

IMPACT OF INNOVATIVENESS, HUMAN CAPITAL ON FIRM PERFORMANCES OF FLORICULTURE EXPORTERS IN GAMPAHA DISTRICT IN SRI LANKA

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Introduction

Innovation is the backbone of entrepreneurship, which is identified as an opportunity for entrepreneurial firms to gain returns through the temporary establishment of a monopoly and it is also a key source of long-term entrepreneurial success [1]. However, some scholars argue that innovation is an event that is fraught with a number of unwelcome elements. According to Stinchcombe (1965), new forms of organizations (innovative firms) are particularly prone to various discouraging odds due to their newness [2]. At the same time, they are lacking with internal efficiencies and sound relationships with different stakeholder groups. Therefore, innovative firms are more likely to be susceptible to poor performance and failures, compared to imitative firms. Due to the indifference nature of research findings on the relationship between innovations and firm performance, this study is designed to find out the impact of innovation on firm performance with special reference to small scale firms.

Entrepreneurial literature has identified number of factors that determine the success of the small firms such as individual-specific characteristics, firm-specific characteristics, and industry-specific characteristics. Among those factors, individual-specific characteristics have been identified as the most prominent factor, specifically in small scale firms, where the owner of the firm plays a strategic role within the enterprise. Human capital is defined as “the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” [3]. The human capital attributes such as: personal characteristics, age, years of education and training, work experience of the owner manager, industry specific experience determine the level of success of the business. Some scholars argue that, human capital and venture performance have a positive relationship [4] while, some others contend that there is no clear relationship between educational attainment and firm performance [5]. This implies that, there are inconclusive results with regard to the relationship between human capital and firm performance.

Sri Lanka is one of the best quality floriculture producers in the world. This sector generates high net foreign exchange earnings to the country while contributing to employment generation in the rural and suburban areas. Europe is the main market for floriculture products where, 60% of Sri Lankan exports are destined to the Western continent, while Japan, Middle East, the USA and Korea make up the other key markets. Sri Lanka exports floriculture products to those markets including, ornamental foliage plants, decorative cut foliage, cut flowers, aquarium plants,

landscaping plants, tissue cultured plants and flower seeds. According to the rapid growth of floriculture industry with the export market, innovativeness is considered as an essential feature to face the competition and lead the business towards high firm performances. Given that the human capital characteristics of the firm owner play an important role in bringing innovativeness to the firms which ultimately results in improved firm performances.

On the above background, this study was focused on identifying the impact of innovativeness and human capital on firm performances among floriculture exporters of Gampaha District in Sri Lanka.

Materials and Methods

Study Area and Data

Fifty-two floriculture products exporting firms from Gampaha district, registered under Gampaha Botanical Garden were taken as the sample for the study. Sample was consisted with small and medium scale floriculture exporting firms established in six Divisional Secretariat divisions namely, Gampaha, Minuwangoda, Mirigama, Katana, Ja-Ela and Divulapitiya. The study was mainly based on the primary data collected through survey method, using a pre-tested, structured questionnaire. The questionnaire was administered among owners/top managers of the selected 52 floriculture exporting firms via face-to-face interviews. The questionnaire was constructed to expose and evaluate the impact of human capital and innovativeness on firm performances. Innovativeness was measured as the number of innovations introduced by the firms under four innovation types (i.e. product, process, marketing and organizational) and under four degrees of innovativeness namely, entirely new to the world, new to the market, substantially improved and imitative.

Theoretical Framework

It was hypothesized that, the selected human capital variables such as; Age (AGE), Gender (GEN), Educational Qualifications (EDU), Former Work Experience in Years (EXP), Number of Former Startup Attempts (STAR), Self Confidence (SC) and Preference for Risk Taking (RISK) and Innovativeness (IN) are positively related with the firm performances among the floriculture exporting firms. Firm performances were measured using both exportation growth (EXG) and employee growth (EMG) (Figure 01).

Empirical Model

The following empirical model was specified to examine the relationship between innovativeness, human capital and firm performances. The dependent variable is identified as the firm performances which were measured under two-folds namely; exportation growth and employee growth. Thus, two models were separately fitted for the two dependent variables.

