Volume 20 Issue 44
Originally issued as E7



Global Journal of HUMAN-SOCIAL SCIENCE: E Economics
Volume 20 Issue 7 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460x & Print ISSN: 0975-587X

Export Behavior and Propensity to Innovate in Developing Country: The Case of Afghanistan

By Aimal Mirza

Abstract- The paper is aimed at e xamining relation bet ween factors determining export behavior and propensity to innovate to fill Afghanistan specific literature gap. For this purpose, a number of 236 small and medium manufacturing firms were targeted as statistical unit of analysis. Required data were collected through questionnaire distributed to owner/manager of firms. Descriptive statistics as well as multivariate probit regression were utilized to analyze the data. Findings confirmed no significant relationship between export behavior and propensity to innovate. It further suggests that marketing innovation and technological advancement positively and significantly influence export behavior and propensity to innovate. Furthermore, and unlike result of many other similar studies there was insignificant influence of firm size and firm age on propensity to innovation.

Keywords: propensity to innovation, export behavior, firm, technological advancement, marketing innovation.

GJHSS-E Classification: FOR Code: 149999



Strictly as per the compliance and regulations of:



© 2020. Aimal Mirza. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Export Behavior and Propensity to Innovate in Developing Country: The Case of Afghanistan

Aimal Mirza

Abstract- The paper is aimed at examining relation between factors determining export behavior and propensity to innovate to fill Afghanistan specific literature gap. For this purpose, a number of 236 small and medium manufacturing firms were targeted as statistical unit of analysis. Required data were collected through questionnaire distributed to owner/manager of firms. Descriptive statistics as well as multivariate probit regression were utilized to analyze the data. Findings confirmed no significant relationship between export behavior and propensity to innovate. It further suggests that marketing innovation and technological advancement positively and significantly influence export behavior and propensity to innovate. Furthermore, and unlike result of many other similar studies there was insignificant influence of firm size and firm age on propensity to innovation.

Keywords: propensity to innovation, export behavior, firm, technological advancement, marketing innovation.

I. Introduction

The term propensity to innovate refers to firm's willingness and capability to adopt a new ideal (Morris, 2005, Sloan, 2008) from outside (Cannon, 1985, Hansen and Birkinshaw, 2007, Sloan, 2008) at a high level of risk (Dobni, 2006, Sloan, 2008). Whereas, the term export behavior refers to profile of firms with conjunction of their decision to export or not to export (Cavusgil & Tesar, 1979) according to same author when the export objectives characteristics are combined, export profile becomes export behavior (Cavusgil & Tesar, 1979).

Economists mostly agree that export plays important role for any country's development and developing ones in particular. However, according ample studies in export has been less possible without innovation in this era. There are many evidences that proves this assert. Forbes latest ranking of high growth innovative companies is an example to name one of such evidences (Forbes, 2018). According to this ranking majority of the innovative companies are based on a developed country. Therefore, examination of export and innovation at firm level has been an interesting research topic. However, most of studies have been conducted in context of developed countries and there only few ones on same about developing countries. For this purpose, this study attempts to improve our knowledge on relation between export behavior and propensity to in a developing country.

Author: Independent Researcher. e-mail: aimal.mirza@gmail.com

a) Background to Study

There is a debate if Afghanistan is least developed country (LDC) or developing one. According to United Nation Development Program Afghanistan holding fifth least developed country in terms human index development of rank in 2007 improved its positon to 20th in 2019. Furthermore, within same time frame there has been considerable GDP growth and infrastructure development. These positive changes indicate that Afghanistan is developing despite of instability and political unrest.

Earlier the study discussed that export was highly crucial for countries to sustain development, meanwhile we also argued that innovation was one of important element for export. Furthermore, we argued that Afghanistan was developing. These discussion and argument allows as to investigate relationship between both as area of research in this country on the basis of issue that there is a significant deficit in balance of trade in the country. According to figures reported by National Statistics and Information Authority (NSIA, 2020) of Afghanistan, import has been as large as USD 8.5 billion where export has been only 1.7 billion at maximum meaning that import for more outweighs export in this county.

