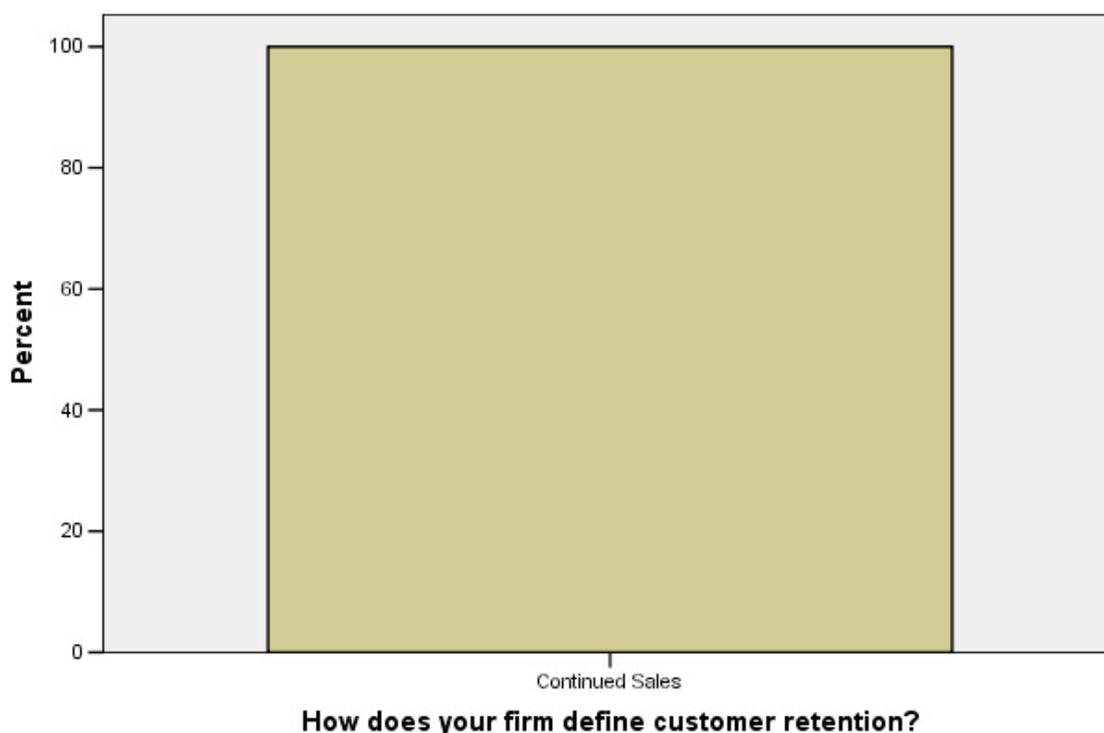
Have any of your top 5 customers purchased from your competitors during the last 3 years when you expected to receive the order?



Have any of your top 5 customers purchased from your competitors during the last 3 years when you expected to receive the order?

In Question 7 asking "How does your firm define customer retention, all firms had some characterization ranging which typically was maintaining business and sales from customers, continued sales activity and keeping customers.

How does your firm define customer retention?



Two additional Neuroscience concepts that can be aligned with Customer Loyalty causation are Electrogastragram (EGG) and Cardiovascular Arousal (HR and BP).

Electrogastragram (EGG)

One useful means for studying mind-body interactions is the brain-gut axis. The brain-gut connection is the likely culprit as both organs are intimately linked via the vagus nerve. The process begins with an external stimulus (i.e. a traumatic life event) causing anxiety which activates hypothalamic outputs to the pituitary and pontomedullary nuclei, both structures mediate the neuroendocrine and autonomic outputs to the

body and to the gut via the vagus nerve. The study of this mind-body interaction has been greatly enhanced with the introduction of the electrogastrogram in recent years (Vianna, 2002).

Cardiovascular Arousal (HR AND BP)

People vary in their ability to handle emotional events and everyone has a different emotional threshold which largely depends on genetic environmental factors. Imagery induced emotion is a potent method of inducing a particular state of mind associated with a specific physiological state. It has been used in emotion studies to induce a target emotion by asking participants to “imagine actively participating in a particular emotion-laden scene” (Vrana, 2006). Using this paradigm, David Rollock used this paradigm and recorded participant’s autonomic responses during imagined emotional situations (Anderson, 2008). They showed that just imagining emotionally charged events alters autonomic responses (Nidich, 2009).

CONCLUSION

The Neuroscience literature and research suggests that approaching people with a positive experience results, psychologically and physiologically, in positive behavior (Carter, 2011). Based on the Customer Loyalty research, some results corroborate the previous literature and some results are new. For example, recent findings that all firms measure customer retention Carter, 2008 corroborates the literature which says that measurement is important to sustain a retention strategy (Jamieson, 1994). These new results showed that most firms get a high percentage of their annual sales from existing customers Carter, 2008, which corroborates the literature saying that retention

is more lucrative than new business (Oliver, 1999). Also, the showing that

most firms find Customer Loyalty important Carter, 2008 corroborates the importance of Customer Loyalty to Customer Retention as pointed out in the literature (Oliver, 1997). All firms defined Customer Retention as maintaining or keeping customers, which corroborates the literature (Carter, 2008). Last, a new finding was shown in Question 6 that the majority of firms had their top 5 customers purchase from the provider's competitors during the past three years when they expected to receive the order instead (Carter, 2008). This new finding indicates that there is a development in sales with customer defections that particularly raises a customer loyalty concern for firms trying to protect business coming from their echelon of top clients.

The Neuroscience literature and research strongly suggests the positive resulting behavior from clients warrants that providers can improve Quaxi and Customer Loyalty by promoting Customer Relationship Building, providing one on one interaction with customers, improving communication and ultimately offering clients superior value which can help prevent defections. Further, it seems there is a psychological and physiological cause for Customer Loyalty connections in business. The advent of novel technologies targeting the ANS in the years to come will usher in a new age of mind-body research.

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The Art and Science of Transformation for Sustainability

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Introduction

Recently published findings from the third annual Third Annual Sustainability Global Executive Survey¹ indicate that more organizations than ever before are putting sustainability on their business agendas and recognize the need to do so in order to remain competitive.

For those companies who have successfully incorporated sustainability into their business strategy and practices, there are clear business benefits: almost a third of all respondents to the Third Annual Sustainability Global Executive Survey reported increased profits as a result. Despite this, the research also reveals that many organizations are struggling to reconcile sustainability with their core business objectives, and the study reports that sustainability ranks only eighth among important management agenda items. The researchers comment that “we may be reaching

¹Kruschwitz, N. & Haanaes, K. (2011, Fall). First Look: Highlights from the Third Annual Sustainability Global

critical mass with companies taking sustainability seriously, but we have not yet achieved a similar critical mass with companies profiting from sustainability.”²

Building on the findings from this and other recent research on sustainability, this article argues that sustainability must be viewed in organizational transformation terms and that, like other forms of large-scale business change, it can only succeed if addressed using an “art and science” approach. While the importance of the people-related aspects of organizational change are increasingly being recognized in the literature, in practice there is continuing evidence that many mission critical projects fail due to a neglect of the “art” of transformation. The article discusses several key aspects of art and science which are crucial in order to ensure that organizations maximize the business benefits of sustainability and highlights the importance of achieving the right balance of art and science when implementing sustainability initiatives.

