

The role of new product development on export market share

Naser Azad*, Seyed Foad Zarifi and Seyed Mohsen Seyed Aliakbar

Department of Management, Islamic Azad University, South Tehran Branch, Tehran, Iran, Iran

CHRONICLE

ABSTRACT

Article history:

Received May 12, 2013

Accepted June 22, 2013

Available online

July 9 2013

Keywords:

Product development

Market share

Export market

There is an ongoing change on customers' needs on selecting customers' needs, which may influence requirements on designing products and services as well as export sale and company's market shares in domestic and international market. In the present study, through descriptive approach with qualitative method and case study, we investigate important key factors influencing on new product development and products' successive factors at overseas nutritional market. In addition by presenting a new model in accordance with the present condition of the organization we explore the closest product development model and affective factors influencing them. The study investigates 36 factors and extracts six important ones, which influence product development including intelligent information, process research and development, strategy introduced, participation strategy, market survey and differentiation strategy.

© 2013 Growing Science Ltd. All rights reserved.

1. Introduction

Product development means manipulating one of the strategies to improve or to reform products and present services to promote their sale balance and market share. Products development itself requires large amount of expenditures in research and development region (David, 1989). Considering consumers' price sensitivity, companies need to be creative and innovative enough for their sale market and encourage others to cooperate in development field. In most of productive activities; product development has a particular place. New products provide new growing opportunities and rivalry advantages for companies. Nowadays company's survival is held hostage to new development tendency and applying appropriate methods for them. Growing importance of new product development in occupation and company's attention toward new products' nature has led to a wide range of research in management knowledge (Pitta et al. 2012). These days, we see a strong and competitive market where firms are constantly under pressure to reduce their prices (Andersen & Munksgaard, 2009).

* Corresponding author.

E-mail addresses: dr.naserazad@yahoo.com (N. Azad)

Many consumers try to find appropriate products, which would meet their requirements and cultural characteristics and companies, on the other side, look for a model to enable the customers to cooperate in development plan too. In fact, they first look at what market is looking for and then they try to extract new ideas. By analyzing the ideas and achieved information the required product plan of both customers and markets is outlined and the process of designing a special model is assigned (Shamsuzzoha et al., 2009). Thus, customers could be involved in developmental affairs and offer different kinds of products to producers as a new product (Munksgaard et al., 2011).

In the modern nutrition market in which customers are extremely attentive on products' quality, improving qualitative guideline is considered to raise company's profit and market share. Besides, since consumers are sensitive to goods' price, assigning a reasonable price is a key element to raise company's product demands. On the other hand, demand's growth in high quality products lead firms to produce products in accordance with consumers' need. This process, of course, concludes all procedures as designing, ordering, producing, selling, even distributing and finally receiving the products by a potential consumer. Wrapping up all these would make progress in securing consumers' welfare (Andersen & Munksgaard, 2009).

It should be noticed that companies could guarantee the succession of product development plan through affective coordination of all their employees in various regions, because this accelerates the process of development and product's entrance to the market in the shortest possible time. This fast pace itself leads to the victory of the plan. In fact, in addition to personnel coordination, succession is achieved when the company affectively coordinates and merges its entire interior-structure units like marketing, production, R & D and purchases. Units should meddle in all development process according to their proficiency; then the buyers' required goods are designed and sent to the market. Thus, interior coordination could be considered as an element to achieve the development plan (Lau et al., 2011). Besides, companies could eliminate their interior weaknesses by merging with other companies or consulting with veteran experts. Even in some cases that they're not strong enough to encounter the issue or there is no necessity to be involved, they could refer to outsourcing and gain credibility and prominence which are led to faster innovation and timely superiority in the market (Swan & Pitta, 2010).

Of course, two elements could be considered as failure elements of product development plan. First, the length time dedicated to financial and human resources to diagnose customers' need, supply goods and support materials is expensive and they could be considered as a decelerator in continuum of the development process (Lau et al., 2011). The second failure element is the long process of development that could make the customers loses their current anticipation to the good produced by development plan.

In this paper, we present an empirical investigation to find important factors influencing product development on food industry. The organization of this paper first present details of influencing factors in section 2 while section 3 presents details of our results and concluding remarks are given in the last section to summarize the contribution of this paper.