To address the said issue- Afghanistan government recently has focused on promotion of some agro product such as dry and fresh fruit mainly by focusing on these products supply chain. Though there has been some achievement on value chain, analysis of supply chain considering the existing capacity at concerned organization in this county is complex to understand and seems not to bring significant changes. Parallel to this manufacturing industry deserve same attention for its development as experience of many countries indicate that manufacturing has been the prime driver of export development. On the basis of issue, argument and discussion next section proposes problem statement that lays a foundation for conduct of this study.

b) The Problem

As discussed in previous sections it is highly important to address issue of lower export in Afghanistan. This issue lays a foundation for many researches. As the importance of innovation and export was discussed above one of research area is to examine relation between innovation and export in this

© 2020 Global Journals

country. However, at first we need to understand what determine export behavior and propensity to innovate amongst manufacturing firms in Afghanistan. Following research questions narrow down the broad problem and thus remain focus of this study.

i. What determines propensity to innovate amongst Afghanistan based manufacturing firm?
ii. What determines export behaviour/export profile amongst Afghanistan based manufacturing firms?
iii. What is the relationship between innovation and export behaviour in Afghanistan based firms as specified above?

II. Theoretical Background

This section focusses the existing studies two strands. The first strand discusses determinants of export behavior. Sai, Sun and Liu (2018) unravels the effects of export and innovation on firm-level markup and productivity. The findings show that starting to export without innovation has negative affect on firm productivity and markup, while starting to innovate without export has a significant positive impact on productivity and ultimately to export. Radicic (2019) explore the extend in which the potential complementary relation exists between technological persistence innovation, feedback and export. Result suggests positive relation between three with no connection between past product and process innovation to export behavior of firms. Similarly, Azar and Ciabuschi (2017) examines relation between export performance and innovation type. Their study finds out that export enhances radicalness and extensiveness of technological innovation. On the other hand, a study of Crick and Crick (2016) examines on what exist behind a firm export order and marketing innovation concentrating on risk/reward considerations in decision-making. Result of the study suggest that a variety of factors can affect the decision of owner/managers in small firms to start their internationalization path. Decisions are made in the context of perceived risk and reward with conjunction of different opportunities exploitation. Edeh, Obodoechi and Ramos-Hidalgo (2020) in their study explore heterogeneous effect of innovation type on SMEs export performance in developing countries finds out simultaneous technological and non-technological impact of innovation on firms' export performance. Study further finds out that product innovation is negatively related with export performance while process innovation is positively related with same. Lewandowska et al (2016) in their study aim at examining to what extend innovation can influence export confirming need for application of network approach to research on between interrelationships internationalization of the firm and innovation. Similar to this, Oura, Zilber and Lopes (2016) comparing the effect of innovation capacity on export behavior and internationalization experience on export behavior suggests that internationalization has greater effect on export behavior than innovation capacity. Furthermore, Rodil, Vence and Carmen Sanchez (2016) examines the problem that what happens to innovation level of firm when export increases. Finding suggest that marketing innovation is crucial for export enhancement. Similar to this, Tavassoli (2018) analyze role of product innovation on firms' export behavior. Findings suggests output of firm as result of innovation measured by sales has a positive and significant role on firm subsequent export behavior. Result of studies discussed as above point to importance of innovation toward export involving other variables such as internationalization, product quality, owner/manager perceived risk and marketing innovation.

The second strand focus on what determinants of innovation. The research of Shemaiah and Rath (2018) using India's selected manufacturing firms examines the determinants of innovation. Finding is drawn on the basis of panel probit model which uncover that exports and R&D expenditure positively and significantly affect the innovation in case of manufacturing sector. Import intensity, manager's prior experience, and employees training and development at firm level do positively affect the innovation activities. Whereas, firm age and capital intensity negatively affect innovation. Le and Lei (2019) endorses role of training and development in the form of knowledge sharing while examining the differences in transformational leadership's effect on each dimension of innovation capability, namely, product innovation and process innovation. The findings indicate that knowledge sharing mediates transforming leadership effects on innovation capabilities. These findings are further similar to Hues' (2019) study with aims at empirically analysis of innovation decision determinants the result of study indicates that besides firm size, a higher percentage of skilled force representing technological factors and which are based on technological intensive sector to be critical factors of innovation decisions besides. Similarly, Medase, (2020) confirm positive effect of firm size as well as firm age on product innovation. Authors such as Aziz and Samad (2016); Coad (2018) and Pellegrino (2020) emphasize on positive role of firm age on process and product innovation. From the studies discussed above one can realize the importance of variables such as training and development, technology, firm size, firm age and finally product and process quality on innovation.