The Importance of Sustainability

In the business context, the concept of sustainability has been closely associated with the “triple bottom line”, a phrase first coined by Elkington (1998)³ to highlight the importance of considering social and environmental as well as economic factors when calculating the costs of business activity and value generated. These social and environmental factors include, for example, health and safety, human rights, product

² Kruschwitz & Haanaes, op.cit.

³ Elkington, J. (1998). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. New Society Publishers. 132

safety, pollution and energy use, among others. The need for organizations to pay greater attention to the social and environmental impacts of their activities has increased as public awareness and media attention to these factors has grown over time. There is now a general expectation that companies will exhibit responsible social and environmental behaviour and demand the same from their suppliers⁴; the point has now been reached, it has been argued,⁵ at which those who do not live up to this are likely to be pushed out of the market.

The focus on sustainability in the business world also been reinforced by the development of stock market indices such as the Dow Jones Sustainability Index, which tracks the performance of global leaders in sustainability against economic, environmental and social criteria, and by global environmental league tables such as Newsweek's annual Green Rankings, which highlight the environmental performance of the world's largest publicly traded companies.⁶ There's also been an increase over time in social and environmental legislation or standards, bringing the requirement or at least the public expectation for organisations to monitor and report on their performance in these areas. Many large organizations and an increasing number of smaller firms publish sustainability reports or include social and environmental performance reporting in their annual reports. Maintaining a positive brand image and attracting investment are becoming largely dependent on the sustainability record of an organization and its suppliers, which is often very transparent and subject to closely monitoring by environmental groups, investors and the general public alike. Pressures

⁴Dao, V., Langella, I. & Carbo, J. (2011). From green to sustainability: Information Technology and an integrated sustainability framework. *Journal of Strategic Information Systems* 20 (2011), pp. 63–79.

⁵ Piasecki, B. (2009). *The Surprising Solution: Creating Possibility in a Swift and Severe World*. Sourcebooks.

⁶Yarrett, I. (Oct 24, 2011). The World's Green Giants. Newsweek 2011 Green Rankings. *Newsweek*.

on firms to adopt sustainable working practices are not just external: there is increasing evidence that a well implemented sustainable approach to working is associated with business benefits such as reduced operating costs, increase revenue, better brand image and more effective employee engagement⁷.

As a result, more and more organizations, across all sectors and size bands, are adopting sustainability initiatives – with no apparent decrease in this trend even in the economic downturn.⁸ Even among SMEs, a rapid increase in the adoption of sustainability strategies has been documented in recent years.⁹ That’s the positive news; but these top-line positive findings conceal equally strong evidence that many companies are struggling to successfully incorporate sustainability into their working practices or that there is a gap between rhetoric and practice.^{10 11} For example, Third Annual Sustainability Global Executive Survey revealed that “most companies” are struggling to define sustainability in a way that is relevant to their business¹², while other studies have revealed that sustainability is still being addressed in a peripheral way in many organisations, with a primary focus on “green” initiatives which are planned and implemented separately from their core business strategies. An extensive

⁷ Haanaes, K., Balagopal, B., Arthur, D., et al. (2011, Winter). First Look: The Second Annual Sustainability & Innovation Survey. *MITSloan Management Review*, 52(2).

⁸ Haanaes, K. et al., op.cit.

⁹ Chartered Accountants of Canada, American Institute of CPAs, Chartered Institute of Management Accountants (2010). *Evolution of Corporate Sustainability Practices: Perspectives from the UK, US and Canada*. Retrieved from http://www.cimaglobal.com/Documents/Thought_leadership_docs/CIMA_AICPA_CICA%20sustainability_report.pdf

¹⁰ Haanaes, K. et al., op.cit.

¹¹ Deloitte (2010). *Sustainability in Business Today: A Cross-Industry view*. Retrieved from http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/IMOs/Corporate%20Responsibility%20and%20Sustainability/us_es_sustainability_exec_survey_060110.pdf

¹² Kruschwitz & Haanaes, op.cit.

review of the web sites of leading global companies revealed a lack of sustainability targets and big gaps in practice¹³; similarly a review of leading companies in Australia companies concluded that there was “little tangible evidence that sustainable business practices are being implemented” and that “business does not even claim to be environmentally responsible except as rhetoric.”¹⁴ Although more and more organisations are implementing sustainability strategies, the evidence suggests that sustainability is still given a low priority compared with other management agenda items¹⁵¹⁶ and that relatively few are adopting sustainable working in a way that will help drive profits and business growth.

Sustainability as Organizational Transformation

What is becoming evident is that those organizations which are leading the way in sustainability and also experiencing strong business performance are those in which sustainability has been implemented in a holistic way into all areas of the organisation.^{17 18} When this is achieved, their sustainability program often becomes an important aspect of corporate branding and a powerful marketing tool.

¹³ Hubbard, G. (2011). The quality of the sustainability reports of large international companies: an analysis. *International Journal of Management* 28(3, Part 2). Sept 2011.

¹⁴ Brennan, L., Binney, W., McCrohan, J. & Lancaster, N. (2011). Implementation of environmental sustainability in business: suggestions for improvement. *Australasian Marketing Journal* 19(2011), 52-57.

¹⁵ Haanaes, K. et al., op.cit.

¹⁶ Kruschwitz, N. & Haanaes, K. (2011, Fall). First Look: Highlights from the Third Annual Sustainability Global Executive Survey. *MIT Sloan Management Review* 53(1).

¹⁷ Aberdeen Group (2010). *The Sustainable Supply Chain*. Retrieved from <http://www.aberdeen.com/Aberdeen-Library/6676/RA-supply-chain-sustainability.aspx>

¹⁸ MIT Sloan Management Review and the Boston Consulting Group (2011) *Sustainability: the “Embracers” Seize Advantage*. MIT Sloan Management Review Research Report, Winter 2011.

