Research Article
Explore Critical Success Factors of New Product Development in Iranian's Food Industry

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Abstract: In recent decades, the rate of new product development increased due to the burst of competition between organizations in developing new products, services and new markets. In such a competitive condition, the main challenge of organizations is to develop new products according to the goals of the organization and needs of customers. Therefore, this study tries to propose success factors in new product development for food industry based on a model developed using a mixed method. The preliminary model is proposed by reviewing related literature in innovation management and product development and also using semi-structured interviews with executive managers of food industry. Then using exploratory and confirmatory factor analysis, the validity of the model and final scales were analyzed. The results show that Strategic Thinking (ST), Product Features (PF), Skills and Abilities (SA), internal and external Team Involvement (TI), Supply Chain ability (SC), Development Process (DP) have a correlation with the success of new product development in food industries of Iran. Among these dimensions, Market Characteristic (MC) has the highest importance and after that Skills and Abilities (SA), internal and external Team Involvement (TI) got the other ranks, respectively.

Keywords: Innovation, internal and external team involvement, product features, skills and abilities, strategic thinking, supply chain ability

INTRODUCTION

Due to the advances in science and technology and the rapid changes in the market, a product's life cycle has become much shorter than before. Enterprises must constantly innovate and conduct research on new products, choose appropriate products with new technology, cope with customer demands and the threat from new competitors. A New Product Development (NPD) strategy is an important activity that helps enterprises to survive and make continuous improvements (Liu *et al*., 2005). So it's very important for organization to know about the succession of the NPD.

Furthermore, Considerable effort has been made in the past several years to help organizations make better decisions in NPD project selection (Ringuest *et al*., 2004; Lawson *et al*., 2004). A wide range of criteria is used for analysis such as strategic target, competitors, technical feasibility, manufacturing capability, financing, risks, organizational culture, market potentials and project schedule. Most of these studies focus on identifying CSFs and developing decision-making methods. Identifying CSFs can help make NPD more promising and many researches have dealt with the ways to improve NPD.

Food industries in Iran: It seems necessary that the reason of choosing the food industry as the research scope of selected study be explained. In Iran, since Islamic Revolution a large number of industries like the gas, petro chemistry, oil industry and the steel industry and heavy metal, automobile industries have been controlled by the government. As a result of support and interference of the government, the mentioned industry is not dominated by the rules and regulation of free market.

But In spite of these industries, the food industry was one of the few industries which have not been supported by the government. Thanks to the reason, the market of food industry is more similar to the free marketing.

Although closed economy of Iran, there are a large number of foreign brands in food industry competing in Iran's market. Thus the Iranian companies in this industry have to compete with them which it is leads to a significant development in Iranian companies.

The other important factor is the presence of private companies in this area. The reason is that, these private companies have to become profitable by proper management as they rely on personal investment.

Thus the companies act intelligently and could achieve more success in the process of new product development which is considered as a crucial strategy in each organization. This phenomenon resulted in more competition in Iran's food industry.

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Why NPD is crucial in Iran: Kiewiet and Achterkamp (2008), hypothesize that there exists no definition of new product success which is generally applicable, or valid in all circumstances. Even stronger, they argue that such a definition cannot exist. The best we can strive for is a "local" definition: a definition valid only in a specific local context.

A large number of researches in the field of new product development have conducted in many countries, particularly in developed countries which will be mentioned in the section of literature of this study. Unfortunately, in Iran due to the limited number of studies in this area, the companies have not been able to use the result of the studies for developing the new product. Thus the measurements in this area have been almost based on the error and trial resulted in spending more time and energy.

New products have a huge positive impact on company fortunes. New products currently represent about 30% of company sales in the U.S. that is, products on the market for 3 years or less now make up almost one-third of businesses' revenues.

Achieving positive results in product development is no easy feat. Indeed new product failures seem to be more common than big successes. Look at the facts: only one product concept out of seven becomes a new product winner; and 44% of businesses' product development projects fail to achieve their profit targets! Here are some more statistics:

- Thirty two percent of businesses, rate their NPD speed and efficiency as "very poor".
- Only 27% rate their NPD productivity as high-their profitability relative to how much money they spend.
- Twenty eight percent of businesses do not even measure their NPD performance result!
- Just better than half of NPD projects (56%) in the typical business meet their profit goals -44% do not!
- Sixty percent of development projects are considered commercial successes, while 40% are either killed or fail commercially.
- About half of the projects (51%) are launched on schedule, but 49% miss their launch date target.
- And the slip rate-which captures how late projects are in reaching the marketplace as a percentage of scheduled time-is a dismal 35% on average (Cooper and Edgett, 2009).