2. The proposed model

Based on previous literature, the variables affecting the export market focus. These variables used in the study are listed in Table 1. As we can observe from the results of Table 1, there are 37 factors influencing the market development in food industry. We have tried to collect all these items from various resources so that it would present a comprehensive collection of all possible criteria influencing market development.

Table 1
Research variable

Row	Criteria	Reference
1	Using writings Market	Miguel, 2007
2	Creating a Competitive Advantage	Munksgaard et al., 2012
3	Customers' needs and aspirations	Pitta, & Pitta, 2012
4	Implementing product development processes	Hong et al., 2009
5	Opportunities to use technology	Cheng & Shiu, 2008
6	Expert knowledge in product innovation	Miguel, 2007
7	Internal strengths	Miguel, 2007
8	Partnership with foreign companies	Svendsen et al., 2011
9	Market space created by the company	Lee, 2008
10	Find new market space	Akgün et al., 2007
11	Level of ICT	Lee, 2008
12	Brand	Prašnikar & Škerlj, 2006
13	Consumer buying behavior	Sun & Wing, 2005
14	Reduce product delivery time	Miguel, 2007
15	Flexibility in product design and development	Pitta & Pitta, 2012
16	Using triggers sales	Miguel, 2007
17	Customers understand the products of competitors	Miguel, 2007
18	Customers involved in product development	Lau, 2010
19	Corporate reputation	Miguel, 2007
20	Inter-agency coordination	Pitta & Pitta, 2012
21	Customer-oriented approach in innovation	Hong et al., 2009
22	A scenario Sale	Miguel, 2007
23	Product development data	Pitta & Pitta, 2012
24	Increased requirements	Lau, 2010
25	Participation in product design	Hong et al., 2009
26	Inventory management, sales	Miguel, 2007
27	Technological change	Lau, 2010
28	Shortening the product development time	Pitta & Pitta, 2012

2.1 Data collection and sample

The present study employs a questionnaire survey approach to collect data for testing the research hypotheses. The statistical population in this study includes manufacturers and exporters of food industry. In this study, method of sampling is simple random sampling. Among the exporters and manufacturers, the study selected 214 people randomly and questionnaires were given. To analyze the data, descriptive statistics were used to sort the data in the second part of the data analysis is performed based on statistical inference. In this paper, for analyzing the data we use LISREL and AMOS software packages.

2.2. Assessing reliability

The reliability of the measurements in the survey was tested using Cronbach's α . Hair et al. (1998) stated that a value of 0.70 and higher is often "considered the criterion for internally consistent established factors". The Cronbach's α coefficients in parentheses indicating the internal consistency reliability of the measures ($\alpha = 0.899$).

3. Analysis and results

The proposed study designs a questionnaire and distributes it among 263 experts. Cronbach alpha is calculated as 0.89, which is well above the minimum desirable limit of 0.70. In this study, Cronbach alpha has been calculated as 0.899 and Table 2 demonstrates the results.

Table 2
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.899	0.90	40

In addition, Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.77 (Approx. Chi-Square= 4522.552 df=630 Sig.= 0.000), which also confirms the results of our survey. Table3 demonstrates the results.

Table 3
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.77
Bartlett's Test of Sphericity	Approx. Chi-Square	4522.552
	Df	630
	Sig.	0.000

In this section, research data using scientific methods are investigated and they are analyzed in two parts. First, descriptive statistics are used to sort the data and then part of the data analysis is performed based on statistical inference. Factor analysis and structural equation analysis of the presumptive test was used and the primary question is to find out about important factors influencing product development and regulation of export market share. To answer the first question the exploratory factor analysis has been used. Table 4 and 5 present the results of analyzing the data.