For example, Walmart's "Sustainability 360" program is underpinned by the three broad goals of 1) being supplied 100% by renewable energy; 2) creating zero waste and 3) selling products that sustain our resources and the environment. The company's 2011 Global Responsibility Report highlights its holistic approach to sustainability, stressing that "Sustainability 360 lives in every corner of our business – from associate job descriptions to our interactions with suppliers – and guides our decisions based on improving the environment, supply chain and communities where we operate and source."¹⁹ Similarly, the Starbucks website includes extensive reporting on the corporation's sustainability and corporate social responsibility initiatives. Starbucks emphasises in its corporate literature its Environmental Stewardship initiatives, focused on the long-term sustainability of coffee-growing communities, as well as the company's green building, energy and water conservation and recycling programs.²⁰

Successfully integrating sustainability into all areas of a business is easier said than done, however, since this will often require extensive changes not only in the way the business is organized and its strategic goals, but in corporate culture and the attitudes and mind sets of organizational leaders, employees and other stakeholders. This type of holistic approach to sustainability involves what Svenssen and Wagner (2011) refer to as a "transformative" approach involving the "achievement of genuine and continuous business sustainability and *awareness* at strategic, tactical and operative

¹⁹ Walmart (2011) *Global Responsibility Report*. Retrieved from <http://walmartstores.com/sites/responsibilityreport/2011/>

²⁰ Starbucks Corporation website, <http://www.starbucks.com/responsibility>

levels of business”²¹ (italics added). Becoming a sustainable organization is likely to involve extensive and inter-related changes across virtually all organizational functions and areas of activity, including but not confined to strategic planning, finance, product and service design, procurement and supply chain management, management and leadership, operational work, customer relations and human resource management. The ability to successfully execute these changes will depend heavily on the commitment and engagement of people involved with or affected by them. Like other major organisational transformations, therefore, the implementation of sustainability programs requires an “art and science”-based approach.

The Art and Science of Transformation for Sustainability

The case for art and science in transformation for sustainability is based on evidence from the organisational change literature that business transformations in general are subject to a high rate of failure. This indicates that, on average, less than half of organizational change projects succeed in meeting their objectives, while staying on schedule and within budget. Increasingly, the empirical evidence from employer surveys is that it is the people-related aspects of change, such as weak leadership or difficulties in changing employee attitudes, which are most difficult to achieve and often lead to project failure.²²²³²⁴

²¹Svensson, G., & Wagner, B. (2011). Transformative business sustainability. *European Business Review* 23(4), 334-352.

²² IBM Corporation (2008). *The Enterprise of the Future: IBM Global CEO Study 2008*. Available from www.ibm.com/enterpriseofthefuture.

The art involved in an organisational change initiative comprises the “softer” skills relating to human behaviour and interactions, as well as the personal attributes so important in business that are often defined in terms such as “acumen” or “intuition”. These art skills include, for example, leadership, business acumen, communications and adaptability. In contrast, the science comprises the skills and knowledge required to use formal processes, techniques and tools in planning, implementing and managing organisational change. These include, for example, requirements analysis, risk identification, financial planning and performance measurement. The distinction between art and science can also be conceptualized in terms of “right brain” and “left brain” thinking respectively, as illustrated in Figure 1. In any transformation initiative, it is essential to achieve the right balance of art and science skills (Figure 2).

Left Brain - the “science”	Right Brain - the “art”
Logical Sequential Rational Analytical Objective Looks at parts	Random Intuitive Holistic Synthesizing Subjective Looks at wholes

Figure 1: Left and Right Brain Thinking

²³ Economist Intelligence Unit (2009). *The burning platform: How companies are managing change in a recession*. Available from http://www.celerantconsulting.com/Downloads/ResearchReviews/Celerant%20-%20EIU_Burning%20platform.pdf.

²⁴ McKinsey & Company (2010). *Global Forces: how strategic trends affect your business*. Available from www.mckinsey.com/clientservice/strategy/pdf/Strategic_Trends.pdf;

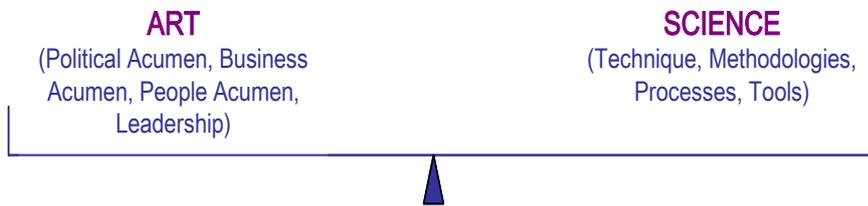


Figure 2: The Art and Science of Transformation Scale

Combining Art and Science for Sustainability

As noted above, a holistic approach involving the integration of sustainability into all areas of the organization is important if companies are to gain business benefits from their sustainability programs. First, this requires the application of science skills in systematically reviewing all functional areas and their inter-relationships, identifying sustainability goals and performance criteria, developing implementation plans and identifying roles and responsibilities. While this lays the groundwork for improvements in sustainability, achieving them also involves an extensive range of art skills. For example, these are needed to effectively communicate the objectives of the initiative and the reasons for it to all stakeholders, and to secure and maintain their commitment and contributions to achievement of the desired outcomes.

The art of transformation for sustainability will ideally also include strategies for involving the input of employees and other stakeholders in the design of sustainability programs and the identification of specific areas in which sustainability gains can be achieved in order to help meet top-line goals.

The need for art skills in sustainability goes further than this, however: becoming a sustainability-driven organization requires a shift in balance from left-brain to right-brain thinking, particularly in the setting of business objectives and performance measures. This is necessary in order to expand the organisational focus from traditional financial indicators of business success to wider definitions of costs and value incorporating social and environmental dimensions. Traditional business performance measurement has primarily been based on tangible, quantifiable indicators, such as numbers of widgets produced per hour, or turnover per month. However, many of the business benefits of sustainability are more intangible or qualitative in nature, including for example improved public attitudes to the brand or increased employee engagement. On the other hand, the implementation of a sustainability program may even involve increased short-term costs in order to achieve reduced long-term costs and greater profits.²⁵ These characteristics of sustainability programs create challenges for traditional science-based accounting and performance management systems, and call for more creative approaches to assessing performance and the increased use of qualitative performance measures. At least until recently, relatively few organisations were successfully achieving this: a 2008 employer survey reported that major barriers to the successful integration of sustainability into financial strategy included the difficulties of measuring its impact on financial performance and shareholder value.²⁶

²⁵ Butler, J.B., Henderson, S.C. & Raiborn, C. (2011). Sustainability and the Balanced Scorecard: integrating green measures into business reporting. *Management Accounting Quarterly* 12(2), 1-10.

²⁶ Cited in Butler et al., op.cit.