The statistics demonstrate the importance of this issue in developed countries, while there is no information about the rate of success or failure of new product, as well as the amount of losing money owing to failure of these projects in Iran. So, the lack of studies in this area for assisting managers and absence of statistics and information about unsuccessful projects, highlight the significance of this issue in Iran. The researchers of this study hope this article could be a step in growing the knowledge of NPD in Iran.

LITERATURE REVIEW

Proficiency in NPD can contribute to the success of many companies. Success factors listed in Poolton and Barclay (1998) roughly correspond, although they divide factors into tactical and strategic categories (Suwannaporn and Speece, 2010). They identified a set of six variables that have consistently been identified in the literature as being associated with successful NPD.

Montoya-Weiss and Calantone (1994) reviewed 47 research studies of the determinants of new product performance and found that each of these studies attempted to identify the Factors that improve NPD Success rates (CSF-CSF).

Cooper and Kleinschmidt (1995) studied hundreds of cases to reveal what makes the difference between winners and losers in the process of NPD. He extracted 12 common denominators of successful new product project and seven possible reasons (blockers) offered by managers for why the success factors are invisible and why projects seem to go wrong or are otherwise not well executed. The factors proposed by these studies are not exactly the same and it is in fact difficult to generate a common set of CSFs for NPD. It is even harder to generate these factors for any specific industry (Balachandra and Friar, 1997; Cooper and Kleinschmidt, 1995; Spivey *et al.*, 1997).

Lester (1998) study identified a range of potential problems that can derail well-intentioned NPD efforts. By working through these problems, Lester (1998) discovered 15 CSFs in five areas of new product development.

Lynn *et al.* (1999) developed a model of the determinants of new product development success.

Jensen and Harmsen (2001), ask managers to identify a number of factors underlying success or failure of product development. They point to two major areas that have not been covered by previous studies on new product development success factors: knowledge and skills of individual employees, values and norms.

Sun and Wing (2005) explores the Critical Success Factors (CSFs) for New Product Development (NPD) in the Hong Kong toy industry and, novelly, examines both the project and functional levels. Using the Biblical Metaphor Model, they identified a group of critical success factors for each phase of NPD. Moreover, they also reveal which factors have been implemented and which have not.

Chen *et al.* (2006) use a modified-Analytic Hierarchy Process (AHP) model to evaluate the NPD mixes. A total of ten groups of CSFs were selected in their study:

- Quality of the human capitals
- Market potential of products
- Entrance ability of products into the market

- Positive Net Present Value (NPV) of income
- Capability of survival of products
- Related equipment and assets
- Competitors and production experience
- Technological characteristics of products
- Competitive advantage of products
- Technology possessed in the trade

They also investigate the relationship between market information and new product development success rate (Hart *et al.*, 1999).

Kandemir *et al.* (2006), survey a broad spectrum of New Product Development (NPD) projects from the biochemistry industry in the USA, Canada, Germany, the UK and Belgium with the purpose of exploring the role of the organizational activity factors in the NPD success.

Cheng and Shiu (2008) explore critical success factors of new product development in Taiwan's electronics industry which uses the approach of re-innovation (CSF-Critical Success).

Mu *et al.* (2007), examine the key success factors of NPD in Chinese SMEs. They believe most of the CSF studies were conducted within the context of the developed economies or for large enterprises; relatively little is known about how firms, especially Small and Medium-size Enterprises (SMEs), develop new products in many of the emerging markets.

Kiewiet and Achterkamp (2008) measure new product success within a Dutch mailing company and hypothesize that there exists no definition of new product success which is generally applicable, or valid in all circumstances.

Angelopoulos *et al.* (2010), suggest a model that incorporates critical factors contributing to the success in New Service Development (NSD) projects in electronic government. They attempted to identify the factors necessary for successful NPD.

Hilletofth and Eriksson (2010), investigate the relationship and the necessity of coordination between new product development and supply chain management. They presented a summary of NPD success factors identified in the literature in the part of their study. The critical success factors of NPD were categorized in four groups as follows: Market characteristics, Product characteristics, Strategy characteristics, Process characteristics.