Table 4
Descriptive Statistics

	N	Range	Min	Max	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
The growing demand for customized products	263	3	2	5	-.439	.150	-.424	.299
Price sensitivity	263	4	1	5	-.791	.150	.239	.299
Using modern technology	263	3	2	5	-.976	.150	.350	.299
Using writings Market	263	3	2	5	-.567	.150	-.659	.299
Creating a Competitive Advantage	263	3	2	5	-.419	.150	-.376	.299
Customers' needs and aspirations	263	4	1	5	-.867	.150	.353	.299
Market constraints	263	4	1	5	-.321	.150	-.674	.299
Implementing NPD processes	263	3	2	5	-.237	.150	-.690	.299
emotional needs of the consumer	263	4	1	5	-.232	.150	-.586	.299
Opportunities to use technology	263	3	2	5	-.514	.150	-.602	.299
Between buyer and seller	263	4	1	5	-.595	.150	.099	.299
Expert knowledge in product innovation	263	4	1	5	-.819	.150	.133	.299
Internal strengths	263	4	1	5	-.438	.150	-.133	.299
Partnership with foreign companies	263	4	1	5	-.255	.150	-.712	.299
Given the competing prices	263	3	2	5	-.528	.150	-.505	.299
Market space created by the company	263	4	1	5	-.366	.150	.387	.299
Exclusive Services	263	3	2	5	-.377	.150	-.952	.299
Find new market space	263	4	1	5	-.634	.150	.821	.299
Fashion Market	263	3	2	5	-.256	.150	-.952	.299
Level of ICT	263	3	2	5	-.601	.150	-.717	.299
Offer new product ideas	263	3	2	5	-.845	.150	.495	.299
Brand	263	4	1	5	-.375	.150	-.614	.299
Consumer buying behavior	263	3	2	5	.259	.150	-.532	.299
Reduce product delivery time	263	4	1	5	-.500	.150	.390	.299
Flexibility in product design and development	263	4	1	5	-.340	.150	-.530	.299
Using triggers sales	263	4	1	5	-.137	.150	-.919	.299
Banners and ads	263	4	1	5	-.911	.150	.369	.299
Customers understand the products of competitors	263	3	2	5	-.035	.150	-.606	.299
Customers involved in product development	263	4	1	5	.114	.150	-.294	.299
Corporate reputation	263	4	1	5	-.840	.150	-.009	.299
Inter-agency coordination	263	4	1	5	-.170	.150	-.485	.299
Customer-oriented approach in innovation	263	4	1	5	-.446	.150	-.637	.299
A scenario Sale	263	4	1	5	-.619	.150	-.045	.299
Product development data	263	4	1	5	-.235	.150	-.536	.299
Increased requirements	263	4	1	5	-.311	.150	-.146	.299
Competitive pressures	263	4	1	5	-.290	.150	-.402	.299
Participation in product design	263	4	1	5	-.081	.150	-.669	.299
Inventory management, sales	263	4	1	5	-.236	.150	-.611	.299
Technological change	263	4	1	5	-.250	.150	-.650	.299
Shortening the product development time	263	4	1	5	-.759	.150	-.331	.299
Valid N (listwise)	263							

Table 5
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.906	24.739	24.739	8.906	24.739	24.739	3.701
2	2.632	7.311	32.050	2.632	7.311	32.050	2.579
3	2.081	5.781	37.831	2.081	5.781	37.831	2.554
4	1.998	5.549	43.380	1.998	5.549	43.380	2.491
5	1.879	5.220	48.601	1.879	5.220	48.601	2.395
6	1.583	4.396	52.997	1.583	4.396	52.997	2.242
7	1.461	4.058	57.054	1.461	4.058	57.054	2.099
8	1.289	3.581	60.636	1.289	3.581	60.636	1.910
9	1.159	3.220	63.855	1.159	3.220	63.855	1.756
10	1.088	3.022	66.878	1.088	3.022	66.878	1.712
11	1.033	2.868	69.746	1.033	2.868	69.746	1.670
12	.917	2.547	72.293				
13	.840	2.334	74.627				
14	.784	2.177	76.804				
15	.707	1.963	78.767				
16	.682	1.896	80.662				
17	.670	1.861	82.524				
18	.644	1.789	84.313				
19	.592	1.644	85.957				
20	.558	1.549	87.506				
21	.504	1.401	88.907				
22	.453	1.259	90.166				
23	.419	1.164	91.330				
24	.355	.985	92.315				
25	.338	.939	93.254				
26	.315	.874	94.127				
27	.297	.826	94.953				
28	.288	.801	95.754				
29	.259	.721	96.475				
30	.240	.666	97.141				
31	.224	.622	97.763				
32	.196	.545	98.308				
33	.173	.481	98.788				
34	.158	.440	99.228				
35	.150	.416	99.645				
36	.128	.355	100.000				

Extraction Method: Principal Component Analysis.