Overcoming such barriers requires a change in organisational culture and a relative shift in focus from science to art but also an investment in organisational learning and knowledge accumulation about social and environmental issues. Having roles dedicated to the promotion of sustainability can be important way of achieving this; individuals with relevant knowledge and awareness can be appointed to these roles, or provided with suitable training and development; these then act as sustainability “champions”, educating other employees and stakeholders through organisational communications and ensuring that sustainability stays firmly on the business agenda. The more senior the champion the better, perhaps: the Aberdeen Survey (2008) found evidence many companies rated “best in class” in sustainability had appointed executive leaders to head their green supply chain initiatives, and these played a key role in communicating progress with internal and external stakeholders, building commitment and improving collaboration in pursuit of their sustainability goals.²⁷ The “soft” skills of managers and team leaders at all levels of the organisation are also important in contributing to the success of sustainability initiatives, according to a 2010 survey conducted by the International Society of Sustainability Professionals (ISSP), the most important of these include communication skills, the ability to influence, inspire and motivate others, team-building skills and problem-solving.²⁸

Communications and people-management skills are indeed among the most important factors in ensuring the success of a sustainability program, but it is fundamentally the combination of art and science that is crucial, especially in relation to stakeholder management. Monitoring and securing progress towards sustainability goals in the

²⁷ Aberdeen Group, op.cit.

²⁸ Johnson, D. Sustainability: spin or substance? *ISHN.com*.45(5). (May 2011): 1,28,30.

supply chain can be especially challenging for many major corporations with extensive supply networks. In the case of Walmart, for example, more than 100,000 suppliers globally participate in the Sustainability 360 program, requiring an efficient system for collecting sustainability data and tracking performance against specified sustainability goals. Such systems must be effective not only for monitoring and performance measurement purposes but also to engage and motivate participants to improve sustainability in their business. One approach to this is provided by the example of Proctor and Gamble's Supplier Environmental Sustainability scorecard system, which generates supplier ratings on the basis of performance and can presumably influence the participants' prospects for future business with the corporation.²⁹

External stakeholders play a particularly important role in the success or otherwise of sustainability initiatives. A major corporation's record and reputation on sustainability can be severely damaged if their overseas suppliers are found to be using unethical or illegal working practices, such as child labor, or if the hazardous components in its products are not being safely disposed of after use. Similarly, a company's efforts to introduce recyclable packaging materials may backfire if sales drop because customers dislike the new packet designs, and sustainability plans and policies will be no more than the paper they are printed on unless they are adopted by employees into everyday working practices. Analysis techniques such as stakeholder mapping and SWOT analysis provide the structures and methods for documenting program-related risks and opportunities, but to identify and understand how to manage those arising from

²⁹ GreenBiz Staff (2010). *P&G Launches the Latest Supplier Sustainability Scorecard*. Retrieved from <http://www.greenbiz.com/news/2010/05/12/procter-gamble-launches-the-latest-supplier-sustainability-scorecard>

stakeholder interests and concerns requires people-related skills, and the ability to design communications and other measures that will be effective in securing the commitment to and engagement in the program of the respective stakeholder groups. This point applies as much to internal as to external stakeholders: for example, securing the commitment of finance officers to the program is likely to require an emphasis on the expected long-term reduction in cost and increase in profit or efficiencies; where external suppliers are concerned, it will generally be important to stress collaboration and the benefits to them of being associated with the sustainability program, rather than placing too much emphasis on monitoring and scrutinizing their business practices.

The above represent just a few examples of ways in which a combination of art and science are crucial in transformation for sustainability. Evidence of the effectiveness of this approach can be found in the finding of sustainability surveys. For example, those companies that were found to be profiting most from their sustainability programs in the Second Annual Sustainability & Innovation Survey and the Third Annual Sustainability Global Executive Survey were reported to have an analytical approach to sustainability, including the development of a formal business case for their program, and the use of scientific methods such as scenario planning and strategic analysis. At the same time they displayed strong evidence of a change in organisational thinking and culture, with sustainability being regarded as core and being discussed by respondents to the survey in terms of both tangible and intangible

benefits such as process improvements, innovation opportunities and business growth”.³⁰³¹

Conclusion

With organisations facing increasing internal and external pressure to adopt sustainability initiatives, there is a pressing need for increased awareness and understanding of how to incorporate these in a strategic way into all areas of the organisation. Sustainability as an add-on or peripheral “green” program is a risky approach and one which is likely to represent a business cost; a holistic program in which sustainability is integrated into all organizational functions and stakeholder groups can be an effective driver of business growth as well as environmental and social benefits. This requires a transformational approach based on the application of art and science, to ensure that sustainability becomes embedded into the structure and culture of the organisation. Since the benefits of sustainability are often long-term and largely intangible, this is essential to ensure continued commitment to a program and minimize the risk of slipping back into “old” ways of doing things.

³⁰ Haanaes, K. et al., op.cit.

³¹ Kruschwitz, N. & Haanaes, K., op.cit.

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Creating Flexible Jobs for Rural Women in Bangladesh: The Case of Hathay Bunano

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Executive Summary

The current case study is on a social business in Bangladesh called Hathay Bunano Proshikhan Samity¹ (HBPS or Hathay Bunano) producing hand crocheted and hand knitted children toys and clothing. It was established in 2005 by a Bangladeshi-British couple Mr. Golam Morshed and Ms. Samantha Morshed. Acute poverty is a significant issue in Bangladesh with 40% of the country's 160 million inhabitants living below the poverty line. The underlying objective of the business was to create employment opportunities for rural poor women as a sustainable solution to alleviate poverty.

The working model of HBPS is based on a low-cost, labour intensive, electricity-saving low technology production process which leverages the natural skills of the rural women. HBPS provides skill training on crochet, knitting, and embroidery to the women artisans free of charge. Production activities are undertaken by separate groups of women artisans and supervised by well trained supervisors. They are all paid at a fair wage rate. HBPS products are marketed through renowned wholesale and retail buyers located in Europe, USA, UK and Australia.

The major challenges Hathay Bunano faces include mobilizing funds for expansion activities, collecting high quality raw materials, infrastructure in rural areas, and building awareness among the local community in undertaking their activities. Despite these challenges, the growth in business of HBPS has been quite phenomenal – with employment and revenue almost doubling every year. They have also been able to generate a modest profit margin which is re-invested into the business for training and business development. Their high quality children's products meet quality requirements of international markets. This has positioned them as a market leader in hand made children toys and attracted many international buyers.

Hathay Bunano's business has several economic and social implications. Flexible employment has enabled the women to come out of poverty by earning additional income. Employment for the rural women has been reducing economic migration to urban areas, delaying their early marriage, and reducing the birth rate.

'It's not aid that can solve the poverty problem in Bangladesh. A sustainable solution to poverty is the generation of employment for the poor.'

- Samantha Morshed, CEO, Hathay Bunano

The Poverty Situation in Bangladesh

Bangladesh is one of the poorest countries in the world with a population of 160 million and a per capita income of less than US\$600. Poverty remains a major challenge for the country where about 40% of the total population lives below the

income poverty line of US\$1/day. The situation is even worse in rural areas. Several studies also found that the ‘hardcore’ poor are largely women and the proportion of ultra poor (food intake of less than 1,600 calories per day) and extreme poor (food intake of less than 1,805 calories per day) is higher among female-headed householdsⁱⁱ. Every year about 60% of the annual national budget is allocated, directly and indirectly, to poverty reduction programs by the government which includes micro-credit as an important vehicle.