Suwannaporn and Speece (2010), measure New Product Development (NPD) success factors in the Thai food industry. They also demonstrate that what managers involved in the NPD process believe to be the important success factors cannot always predict NP success rates (Suwannaporn and Speece, 2010).

Enzing *et al.* (2011) investigate with reference to which factors the innovation processes of new and improved products differ and how these factors relate to the products' success on the market, with a specific focus on technology- and market-related factors.

Wong and Tong (2012), investigate key determinants of New Product Success (NPS) from the perspective of New Product Development (NPD) team leaders in the electronics industry in China. A model is proposed investigating the interplay among elements of market orientation and the moderating effects of customer and competitor orientations on the relationship between R&D-Marketing cooperation and NPS.

METHODOLOGY

The main purpose of this study is to identify the critical factors of success of developing new product in the food industry of Iran. Hence, in order to achieve native aspects and measures, the exploratory-descriptive mixed method has been used (qualitative-quantitative). In this regard, in the first stage of research, the most important critical factors of success of new product development has been identified using interviews and a qualitative questionnaire and the main factors of critical success and necessary basis has been created for designing the quantitative and (descriptive) Questionnaire. In the second stage, factors or criteria for success of new product development has been considered using the main themes identified in the exploratory phase of research and then relevant pattern has been identified using the techniques of factor analysis and path analysis.

So this study is an exploratory study in which exploratory mixed method (qualitative-quantitative) has been used to achieve the goal. Exploration of the critical factors in this part of the study has been investigated in a randomly sample with snowball method of 22 cases In order to explore the main success factors of new product development and the most critical factors were identified using existing questions in the qualitative questionnaire according to content analysis technique. It is noteworthy that among these interviews, 20 of them have been used and this trend continued to the extent that identified categories reached to the saturation extent (Locke, 2003). It is notable that the target populations for the interviews in order to answer the main research question are experts and specialists of research, development and marketing units. Number of selected sample from 30 food industry companies with prestigious brand among 100 top selected brands equals 22 people. The interviewees have at least 2 years work experience in the field of food industry and new product development and have responsibility of strategic and executive decisions in their organizational post. According to researcher view, interviewees have been classified to two ranges of academic and executive experts that will make it easier to understand the results of the interviews. The mean age of studied sample in this part of the study was 40 years and 73% were male and the rest were female.

Table 1: Organizing the data obtained from the first interview

Code	Identification number	Question	Path	Data	Notes
10510	1	1	5	In order to be successful in developing its product, the organization should have proper strategy	Strategic thinking

Coding and content analysis of obtained data presented 7 axis as the main critical success factors for new product development t that among them, according to the frequencies obtained, all of 7-axis were considered.

Qualitative section of study: As previously mentioned, semi-structured interviews has been used in this research to identify the most critical success factors in new product development in the food industry of Iran. All of interviews were recorded using voice recorder. All of the participants were interviewed individually and questions arose about new product development. In each interview, the same general questions were raised and then detailed questions were raised. The common wisdom used (according to responses of interviewees). Approximate time for the interview was about 65 min and important data were transcribed during interview in order to analyze obtained information from interviews as well as converting the oral interview process in to a coherent text. Then considered data were analyzed and integrated using consistent theme analysis. The Steps that were used in this study for analyzing themes based on the methodology (Braun and Clarke, 2006) are as follows:

Step 1: Preparing and familiarity with data before the data analysis, the data were arranged to be easy to work with them. At this step, transcription of the interviews were conducted and tried to organize the data in Table 1 based on the proposed model (Except column 1 that will be completed in steps 2 and 3).

Step 2: Creating initial codes: Initial codes were generated from the data after the organization, study and familiarity with the data. These codes introduce one feature of the data that is interesting and significant to researchers.

Step 3: Themes search: In this step, categorizing the different codes in to the forms of potential themes and sorting all coded summarized data coded in the forms of clear codes themes were done.

Step 4: Creating concepts and meanings: At this step, the researchers work with more freedom and notice to the whole beyond coding and classifications and data and a comprehensive tabular analysis was provided that shown in Table 2. Table 1 also presents as example, a code obtained from one the interviews. In this table, the identification number is indicative of question number and path is indicative of data path in interview in order to find simple sentences in interviews based on paragraphs or

Table 2: Codes titles of interview data analysis

Code		Data classification
10100		Strategic thinking
10120	✓	Market intelligence driven
10200		Skills and abilities
10210	✓	Knowledge and skills of R&D

phrase. Data are also notes of interviewee's and the interviewer's personal notes. Code is also completed in the second stage. The main themes were identified after completion of table and coding and organizing data that numbers of them are shown in Table 2.