From the review of literature as document above one understand that innovation can lead to improvement of export behavior. Researches are mostly conducted in developed and European countries in particular. Researches have been generally quantitative and either data were collected through questionnaire or from databases. It further shows that most of researches

© 2020 Global Journals

are in developed countries. This fact leaves the gap of research in context of developing country. Furthermore, country context is a highly worthwhile research topic. As realized so far, no research on the topic has been conducted in Afghanistan. The study attempts to fill this gap by conducting an investigation on Afghanistan based firm to uncover relation between propensity to innovation and export behavior.

a) Conceptual Framework and Model Building

The schematic diagram in figure 2.1 depicts hypothetical relationship model between export behavior, propensity to innovate and factors that determine both. The model theorizes impact of technological advancement, training and development, firm size and age and finally process innovation on propensity to innovate. Whereas, exposure to internationalization, marketing innovation, product quality and quantity and owner/manager risk-taking behavior assumedly impacts export behavior. We further assume relation between propensity to innovate and export behavior.

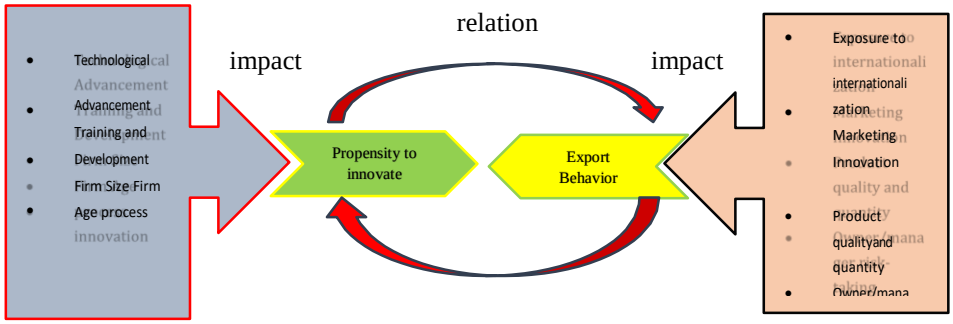


Figure 2.1: Conceptual framework

In the light of above schematic diagram the mathematical expression of given relationship is presented below.

$$ExpBeh = \propto + \beta_1 ExpInl + \beta_2 MInnov + \beta_3 MgrRTB + \beta_4 ProdQntQlt + \varepsilon \quad (1)$$

$$PropInnov = \propto + \beta_1 TAdv + \beta_2 T\&D + \beta_3 FSize + \beta_4 FAge + \beta_4 PrInnov + \varepsilon \quad (2)$$

Constructs such as ExpBeh, PropInnov and etc. represents variables which will discussed in greater details in section to come. Based on above concept author formulate following hypothesis(s):

H1: Exposure to internationalization significantly influence export behavior.

H2: Marking innovation significantly influence export behavior.

H3: Owner/manager risk-taking behavior significantly influence export behavior.

H4: Product quality and quantity significantly influence export behavior.

H5: Technological advancement significantly influence propensity to innovate.

H6: Training and development significantly influence propensity to innovate.

H7: Firm size significantly influence propensity to innovate.

H8: Firm age significantly influence propensity to innovate.

H9: Process innovation significantly influence propensity to innovate.

H10: There is a positive relation between export behavior and propensity to innovate.

III. Methodology

In order to address the defined research questions author applied quantitate method due to the large population size whereby qualitative study was practically impossible. Data were collected through data collection tool structured in light of available literature and conceptual model as shown in figure 2.1. Table 3.1. explains how variables were measured in questions/ statement included in data collection instrument on dichotomous scale i.e. Yes/No where 1 was assigned to "Yes" and 0 was assigned to "No" and values such as investment and expenditure. Study targeted a number of 236 manufacturing firms located in three major cities of Afghanistan (Kabul, Herat and Jalalabad) and questionnaires were distributed key person in firm (i.e. either owner/manager).