Microfinance and Poverty Reduction

For over three and a half decades a number of NGOs have been working in Bangladesh to reduce poverty through generating employment and income for the poor. Many of these initiatives have been micro-credit based with the general assumption that by lending money to a poor person, they are able to start a business, become an entrepreneur, be self-sustaining and may even employ other people in time. These initiatives, however, attained limited success in reducing poverty.

For communities who are extremely poor there may be insufficient purchasing power within the community to support new businesses. For such communities there is a need to expand the local economy in order to increase local purchasing power. Interest rates on microfinance loans can be high. If given the choice, the majority of people would prefer a steady income from a job over the risks and unpredictability of entrepreneurship.

A Social Business Enterprise for Addressing Poverty

With a view to addressing the needs of the poor people for employment, a British-Bangladeshi couple, Ms. Samantha Morshedⁱⁱⁱ and Mr. Golam Morshed^{iv}, initiated a social business to create employment opportunities for rural women. They believed that this would generate income for the poor in a sustainable way and contribute meaningfully to poverty reduction in Bangladesh. In 2005 they formed Hathay Bunano Proshikhan Society (HBPS) as the country's first handmade children's toy company.

HBPS products are all hand crocheted and hand knitted children's items such as toys and clothing for children up to six years of age. These items are produced through a hygienic production process meeting international standards. They are sold in international markets through HBPS' foreign buyers located in the USA, UK, Australia, Europe and Scandinavia. As of January 2013, 65 production centres of HBPS are in operation across 12 different districts in Bangladesh employing about 6,500 rural poor women. Utilizing its full capacity HBPS is currently producing 120,000 pieces of 350 different items per month.

HBPS controls all the activities from its head office, a rented building, located in the capital city Dhaka. Administration, market networking, quality control, packaging and labeling activities are done in separate units in the same building. Production units are spread in 65 different rural locations in Bangladesh. These areas are, like other rural areas of the country, characterized by predominantly agricultural activities and high rates of poverty. Women in these areas have limited opportunities to get involved in any productive activity outside the home. Hathay Bunano, however, prefers to employ

disadvantaged women, including women with young children, physically disabled women, and socially disadvantaged ethnic minorities.

Emergence of a Unique Initiative in Bangladesh

After about 22 years in the United Kingdom, Golam and Samantha came back to Bangladesh with a strong urge for contributing to poverty reduction in the country. “Since independence Bangladesh received plenty of support from a number of international development organizations but very little improvement has happened in its poverty situation” said Samantha. They wanted to do something meaningful in addressing the real needs of the poor. Samantha said, “you can’t expect to have such a large proportion of the poor having entrepreneurial ability so that they can utilize the micro-credit properly and generate sustainable income for themselves”. She added “in many of the communities in which we work, the poverty is so severe and the communities are so isolated, that there is simply insufficient purchasing power within the community to support large numbers of new businesses.” The philosophy adopted by Samantha and Golam was that these communities need to have employment opportunities, thereby expanding these isolated village economies and providing a base from which micro-finance businesses would then have a better chance of success. “Hand manufacturing products for export fitted this criterion” said Samantha.

Selection of Handicraft Business

Having skills in hand crochet, embroidery and knitting that she acquired from her mother in her childhood coupled with her natural talent in product design and a business background, Samantha developed an idea of a business model which would

provide a solution to the poverty problem through generating sustainable employment opportunities for rural poor women.

The basic premise was that global society needs to find ways to increase employment in the developing world without increasing consumption and materialism in the developed world. Rural women in Bangladesh typically like handicraft work: their fingers are nimble and the women are quick and eager to learn. Samantha recognized that this is why so many donor funded handicraft projects had been run over the past decades. But despite this natural ability of the rural women, the vast majority of the handicraft projects had never become sustainable commercially and this sector had failed to attain scale even after at least 20 years of effort by NGOs - both large and small - in the country.

Following research over several years in rural communities, Samantha deduced that the rural women of Bangladesh wanted work that is fairly paid, good quality, flexible and local. At the same time export customers wanted to be able to consistently purchase quality products. “Product design and market linkage are critical for success of these products” added Samantha. However, the model for handicraft production that Samantha developed sought to bring together these principles and to leverage the natural skill of the rural women of Bangladesh and the ready availability of their labour.

Identifying the critical factors of success of the ready-made garments industry in Bangladesh, Samantha applied the same principles to this new model of rural hand manufacture. If the customers were to supply the designs, a centralized sampling¹⁵⁴

unit would develop sample products until they met the customers' requirements. And following placement of order, the production would be distributed to rural women for hand manufacture. "This is a completely new and revolutionary way of approaching the handicrafts industry" said Samantha.

Piloting the Model

Piloting of Samantha's model began in November 2004. The first step was for Golam to approach an NGO for whom he had done some fundraising in the past. The NGO had a vocational training centre in Mirpur^v. One group of 12 young women from this centre was allocated to Samantha and Golam for the hand knitting training and Samantha personally taught them all to knit by hand with two needles. The young women learnt quickly and well and it was clear that the project could progress. Early in the second month of training Samantha made the first sample of a knitted 'baby hat' and 'baby booties' which received the first export order for 200 sets from a retailer in the UK.

At the end of the 6 weeks training the women needed to move into production work and so needed to leave the vocational training centre. Without a building for this new production order and still in a pilot phase, it was decided to continue the production in the spare room of Samantha's home. The women were then paid bus fare on a daily basis to enable them to travel the short distance to work and Samantha personally supervised the pilot production. The order was completed on time and at good quality and it was clear that the pilot could now be trialed in a rural location.

The First Rural Production Centers

Before the start of the rural production activities, Samantha and Golam explained the model that they sought to test to the potential women workforce in the locality through a meeting organized by the local community in Narshingdi District. “We are neither a charity nor a donor. We wish to bring employment to you” said Golam to the women participants. The first rural production centre, a semi-pacca^{vi} room at a monthly rent of Tk 300 (approximately US\$4), was set up in Shilmona village of Narshingdi district - an area that Samantha and Golam had visited in the past and where they had met groups of women brought together by micro-credit schemes. Since Narshingdi is only two hours’ drive from Dhaka it seemed an ideal place for the first rural pilot since Samantha would be able to travel out daily to the site to supervise early training. Four women were selected from Narshingdi to be trained as supervisors and were brought to Dhaka for a two-week intensive training by Samantha in her home. At the end of this training they went back to Narshingdi to run training courses for 25 women in each of two locations in Narshingdi. Samantha visited three times a week to guide the courses and ensure progress. These original trainers went on to become supervisors of the initial production centres which were run in basic structures rented on a monthly basis from the local community. The training process was revised and streamlined over time.