After coding and identifying available themes found in data from the inter views and with the aid of identified criteria from literature review, bellow initial criteria was provided.

The following methods were used to increase the reliability and validity of theme analysis.

Triangular method: In this method, several researchers, data source, or multiple methods are used to confirm the emerging data. In this study the combined method has been selected to increase validity of the model. This means that after the initial reviewing and modifying of the model by theme analysis method, this model was tested again in the form of quantitative research of validity of the model.

The method of searching members: In this method, the respondents who were in fact experts of Food Industry were asked whether the results of the theme analyzes are acceptable.

Paired survey: In this method, professor's and members of the department of Management and Marketing, Innovation and some of the experts were asked to put comments on the obtained findings and express their criticisms.

Review of the coding process: To ensure the accuracy of the coding process of categories and the formulation of the cases, this process was repeated again and the first results obtained. But to ensure reliability of the results, especially after reliability of themes analysis, three techniques were used (Merriam, 1998).

Making triangular: Such as what has done to confirm the validity is done to confirm the reliability. This means that use of mixed research method, can confirms the models derived from the interviews.

Table 3: First order exploratory and confirmatory factor analysis

	CFA loadings		EFA loadings (after varimax rotation)[a]						
Factor	Loading	t-value	PF	SC	TI	MC	DP	SA	ST
ST1	0.55	8.77	0.220	0.086	-0.024	-0.033	0.148	0.223	0.686
ST2	0.63	10.46	0.099	-0.012	-0.127	0.093	-0.026	0.129	0.797
ST3	0.69	11.77	0.026	0.123	-0.078	0.137	0.015	0.172	0.740
ST4	0.89	16.98	-0.092	0.056	-0.023	0.227	-0.162	0.085	0.797
ST5	0.80	14.50	-0.168	0.070	0.110	0.220	-0.138	-0.069	0.735
ST6	0.64	10.67	-0.098	0.111	-0.031	-0.037	0.046	0.208	0.706
MC1	0.87	16.30	0.123	0.024	-0.040	0.838	0.101	0.161	0.206
MC2	0.88	16.61	0.082	0.057	0.078	0.874	0.020	0.132	0.131
MC3	0.81	14.78	0.024	0.052	0.014	0.849	0.072	0.167	0.143
PF1	0.93	9.72	0.691	0.023	-0.288	0.278	-0.113	0.137	-0.032
PF2	0.91	9.64	0.621	0.054	0.396	0.046	0.004	-0.018	0.015
SA1	0.53	8.66	0.005	0.009	0.007	0.096	-0.068	0.654	0.289
SA2	0.63	10.60	-0.063	0.116	0.059	0.051	0.016	0.830	0.161
SA3	0.98	20.02	0.136	-0.006	0.035	0.216	-0.012	0.841	0.087
SA4	0.51	8.38	-0.101	0.108	0.018	-0.018	0.024	0.743	0.189
SA5	0.88	16.76	0.163	0.031	0.038	0.198	0.024	0.801	-0.017
TI1	0.49	5.04	-0.032	-0.102	0.693	0.161	0.056	-0.013	-0.106
TI2	0.71	7.36	-0.057	0.133	0.741	-0.017	-0.093	0.096	-0.061
TI3	0.48	5.84	0.102	0.008	0.723	-0.101	-0.184	0.054	0.023
SC1	0.75	8.56	0.085	0.842	-0.005	0.046	0.007	0.062	0.184
SC2	0.82	8.93	-0.037	0.881	0.051	0.071	0.054	0.140	0.118
DP1	0.76	12.06	-0.013	-0.012	-0.064	-0.020	0.815	0.055	0.002
DP2	0.72	11.09	-0.006	0.045	-0.022	0.051	0.781	-0.052	-0.017
DP3	0.86	14.31	-0.055	-0.009	-0.058	0.114	0.864	-0.018	-0.004
DP4	0.79	12.63	-0.153	0.080	-0.050	0.082	0.828	0.030	-0.027
DP5	0.52	7.43	0.391	-0.057	-0.050	-0.076	0.624	-0.028	-0.064

Goodness-of-fit statistics; χ^2: 669.11; df: 278; CFI: 0/95; NFI: 0/96; RFI: 0/93; TLI: 0/94; RMSEA: 0/077

Verification by an arbitrator: In this technique, researcher increases the reliability of the results by clarifying the way of data collection, the way of deriving categories and way of decision making during the investigation to audit and verify by referee. In this study, this verification was conducted by five professors and senior managers.