© 2020 Global Journals

Table 3.1: Data collection instrument and variables measurement

Measure	Scale	Dependent Variable	Predicator	Constructs
Firm Exports	Dichotomous	Export Behavior		***ExpBeh***
Growth in sales as result of product/process improvement, technological advancement and training & development	Dichotomous	Propensity to Innovate		***PropInnov***
Firm exposure to Internationalization (Fair, exhibition, Owner/manager business trips)	AFN thousand		Exposure to Internationalization	***ExpInt'l***
Table continues to next page				
Is manager/owner risk averse?	Dichotomous		owner/manager risk-taking behavior	***MgrRTB***
Did firm approach for marketing lead to change product or production process?	Dichotomous		Marketing Innovation	***MInnov***
Has there been changes in quantity and quality of product based on customer demand?	Dichotomous		Product quality and quantity improvement technological	***ProdQntQlt***
Firm's additional investment on machinery and any other technology after initial outlay.	AFN Million		advancement	***TAdv***
Firm's expenditure on technical and personal development training	AFN thousand		Training and Development	***TD***
Change in production process as because of improvement in product quality and quantity or vice versa?	Dichotomous		Process innovation	***ProInnov***
total value of firms fixed asset (Machinery)	AFN Million		Firm Size	***FSize***
Number of years since firm's establishment.	Number of Years		Firm Age	***FAge***

Since the required data was a combination of amount and binary values Author utilized descriptive statistics as well as multivariate probit regression to analyze the data. A description/specification of multivariate probit model is presented below.

$$\boldsymbol{y_{ij} = \mathbf{X}_i\boldsymbol{\beta_j} + \boldsymbol{u_{ij}}} \quad (1)$$

$$\boldsymbol{y_{ij} = \mathbf{1}(y_{ij} > \mathbf{0})} \quad (2)$$

$$\boldsymbol{u_i = [u_{i1}, \ldots, u_{iM}] \approx \mathbf{MVN}\,(O, R)\ \mathbf{or}\ y_i = [y_{i1}, \ldots, y_{iN}] \approx \mathbf{MVN}(\mathbf{X_i B}, \mathbf{R})} \quad (3)$$

© 2020 Global Journals

where $i=1,...,N$ indicates observations, $j=1,...,M$ indicates outcomes, Xi is a K-vector of exogenous covariates, the ui are assumed to be independent across i but correlated across j for any i, and "MVN" denotes the multivariate normal distribution.

IV. Results and Findings

Findings based on descriptive statistics (table 4.1) shows AFN 532,000 and AFN 474,000 on average basis and firms expenditure gain exposure to internationalization and train their labor force respectively. These amount respectively to equivalent USD 7000 and USD 6000 approximately[1], which are considerable in view of firms size and age. Similarly, average size of firms has been AFN 6.2 million equivalent to USD 80,000 with an average age of 11. This indicates that half of manufacturing firms are medium in size according to SME definition of Afghan Ministry of commerce and industry. The age figure indicates that firms are still young.

Table 4.1: Data descriptive information

		N	Minimum	Maximum	Mean	Std. Dev
Covariate	Exposure to Internationalization	236	0.00	994.00	531.59	286.56
	Manager/Owner Risk Taking Behavior	236	0.00	1.00	0.54	0.50
	Marketing Innovation	236	0.00	1.00	0.50	0.50
	Product Quantity and Quality	236	0.00	1.00	0.56	0.50
	Technological Advancement	236	0.00	1.00	0.49	0.50
	Training and Development	236	0.00	991.00	474.42	296.45
	Process Innovation	236	0.00	1.00	0.55	0.50
	Firm Size	236	2528.00	9,957.00	6281.28	2079.41
	Firm Age	236	1.00	20.00	10.72	5.99

Similarly, to descriptive statistic a percentage analysis of variables (table 4.2) indicates that majority of owner/mangers were risk-takers. Effect of marketing innovation on product and process development is equally likely. Majority of improvement in product quality and quantity has been based on customers' demand. And finally a large percentage of is due to product quantity and quality improvement which is further result of customer demand.