Setting Up a Rural Centre

HBPS’ production centres are generally low cost rented rooms with lots of day light and adequate working space facilities for a minimum of 50 women at a time. The concept of renting local buildings from the communities is a good way of initially eliciting support. Master trainers at the head office are sent to the center for

imparting training to the women workers. When the trainers go to a new area to set up a new centre, Hathay Bunano management staff arrange for the trainers to stay within the local community and to share a house with a local family. This situation would not be possible if Hathay Bunano were using educated women from Dhaka as trainers and Samantha and Golam sees this as being crucial in the success of the training.

The overall responsibility of the center is entrusted to one of the best performing trainees, with great ability to pick up a new design and specification of an item, but not necessarily with the educational background needed for undertaking administrative tasks and maintaining proper accounts. If these skills are lacking then training is provided for this as well.

Three supervisors, one each for crochet, knitting, and embroidery works, are selected from the trainees. The selection is based on their skill level, performance, and ability to disseminate the idea among the respective group members when an order with new design comes to the centre.

One field worker is appointed with the responsibility to visit the households and mobilize women workers interested to work for HBPS. All these staffs are in the payroll of HBPS and can also take part in the production of the items like any other worker. Where the community requires childcare then two maids are appointed in the centre, offering day care facilities (non-formal education, toys for playing, sleeping facilities) for the women workers with children.

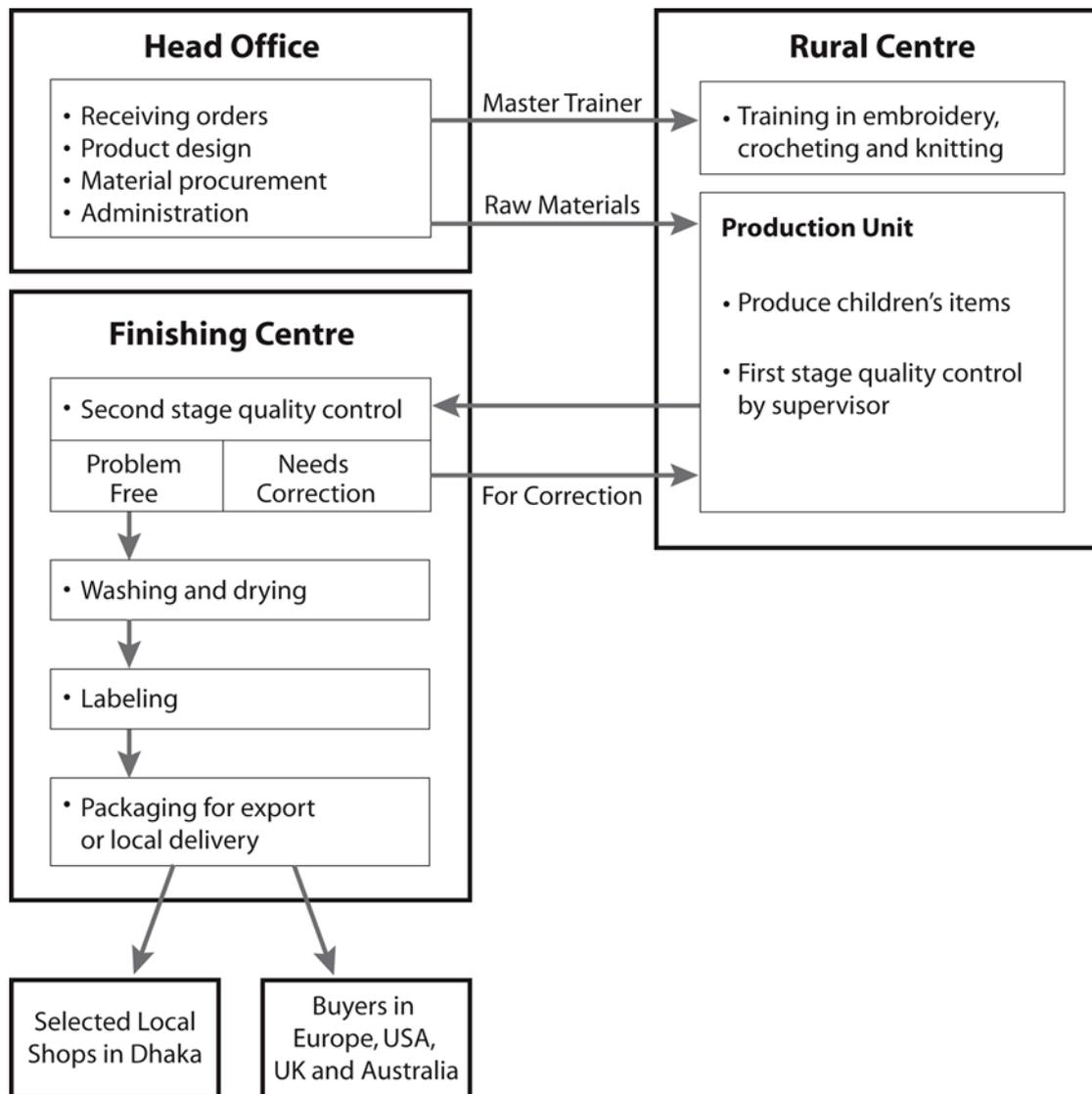
Production and Quality Control

Orders are received from foreign buyers at HBPS' head office. Design and other specifications are usually supplied by them although Samantha also works with them on product design. Along with this, required raw materials are sent to the rural production centres. Where a new product is required, the rural centre supervisor comes to the head office for one or two days to learn about the new product and then goes back to the rural centre to teach this product to the artisans. For greater competitiveness and more commercial viability, HBPS developed a 4 stage centralized quality control system. "Quality of the product is critical for ensuring a sustainable foreign market" said Samantha. HBPS therefore puts a special emphasis on the quality aspect of their products. First line of quality control is done at the production centre by the supervisors. The size of the product, the material it contains, pattern, and colour are the major considerations at the first level of quality control. In the absence of its own dedicated transportation facility, the finished products are taken to the nearby bus station using local transport (rickshaw, bicycle, etc.) for sending to the Dhaka office by bus.

The quality control team at the head office does the sizing, measurement etc. In case of any production error the item is sent back to the respective worker for rectification^{vii}. The problem free items, after washing and drying, are sent back to the central quality control unit for final checking. Then, the labeling and tagging teams attach the logos of the respective buyers such as Jojo, Best Years, Lark, and YLK. Once all these activities are completed the products are packed in hard paper boxes for export. Depending on the size of the order and the delivery time required by the customer, the

products are then dispatched by international courier, Express Mail Service or sea shipment. Hathay Bunano's business model is illustrated in Figure 1.