Fig. 1 demonstrates Eigenvalues for each factor and a special agent with the highest value indicates that after six factors, the curve becomes smooth and we choose six factors for the proposed study.

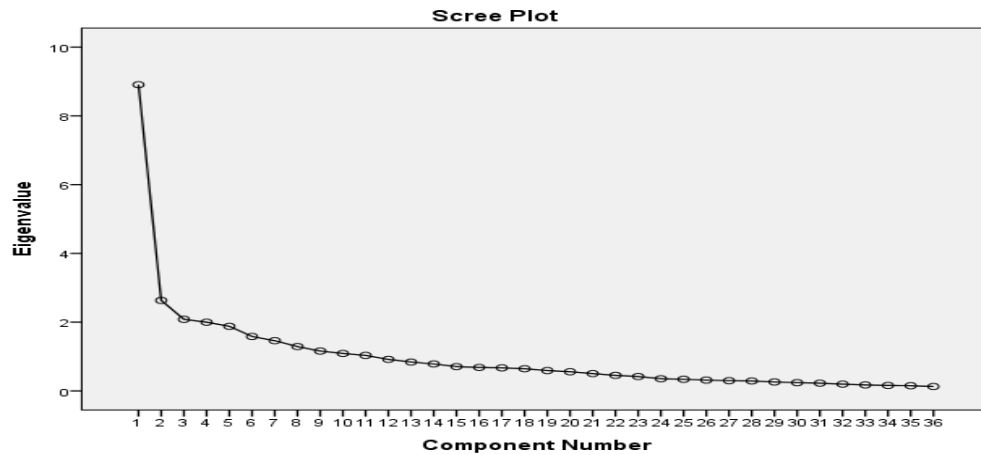


Fig. 1. Scree plot

Table 6 demonstrates the results of component matrix on eleven factors, before and after varimax rotation.

Note that extraction method in Table 7 was based on Principal Component Analysis. Rotation Method, Varimax with Kaiser Normalization and rotation converged in 11 iterations. The proposed study determined six important factors influencing product development including partnership, Intelligence Information, introducing Strategy, differentiating Strategy, Process research and development and market survey strategies. The results of the implementation of factor analysis have provided six factors, which are explained next.

3.1. Interpretation of the results of the factor analysis

Table 9
The summary of the results of non-standard model

	Indexes	Important coefficient	P-value	Result
Partnership Strategy	Participation in product design	0.56	<0.001	Accept
	Customers understand the products of competitors	0.39	<0.001	Accept
	Customers involved in product development	0.61	<0.001	Accept
	Inter-agency coordination	0.40	<0.001	Accept
	Customer-oriented approach in innovation	0.59	<0.001	Accept
	Transmission change and product development	0.27	<0.001	Accept
Intelligence Information	Implementing product development processes	0.57	<0.001	Accept
	Internal strengths	0.43	<0.001	Accept
	Expert knowledge in product innovation	0.34	<0.001	Accept
	Level of ICT	0.42	<0.001	Accept
	Using Market Studies	0.37	<0.001	Accept
introducing Strategy	A scenario Sale	0.38	<0.001	Accept
	Brand	0.24	<0.001	Accept
	Consumer buying behavior	0.46	<0.001	Accept
	Market space created by the company	0.61	<0.001	Accept
	Inventory management, sales	0.40	<0.001	Accept
	Increase the requirements in product development	0.70	<0.001	Accept
	Shortening the product development time	0.55	<0.001	Accept
Reduce product delivery time	0.50	<0.001	Accept	
Market Survey	Customer needs	0.56	<0.001	Accept
	Using technology opportunities	0.53	<0.001	Accept
	Find new market space	0.68	<0.001	Accept

In addition, the results of our test does not confirm the effects for five variables including Partnership with foreign companies, Flexibility in product design and development, Corporate reputation, Technological change and Using triggers sales.

4. Discussion and conclusions

Regarding the results of first question, we can offer 6 hypotheses that identified by exploratory factor analysis and by the Confirmatory factor analysis they reject and accept of and ranking of each of the components of Export market share. Table 10 shows details of our findings on six variables.