[1] Author utilized Afghanistan central bank's (known as Da Afghanistan Bank) AFS/USD mid-rate as of July 25, 2020

© 2020 Global Journals

Table 4.2: Predicators percentage analysis

	Risk Averse	Risk taker	Total
Managers risk taking behavior	109	127	236
	46%	54%	100%
Marketing Innovation	led to product and Process innovation	did not lead to Product and process Innovation	
	118	118	236
	50%	50%	1
Product quality and quantity	as result of customer demand		
	Yes	No	
	132	104	236
	56%	44%	100%
process innovation	As result of improvement in product quantity and quality		
	Yes	No	
	130	106	236
	55%	45%	100%

Probit regression analysis (table 4.3) result shows that majority i.e. 53% of manufacturing firms were not involved in export. Finding further suggests that marketing innovation had higher impact (i.e. sig = 0.045 and coef =0.536) on export behavior whereas, rest of variables had insignificance influence on same.

Table 4.3: Probit regression on export behavior

Probit Regression	Export Behavior			
			Total	number ofobservation
	Yes	No		
	112	124	236	
	47.5%	52.5%	100.0%	
log likelihood	321.36			
Nagal Kerke R Square	0.029			
	Coef.	St.Er	Sig	Exp(B)
Exposure to Internationalization	- 0.000	0.000	0.754	1.000
Owner/Manager Risk-taking Behavior	0.130	0.267	0.627	1.139
Marketing Innovation	0.536	0.267	0.045	1.708
Product Quantity and Quality	- 0.197	0.267	0.462	0.822

Similarly, probit regression of propensity to innovation (table 4.4) indicates that technological advancement has significant and positive influence over propensity to innovate (i.e. sig=0.011 and coef= 0.6884). however, other variable defined has insignificant effect on same.

© 2020 Global Journals

Table 4.4: Probit regression on propensity to innovate

Logistic Regression	Propensity to innovate			
	Yes	No	observation	
	112	124	236	
	47.5%	52.5%	100.0%	
log likelihood	318.93			
Nagal Kerke R Square	0.042			
	Coef.	St.Er	Sig	Exp(B)
Technological Advancement	0.684	0.270	0.011	0.504
Training & Development	0.000	0.000	0.642	1.000
Process Innovation	0.330	0.274	0.229	1.391
Firm Size	0.000	0.000	0.634	1.000
Firm Age	- 0.003	0.022	0.883	0.997

A partial correlation analysis (table 4.5) between export behavior and propensity to innovate indicates negative yet very insignificant relationship between two. In this analysis all predicators included in model remained control variables.

Table 4.5: Partial correlation between explained variable

Control Variables			Export Behavior	Propensity to Innovation
1. Exposure to Internationalization	Export Behavior	Correlation	1.000	-0.038
2. Manager/Owner Risk Taking Behaviour		Significance (2-tailed)	.	0.572
3. Marketing Innovation				Table continues
4. Product Quantity and Quality				
5. Technological Advancement		df	0	225
6. Training and Development	Propensity to Innovation	Correlation	-0.038	1.000
7. Process Innovation		Significance (2-tailed)	0.572	.
8. Firm Size				
9. Firm Ag		df	225	0

V. Discussion

Finding of data analysis is both surprising and interesting. It is surprising in a sense that most of important variables across literature were insignificant and interesting in a sense that innovation is less dependent to firm size and age. Therefore, leading to substantiating only hypothesis(s) 2 and 5. The findings lead to answer research questions one that marketing innovation explains export behavior. Answer to question number two asserts that technological advancement defines propensity to innovate and finally there is no relation between two. However, these findings are prone to some limitation such as higher log likelihood and insignificant R square. Due to nature of data (mixture of amounts and binary values) study applied multivariate probit regression nonetheless, descriptive statistics and predictors percentage analysis seem to be more reliable on the basis which risk-taking behavior managers/ owners, process innovation, product quality are more worthwhile for further examination and attention.

Apart from positive effect of marketing innovation and technological advancement on explained variables which agrees with findings of authors such as Crick and Crick (2016); Rodil, Vence and Carmen Sanchez (2016) and Hue (2019 the rest of findings (i.e. insignificant effect of other variable on explained variables) contradicts with majority of previous studies, which adds more to our surprise.

© 2020 Global Journals

As policy implication this study suggest the government should not overlook quality control of product that may lead to process innovation as product improvement has been highly emphasized upon through research studies over the world. Besides, technological advancement- managerial implication of this study include attention to training and development which may positively affect product innovation through process improvement that ultimately leads to higher innovation.