Figure 1: Hathay Bunano's Business Model



Marketing

Knitted children's toys and clothing is a US\$4billion global market. Samantha recognized product design and market linkage as the critical factors for success in a handicraft manufacturing business. Hathay Bunano has successfully entered several developed country markets, which is highly challenging for any developing country business enterprise. Samantha's skillful marketing strategies for the local products have created networks with the distributors and retailers locally and internationally. Developing their own web site, exploring foreign markets for children items, and contacting foreign buyers directly with samples have been their major marketing techniques. While Hathay Bunano is a fair trade organization and a member of the Ecota Fair Trade Forum^{viii}, they do not sell their products through traditional fair trade outlets. Samantha was clear when she first started to market the Hathay Bunano products that she didn't want customers to buy them because they felt sorry for the women making them. 'The women are capable and have dignity' Samantha said, 'they do not need our sympathy – simply they need economic opportunity.'

HBPSs Financial Model

"We are not a charity" says Golam at the meetings organized before set up of a rural centre. He also explains HBPS' model and says that the women will be provided training free of charge. Once they start producing the items they will get paid for their work. HBPS believes in fair payment, which is made on product basis and in general estimated at Tk 10 per hour (approximately US\$0.14). The minimum wage in Bangladesh is Tk 6 per hour (US\$0.09) but for rural handicrafts work it is not uncommon to see women working for as little as Tk 3 per hour (US\$0.04).

The product piece rate is calculated based on the time that it takes to make the product. This time is recorded when the product is first sampled in the head office. Once the item goes to the rural production centres for production the women may make the same produce for a few weeks and as such are able to increase their productivity and make the item more quickly than it was made in the sample room. The costing system is therefore beneficial for the artisan.

At the same time, in line with fair trade principles, when the sample is first sent to the rural centre for production, the supervisor will advise whether the piece rate for this product is in line with the other products that are being made and at this point there is opportunity for negotiation by the artisans on the price paid for the hand manufacture of this product.

As a measure to avoid any kind of order related risk new customers are required to pay 50% of the purchase price upfront. Full payment is required within 60 days from the date of delivery of the products. HBPS generates an operating profit of approximately 42% on average. As a model of for-profit social business, HBPS reinvests this profit into the business which is basically used for training, business expansion, marketing, research and development, and workers' welfare facilities (day cares, etc.).

Growth in HBPS' Activities

Over a period of only seven years since its launch as a formal social business entity, HBPS activities have expanded at a remarkable pace. The number of centers and employees has almost doubled every year (see table 1).

Table 1: Growth of HBPS' Business

	2005	2006	2007	2008	2009	2010	2011	2012
Centers	4	9	15	24	34	45	54	65
Employees	300	625	1,200	2,000	3,500	4,300	5,600	6,500

Business progress of HBPS has been quite satisfactory so far as HBPS is producing at full capacity. The business that began with an initial investment of US\$500 in 2005 has been able to generate a total sales volume of about 120,000 pieces per month. In addition, HBPS has been able to establish “Pebble” as its own brand. Several large retailers are now selling Hathay Bunano’s own Pebble branded items.

Key Challenges

With regards to its operations and business development, HBPS has been facing a number of challenges and constraints as described below.

Financial constraints: “We don’t have any bank loan and we are reluctant to take it due to its high interest rate” said Golam while talking about the challenges they face in expanding their activities and setting up new centers. High quality raw materials used in the production of the items and equipment are costly. Workers’ training that is provided free of charge, involves high cost estimated at about US\$ 30,000 for a group of 200 women.

Knowledge and skills: The required artisan knowledge and skills have to be developed by HBPS on its own which is time-consuming and costly. Attitudes of rural people towards allowing women family members to engage in activities outside home are not

always positive as some family members may think that it will prevent women from doing their household chores.

Regulatory environment: Local government administrators in most rural areas do not have adequate knowledge about what kind of activities are allowed in their jurisdiction area. Therefore sometimes they create barriers to the activities of HBPS.

Physical infrastructure: HBPS tries to minimize cost by renting low-cost rooms in rural locations. But as the products are consumed by foreign customers, hygiene maintenance at the production level is a major prerequisite.

Production materials: Hathay Bunano works exclusively in 100% cotton. Good quality Oeko-tex^{ix} certified cotton is readily available in Bangladesh through the ready-made garment industry but the minimum quantities for order are large. Meeting these minimum quantities in order to secure high quality raw materials has been challenging for Hathay Bunano and has tied up significant working capital during growth.

Solution Strategies

Despite all the challenges mentioned above, HBPS has been taking their initiative forward with their own strategies.

Corporate social responsibility and upfront payments: To deal with the financial constraints in establishing new centres and growing its business, HBPS receives some donations from different multinational corporations. For undertaking

production activities and avoiding any kind of order related risk that might put them in financial problems, HBPS requires 50% of the order value upfront.

Meetings with local leaders: Before starting a new centre, HBPS organizes meetings with local leaders to build awareness about HBPS activities and its potential economic and social benefits. This facilitates involvement of the rural women in the business and getting support of the local community.

Skill development training: Guided by its underlying objective of generating sustainable employment for rural poor women, HBPS organizes artisan skill development training. They deploy master trainers from their pool of trainers at the head office.

Dialogues with the local administration and personal connection: HBPS co-founders organize informal dialogues with the local administration when they find any kind of obstacles. They also take help from their friends and relatives occupying responsible positions in the higher administration and in the society in such situation.

Getting hygienic production centers: HBPS products made for children and sold in high standard international markets require a hygienic production environment. To ensure this aspect they establish production centres in clean locations taking assistance from the local people.

Own production: HBPS produces, on their own, low-technology equipments used for

crochet, embroidery and knitting as good quality equipments of required sizes are not available in the local market.

The Key Contributors to the Development of HBPS

HBPS' founders: The two founders of HBPS – the CEO Ms Samantha Morshed and her husband, the Chairman, Mr Golam Morshed have been the key contributors to the development of this unique initiative in Bangladesh. Besides them, a couple of corporations, international and local development organizations and local elites contributed to the expansion of HBPS activities which are briefly discussed below. “We need more and continuous support as there is ample opportunities to expand our activities across the country. Many people approach us to open up our activities in their areas but the important barrier is lack of adequate financial resources” mentioned Golam while discussing the constraints for further expansion.

Corporations: A couple of multinational corporations in the oil and exploration industry, namely Tullow Oil Company Bangladesh Ltd and Chevron Bangladesh Ltd, extended support to HBPS activities as part of their corporate social responsibility (CSR). Tullow Oil learnt about HBPS activities in 2007. They collected information from several sources and visited their project sites. “We were convinced with their initiatives in creating employment and income generation opportunities for poor women and decided to provide them with financial support as a part of our CSR activities” said Mr Jasim Uddin of Tullow. He further mentioned “we talked to the women workers in one centre and found that it is contributing to improving their living standard”. Tullow allocated US\$23,000 in 2008-09 for covering the training costs of 200 women in one centre, which is about 80% of the total training costs.