Table 10
The summary of six important factors

The main hypothesis	P	Estimate	Result
Intelligent Information	P<0.001	2.379	Accept
Process Research and Development	P<0.001	2.068	Accept
Strategy introduced	P<0.001	1.839	Accept
Participation Strategy	P<0.001	1.000	Accept
Market Survey	P<0.001	1.471	Accept
Differentiation strategy	0.615	0.005	Reject

Fig. 2 shows details of the relationship among various components in standard form.

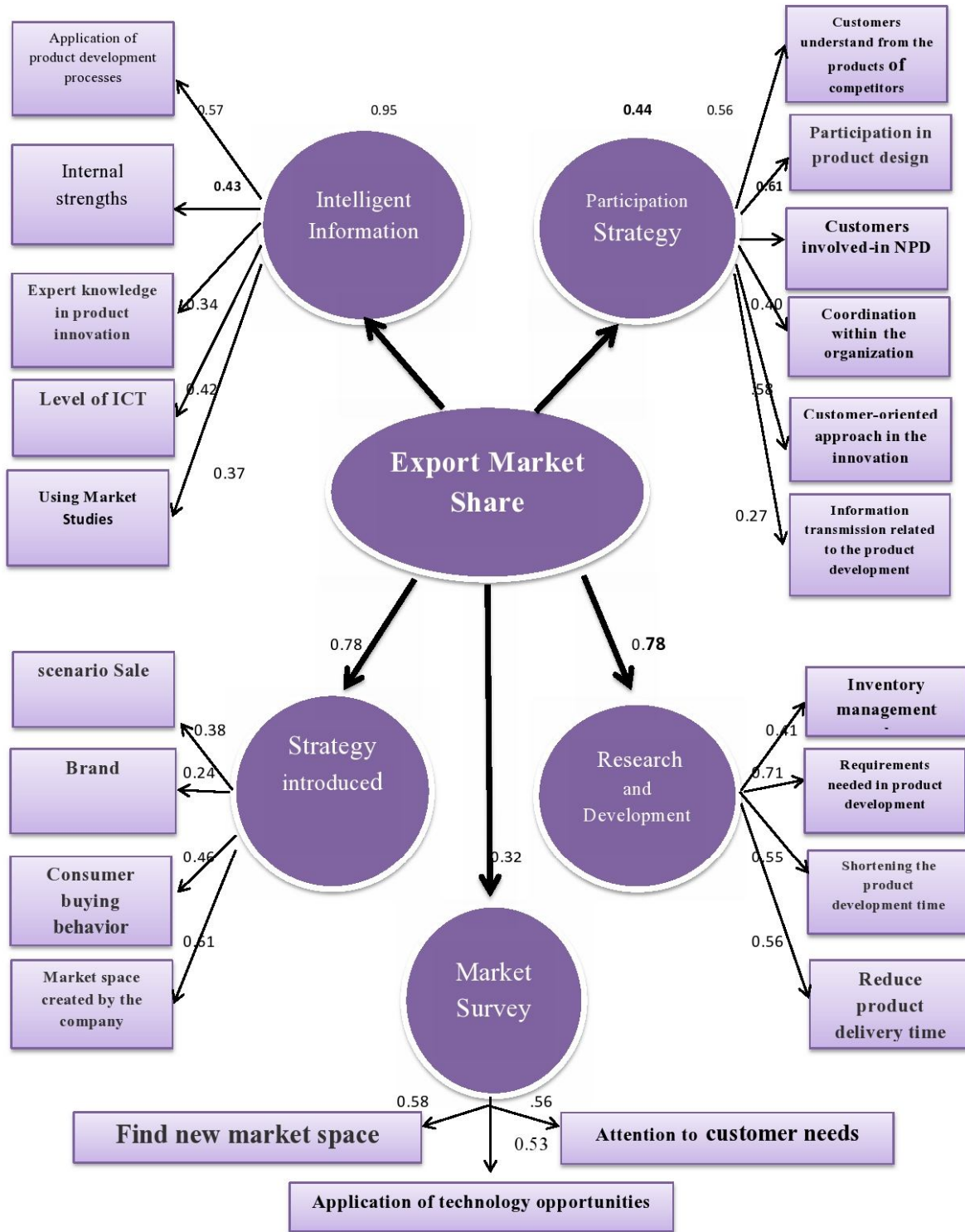


Fig. 2. The results of survey in standard form

Based on the results of confirmatory factor analysis, the importance of each factor on Export market share are summarized in Table 11 as follows,