Retest method: Three interviews were selected for retest method and each of them was coded twice in a 15-day interval by the researcher. Then, using Eq. (1), validity percent of retest was calculated and equaled 71%, which was more than the minimum acceptable value 60% (Kvale, 1996):

$$\text{Retest reliability percentage} = \frac{2 \times number\ of\ agrements}{number\ of\ total\ codes} \times 100\% \qquad (1)$$

Quantitative section of study: After extracting aspects and naming them using literature review and internal consistencies between literature and concepts, questions were designed to measure each of aspects. Exploratory and confirmatory factor analysis was used to validate and reliability of questions. It is noteworthy that both diverging and converging validity and content validity were used to test the validity of questionnaires. The first questionnaire for content validity, to measure validity of the first questionnaires, a total of 12 questionnaires were distributed among the group of experts and all the ambiguities regarding questions were clarified then

designed items were reviewed. Diverging and converging validity were determined by factor analysis.

In exploratory factor analysis of the questionnaire's questions, the value (KMO) 768/0 was obtained, which indicates adequate sampling. Since the significant coefficients equaled to zero (less than 0/05). Factor analysis was recognized appropriate to identify the structure. Also after confirming the imaginary part of research, confirmatory factor analysis was used to accuracy of measurement models. Using analysis methods of main factors and varimax rotation, all of the remaining 26 questions of the research were summarized to 7 factors that are indicative of critical success factors of new product development. These factors that explain 18/67% of the total variance, indicates the utility of considered factors to measuring success of new product development in the food industry of Iran. The rotation matrix of the first-order factor analysis shows seven factors underlying these variables. Given the observed variables, these factors were named as Strategic Thinking (ST), Market Characteristics (MC), Product Features (PF), Skills and Abilities (SA), internal and external Team Involvement (TI), Supply Chain ability (SC), Development Process (DP).

Table 3 presents obtained model results from first order exploratory and confirmatory factor analysis. This table shows new product development success factors in 7 aspects Strategic Thinking (ST), Market Characteristics (MC), Product Features (PF), Skills and Abilities (SA), internal and external Team Involvement (TI), Supply Chain ability (SC), Development Process

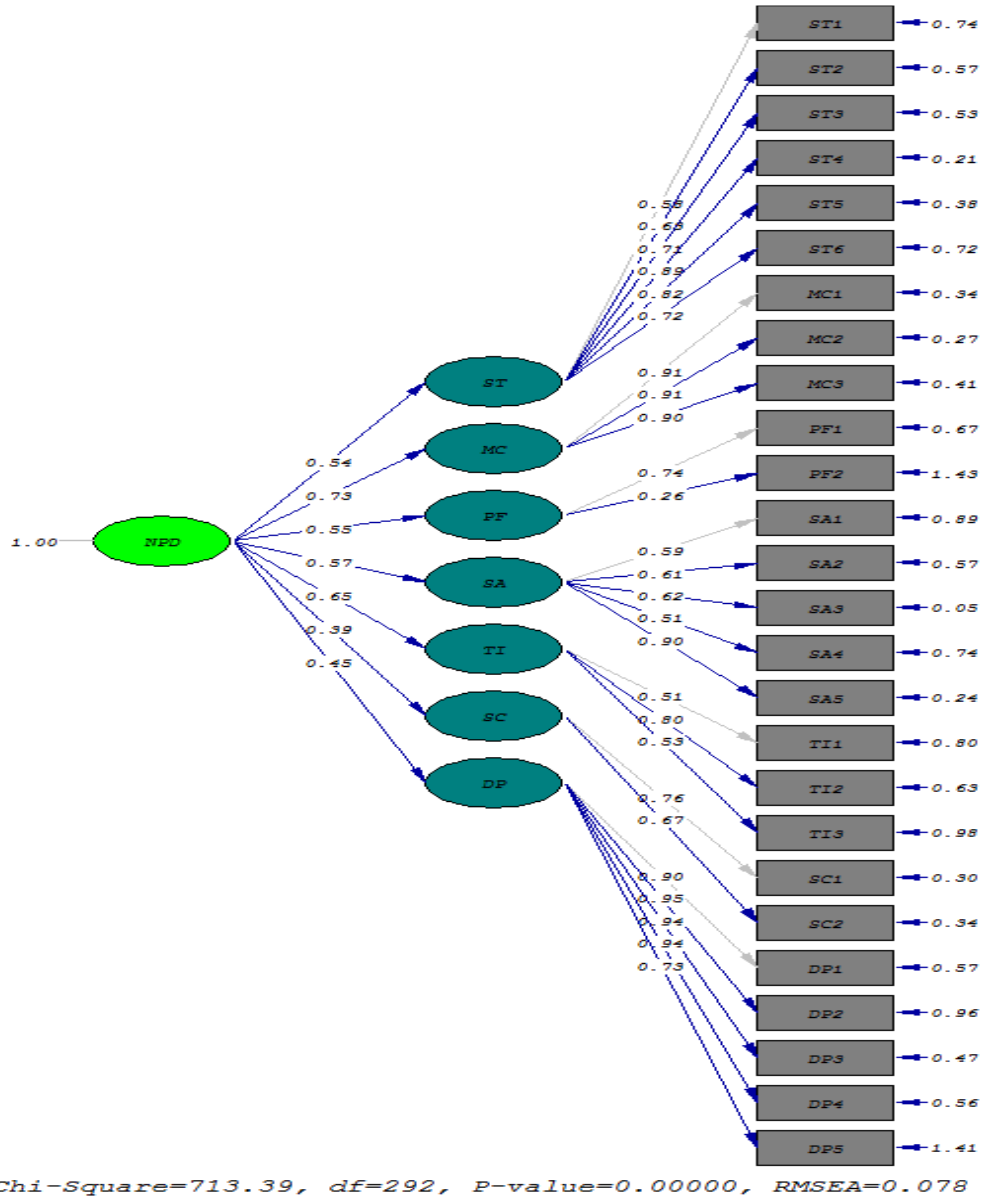Chi-Square=713.39, df=292, P-value=0.00000, RMSEA=0.078