Satisfied with HBPS' performance, they decided to reallocate a similar amount in 2009-2010. Knowing about the development initiatives of HBPS from different sources, Chevron Bangladesh Ltd also came forward with financial support by bearing the training expenses of 150 women at the Kamalganj centre as a part of their CSR activity.

Local and international development agencies: The activities of HBPS attracted attention of the local and international development agencies as the agendas of both match well. HBPS is engaged in employment and income generation for poor women. The development agencies, both local and international, extend support to HBPS to support poverty reduction. In 2009 a local NGO in Sirajganj named National Development Program (NDP) contributed 40% of the training cost for 200 women of two centres in Sirajganj district. They were attracted to the activities of HBPS which were directly contributing to poverty reduction in their area. International organizations such as the International Finance Corporation (IFC), the South East Asian Development Facility (SEDF), the UK Department for International Development (DFID), and Swiss Contact have extended support for the development of HBPS. IFC and SEDF developed its Management Information System (MIS) at a cost of approximately US\$9,000. British Council and Swiss Contact supplied second hand computers for HBPS' organizational development.

Local leaders: Some of the local leaders from the rural production centre areas contributed to the expansion of HBPS' activities. Knowing about the activities of HBPS they spontaneously provided initial information about their respective areas in terms of availability of women workforce, availability of infrastructure, and their

commitment to provide required cooperation for establishing the HBPS production centres. Their active participation in organizing meetings before starting a new centre has been instrumental in building awareness among the local people and involving the women in their activities.

HBPS' Economic and Social Impacts

Hathay Bunano has been an initiative to contribute to poverty reduction in Bangladesh. It was started with the aim of creating flexible and sustainable employment for women in rural Bangladesh who have limited work opportunities outside home. Shilpee, an employee interviewed by the BBC said “Before Hathay Bunano came here we had nothing to do. The women just sat in their homes.”^x

HBPS generates several direct and indirect economic benefits for the rural poor. They create employment which fits in with the rhythm of rural life. For example, during harvest time, the women are needed in the fields to help with the harvest and during this time they want very little other work. In contrast during the flood and the Monga^{xi} season, they want to work longer hours for Hathay Bunano in order to earn much needed money.

HBPS has created employment opportunities for about 6,500 rural poor women artisans through its rural production centres across the country. In addition to this 70 supervisors are also working in these centres. At their head office in Dhaka a total of 39 staff is engaged in quality control, packaging, washing and finishing. Employment generation by HBPS attained remarkable compound annual growth rate of 85%.

The women workers, on average, earn about Tk 1,000 (approximately US\$ 14) per month. This additional income for the family has enabled them to come out of poverty. Many women repay micro-credit loans and are able to provide better food and financial support to their families. Children can go to school for more years and have better nutrition. HBPS' is generating a profit margin of 42% which is re-invested into the business for training, marketing, research, and other development purposes.

The value that Hathay Bunano has created is not only financial but social as well in the way that the philosophy aligns with the rural way of life. The social impact of working with multiple rural units is far greater than urban production and significantly reduces economic migration.

This initiative contributes to women's empowerment. Learning how to operate bank accounts, awareness about their social rights, raising their voice to the local leaders to construct rural roads, ability to delay early marriages, and participating in important decision-making in families have been mentioned as indirect benefits of HBPS' activities by some of the women workers.

HBPS has also been working with the Centre for Rehabilitation of the Paralyzed for providing employment opportunities to some of its patients. The World Health Organization estimates that 10% of Bangladeshis are disabled and are rarely seen to be taking part in the activities of society. Working closely with the disabled and offering them employment opportunities helps improve the attitude of the society towards them.

Concluding Remarks

Despite the challenge of mobilizing financial resources for expansion, the potential benefits of this social business that contributes to poverty reduction through generating sustainable employment opportunities have been quite substantial. Hathay Bunano is moving ahead with the principle that poverty reduction is not only possible but achievable and that social business is the most effective instrument to achieve it.

The market is expanding as HBPS continues to work with existing buyers as well as developing relationships with new buyers. As HBPS' production capacity increases, they are able to attract ever larger multinational buyers and encroach on what was traditionally entirely a 'machine made' business. Sales revenue has increased steadily and total production is currently over 120,000 pieces per month.

Rural hand manufacture, whereby customers send design specifications and HBPS then sample and subsequently produce the items has enabled rapid growth of Hathay Bunano. Combining this with maintenance of product quality and consistency over volume has enabled HBPS to develop a worldwide reputation within the handmade toys market. HBPS is now leveraging this reputation with the launch of their own brand, Pebble, which aims to create a clearer and more human link from the product to the artisan. This will enable further growth of HBPS in the coming years. If proper support is generated, Samantha's dream of making Hathay Bunano a large business umbrella with the rural poor women as the shareholders of rural production will be a reality in the near future.

Endnotes

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- ⁱ Hathay Bunano Proshikshan Samity means 'hand knitting training association' in Bangla.
- ⁱⁱ Government of the People's Republic of Bangladesh, 2008. "Moving Ahead" Poverty Reduction Strategy
- ⁱⁱⁱ Government of the People's Republic of Bangladesh, 2008. "Moving Ahead" Poverty Reduction Strategy Paper.
- ^{iv} Samantha was born and brought up in the United Kingdom. She is a physics graduate from Oxford Brookes University. She also completed post graduate studies in financial economics at the Birkbeck College, University of London. She has long working experience in the City of London working in the banking sector.
- ^v Graduated in History at the Dhaka University and migrated to the UK in the mid eighties and worked in media and marketing.
- ^{vi} The NGO called Dhaka Ahsania Mission had a vocational training centre in Mirpur, training 16 year old women in tailoring and beauty parlour primarily as a way of delaying their marriages and preventing them from starting work so early in the garments factories.
- ^{vii} Semi-pacca means a room with a concrete floor with corrugated tin walls and roof.
- ^{viii} The name of the worker producing an item is provided in a label on each product. HBPS reports an error rate of less than 1%.
- ^{ix} The body for fair trade in Bangladesh.
- ^x Oeko-Tex standards are a global testing and accreditation scheme for the screening of harmful substances within consumer textiles.
- ^{xi} Mark Dummett, Taking Jobs to Bangladesh's Poor, BBC News Ratakandi
http://news.bbc.co.uk/2/hi/south_asia/7897097.stm
- ^{xii} Monga is a Bengali word meaning a famine like situation which appears specially in September through November in Bangladesh.