Table 11
The results of confirmatory factor analysis

Factor	Important coefficient
Intelligence Information	.98
Process Research and Development	.89
Introducing Strategy	.88
Partnership Strategy	.67
Market Survey	.56

References

- Akgün, A. E., Byrne, J. C., Lynn, G. S., & Keskin, H. (2007). Team stressors, management support, and project and process outcomes in new product development projects. *Technovation*, 27(10), 628-639.
- Andersen, P. H., & Munksgaard, K. B. (2009). Collaborative product development and situated knowledge contexts: the case of non-durable food products. *European Journal of Innovation Management*, 12(2), 200-222.
- Cheng, C. C. J., & Shiu, E. C. (2008). Critical success factors of new product development in Taiwan's electronics industry. *Asia Pacific Journal of Marketing and Logistics*, 20(2), 174-189.
- Darawong, C., & Igel, B. (2012). Acculturation of local new product development team members in MNC subsidiaries in Thailand. *Asia Pacific Journal of Marketing and Logistics*, 24(3), 351-371.
- Danese, P., & Filippini, R. (2010). Modularity and the impact on new product development time performance: Investigating the moderating effects of supplier involvement and interfunctional integration. *International Journal of Operations & Production Management*, 30(11), 1191-1209.
- David, F. R. (1989). How companies define their mission. *Long range planning*, 22(1), 90-97.
- Hair, J.F., Anderson, R.E., Tatham, R.L., and Black, W.C. (1998). *Multivariate Data Analysis*. 5th ed., Englewood Cliffs, NJ: Prentice Hall.
- Hong, Y., Pearson, J. N., & Carr, A. S. (2009). A typology of coordination strategy in multi-organizational product development. *International Journal of Operations & Production Management*, 29(10), 1000-1024.
- Lau, A. K., Tang, E., & Yam, R. (2010). Effects of supplier and customer integration on product innovation and performance: empirical evidence in Hong Kong manufacturers. *Journal of Product Innovation Management*, 27(5), 761-777.
- Lee, L. T. S. (2008). The effects of team reflexivity and innovativeness on new product development performance. *Industrial Management & Data Systems*, 108(4), 548-569.
- Meybodi, M. Z. (2013). The links between lean manufacturing practices and concurrent engineering method of new product development: An empirical study. *Benchmarking: An International Journal*, 20(3), 362-376.
- Miguel, P. A. C. (2007). Innovative new product development: a study of selected QFD case studies. *The TQM Magazine*, 19(6), 617-625.
- Munksgaard, K. B., & Freytag, P. V. (2011). Complement or involvement in product development. *Journal of Business & Industrial Marketing*, 26(4), 286-298.
- Munksgaard, K. B., Clarke, A. H., Storvang, P., & Erichsen, P. G. (2012). Product development with multiple partners: Strategies and conflicts in networks. *Industrial Marketing Management*, 41(3), 438-447.
- Pitta, D., & Pitta, E. (2012). Transforming the nature and scope of new product development. *Journal of Product & Brand Management*, 21(1), 35-46.
- Prašnikar, J., & Škerlj, T. (2006). New product development process and time-to-market in the generic pharmaceutical industry. *Industrial Marketing Management*, 35(6), 690-702.

- Richtnér, A., & Åhlström, P. (2010). Top management control and knowledge creation in new product development. *International Journal of Operations & Production Management*, 30(10), 1006-1031.
- Shamsuzzoha, A., Kyllönen, S., & Helo, P. (2009). Collaborative customized product development framework. *Industrial Management & Data Systems*, 109(5), 718-735.
- Svendsen, M. F., Haugland, S. A., Grønhaug, K., & Hammervoll, T. (2011). Marketing strategy and customer involvement in product development. *European Journal of Marketing*, 45(4), 513-530.
- Swan, H., & Pitta, D. (2010). The ultimate in new product design: molding the product concept to user learning needs. *Journal of Product & Brand Management*, 19(4), 286-294.
- Sun, H., & Wing, W. C. (2005). Critical success factors for new product development in the Hong Kong toy industry. *Technovation*, 25(3), 293-303.