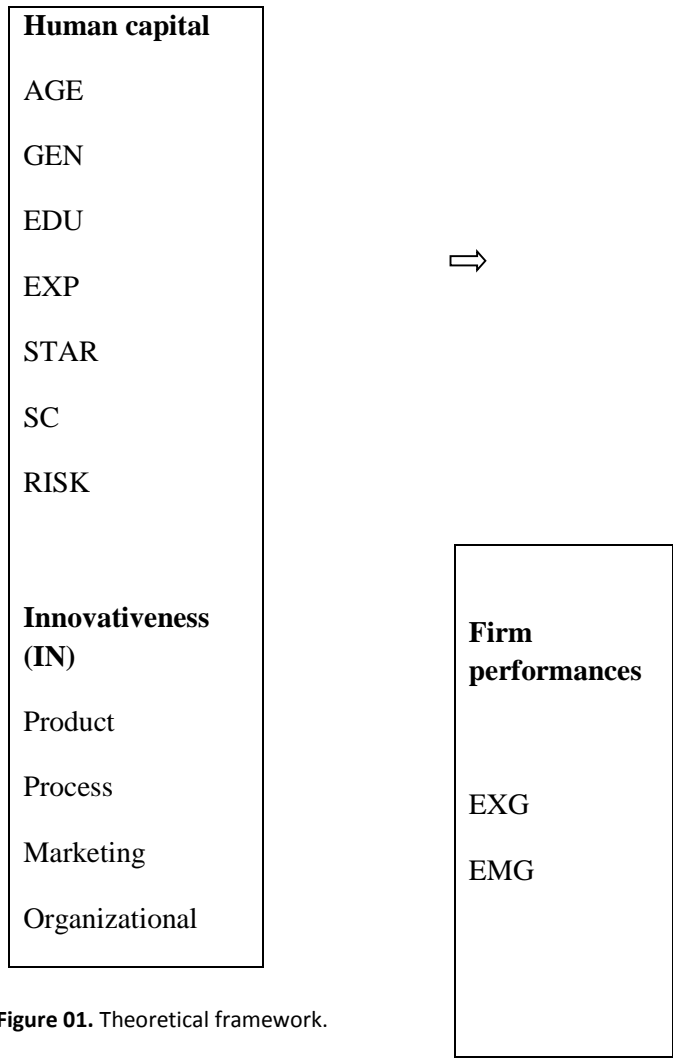


Figure 01. Theoretical framework.

$$Y = b_0 + b_1AGE + b_2GEN + b_3EDU + b_4EXP + b_5STAR + b_6SC + b_7RISK + b_8IN + e_0$$

Where;

- Y = Either exportation growth or employee growth
- $b_1 - b_8$ = Regression coefficient
- AGE = Age
- GEN = Gender
- EDU = Educational qualifications
- EXP = Former work experience in years
- STAR = Number of former startup attempts
- SC = Self confidence
- RISK = Preference for risk taking
- IN = Innovativeness
- e_0 = Error term

Derivation of Index to Reflect Firm Innovativeness

The first step towards empirical analysis was to assess the degree of innovativeness of which the firm is adopting over past three years. Firm innovativeness is a composite variable consisted of four types and four degrees of novelty. Thus, it was essential to derive single composite index to reflect different types and degrees of novelty. Therefore, the following formula was used to derive the innovativeness index.

$$\text{Innovativeness Index} = \frac{\sum Bi}{\text{Max } I * n}$$

Where;

$\sum Bi$ = Sum of scores given by i^{th} respondent

Max I = Maximum score that could be given by a respondent

n = Number of statements

Data Analysis

Both descriptive and inferential statistics were used to analyze the data. Ordinal Logistic Regression analysis was used to examine the impact of owner characteristics and innovativeness on firm performances. The Ordinal Logistic Model is a regression model that applies to dichotomous dependent variables allowing for more than two response categories. The Statistical Package for the Social Science version 16.0 was used for the analysis.