References Références Referencias

1. Abd Aziz, Nurul Nadia, and Sarminah Samad. "Innovation and competitive advantage: Moderating effects of firm age in foods manufacturing SMEs in Malaysia." Procedia Economics and Finance 35, no. 2016 (2016): 256-266.
2. Ardito, L., Petruzzelli, A.M. and Albino, V., 2019. The influence of alliance ambidexterity on innovation performance and the moderating role of firm age. IEEE Transactions on Engineering Management.
3. HA, S., Jeong, Y.S. and Park, H.H., 2016. A Transaction Cost Approach to Analysis on Determinants of Korean SMEs' Transformation into Direct Export. International Commerce and Information Review, 18(3), pp.181-201.
4. Coad, A., Segarra, A. and Teruel, M., 2016. Innovation and firm growth: Does firm age play a role?. Research policy, 45(2), pp.387-400.
5. Coad, A., 2018. Firm age: a survey. Journal of Evolutionary Economics, 28(1), pp.13-43.
6. Crick, D. and Crick, J., 2016. The first export order: A marketing innovation revisited. Journal of Strategic Marketing, 24(2), pp.77-89.
7. HA, S., Jeong, Y.S. and Park, H.H., 2016. A Transaction Cost Approach to Analysis on Determinants of Korean SMEs' Transformation into Direct Export. International Commerce and Information Review, 18(3), pp.181-201.
8. Dai, X., Sun, Z. and Liu, H., 2018. Disentangling the effects of endogenous export and innovation on the performance of Chinese manufacturing firms. China Economic Review, 50, pp.42-58.
9. Edeh, J.N., Obodoechi, D.N. and Ramos-Hidalgo, E., 2020. Effects of innovation strategies on export performance: New empirical evidence from developing market firms. Technological Forecasting and Social Change, 158, p.120167.
10. Hue, T.T., 2019. The determinants of innovation in Vietnamese manufacturing firms: an empirical analysis using a technology–organization–environment framework. Eurasian Business Review, 9 (3), pp.247-267.
11. Hao, L., Qiu, B. and Cervantes, L., 2016. Does Firms' Innovation Promote Export Growth Sustainably?—Evidence from Chinese Manufacturing Firms. Sustainability, 8(11), p.1173.
12. Le, P.B. and Lei, H., 2019. Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support. Journal of knowledge management.
13. Lewandowska, M.S., Szymura-Tyc, M. and Gołębiowski, T., 2016. Innovation complementarity, cooperation partners, and new product export: Evidence from Poland. Journal of Business Research, 69(9), pp.3673-3681.
14. Medase, S.K., 2020. Product innovation and employees' slack time. The moderating role of firm age & size. Journal of Innovation & Knowledge, 5(3), pp.151-174.
15. Oura, M.M., Zilber, S.N. and Lopes, E.L., 2016. Innovation capacity, international experience and export performance of SMEs in Brazil. International Business Review, 25(4), pp.921-932.
16. Pellegrino, G. and Piva, M., 2020. Innovation, industry and firm age: are there new knowledge production functions?. Eurasian Business Review, 10(1), pp.65-95.
17. Ribau, C.P., Moreira, A.C. and Raposo, M., 2017. SMEs innovation capabilities and export performance: an entrepreneurial orientation view. Journal of Business Economics and Management, 18(5), pp.920-934.
18. Rodil, Ó., Vence, X. and del Carmen Sánchez, M., 2016. The relationship between innovation and export behaviour: The case of Galician firms. Technological Forecasting and Social Change, 113, pp.248-265.
19. Seenaiah, K. and Rath, B.N., 2018. Determinants of innovation in selected manufacturing firms in India: Role of R&D and exports. Science, Technology and Society, 23(1), pp.65-84.
20. Sikharulidze, D. and Kikutadze, V., 2017. Innovation and export competitiveness: evidence from georgia firms. European Journal of Economics and Business Studies, 3(2), pp.131-137.
21. Tavassoli, S., 2018. The role of product innovation on export behavior of firms. European Journal of Innovation Management.
22. Zhang, J. and Zhu, M., 2016. Market orientation, product innovation and export performance: evidence from Chinese manufacturers. Journal of Strategic Marketing, 24(5), pp.377-397.

© 2020 Global Journals