Results and Discussion

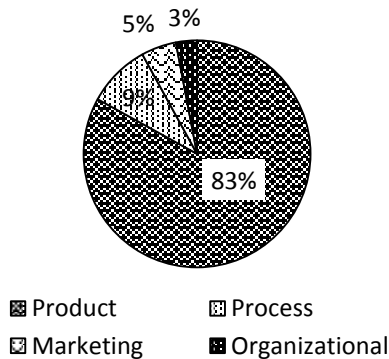


Figure 02. Distribution of innovation types among the firms

The study included 52 floriculture products exporting firms consisted of several firm types engaged in different products of floriculture exports including, ornamental foliage plants, decorative cut foliage, cut flowers and landscaping plants. Majority of these firms were producing ornamental foliage plants and decorative cut foliage for export purposes. Out of four innovation types investigated, product innovations showed the highest percentage (83%) while the lowest (3%) was organizational innovations (Figure 02). Compared with the total number of process, marketing and organizational innovations, the number of product innovations are considerably

high among the firms. This may be due to the fact that, the product innovations contributes to the exportations than the other types of innovations.

Results of the Ordinal Logistic Regression Analysis

The results of Ordinal Logistic Regression (OLR) analysis indicate that, among all the predictor variables, educational qualifications are significantly related to exportation growth (EXG) and the positive coefficient suggests that there is a positive relationship between educational qualifications and exportation growth (Table 01).

Table 01. Results of the OLR analysis (Dependent variable = EXG)

Variable	Coefficient	Probability
AGE	-0.0353	0.239
GEN	0.8175	0.207
EDU	1.0595	0.016*
EXP	-0.0384	0.338
STAR	-0.0735	0.735
SC	-0.5172	0.495
RISK	0.5018	0.265
IN	-0.5810	0.724

**Significant at probability<0.05 level*

Among all the predictor variables, innovativeness is significantly associated with employee growth (EMG) while expressing a negative relationship (Table 02). It may be due to the difficulties of bearing high costs of innovations with the employee growth. The insignificance of all other predictor variables may be due to the fact that, there are more owner characteristics that affect firm performances, than what the study covered.

Table 02. Results of the OLR analysis (Dependent variable = EMG)

Variable	Coefficient	Probability
AG	0.0099	0.785
GE	0.5602	0.439
EQ	0.7974	0.086
FWEY	-0.0643	0.123
NFSA	0.1477	0.343
SC	1.2180	0.161
PFRT	-1.0416	0.074
IN	-6.6200	0.001*

**Significant at probability<0.05 level*

Conclusions and Recommendations

This study revealed that, firm performances of the floriculture exporting firms in Gampaha district are affected by the level of education of the owner/top manager

and the innovativeness of the firm. Since, the floriculture sector is developing as an export oriented industry, owners must have a good knowledge to improve the quality of the products and face the challenges in export market. Therefore, guidance of a well-educated owner/top manager is essential. In order to achieve this target, it is essential to have well organized learning and training mechanism for these firm owners governed by relevant authorities. Therefore, it is recommended that the policy makers and related organizations such as Export Development Board should provide necessary support such as; providing financial assistance, conducting training programs for owners with the priority of creating high firm performances and innovativeness among the floriculture exporters in Sri Lanka.

References

- [1] J. A. Schumpeter. *The Theory of Economic Development*. Cambridge: MA: Harvard University Press. 1934.
- [2] L. Stinchcombe. "Social structure and organizations". In J. G. March (Ed.), *Handbook of organizations* (pp. 142-193). Chicago, Rand McNally. 1965.
- [3] Organization for Economic Co-operation & Development. "The Well-being of nations: The role of human and social capital". Paris: Healey, pp 18. 2001
- [4] W.C. Dunkelberg and A.C. Cooper. "Entrepreneurial Typologies." *Frontiers of Entrepreneurship Research*. Wellesley: Babson College. pp. 1-15. 1982
- [5] P. Wynarczyk, R. Watson, D.J. Storey, H. Short and K. Keasey. *The Managerial Labour Market in Small & Medium Sized Enterprises*, Routledge, London. 1992.