Fig. 1: Confirmatory act analysis (standard estimate)

(DP). Therefore these seven constructs (aspects) can fully meet new products success. But according to the theories, interviews and management literature and new product development, it is obvious that these seven identified latent variables "Strategic Thinking (ST), Market Characteristics (MC), Product Features (PF), Skills and Abilities (SA), internal and external Team Involvement (TI), Supply Chain ability (SC), Development Process (DP)" determines the Critical success factors in new product development in the food industry of Iran.

Model goodness of fittest: Goodness of fit indexes indicates the power of fitting a model with measured data. In general, in covariance or LISREL models, each

of the parameters obtained for the model are not only reason of the fitness or suit ability of the model, rather these indicators should be interpreted alongside each other. Usually to confirm the model, using three to five indexes is adequate. However, in this study all of available indexes for the model fitting was used that number associated with each of these indices CFI, NNFI, NFI, RMSEA, AGFI, GFI, RMR, X2 is acceptable in its own area and this indicates a good fitness of model. The critical N index is also acceptable.

Figure 1 shows measurement model of critical success factors in new product development in the food industry in standard estimation mode. Estimation results (following figure) indicate the suitability of indicators. According to LISREL output, calculated

value χ^2 equals 713.39 which degrees of freedom 292 is less than number 3. The low value of this index shows little difference between the conceptual models with observed data of the research. RMSEA value equals to 0.078, allowable extent of RMSEA is 0/08.

RESULTS

To identify the critical success factors in new product development in the food industry of Iran, a scale was presented using qualitative research that measures success of new product development in the food industry of Iran in 7 aspects. After exploratory factor analysis, 26-components questions were approved to measure new product that the final scale is presented in Table 4.

Confirmatory factor analysis also confirmed the correlation between success of new product development and seven aspects and correlation between seven aspects and the components related to each aspect. Results show that after the second aspect, Market Characteristics (MC) aspect has the most correlation to other aspects with new product development in the food industry that indicates the importance of Market Characteristics (MC) for active companies in this industry. The high correlation between Market Characteristics (MC) can confirm the claims of researchers like Hilletofth and Eriksson (2010) and Song and Noh (2006).

In internal and external Team Involvement aspect (TI), the highest correlation relates to Customer Involvement in NPD Process criteria that indicate that managers of marketing and research and new product development in the food industry welcome presenting the customers' view in new product development process that shows the fact of competitiveness of this industry. The importance of this criterion has previously was emphasized in a research done by Hilletofth and Eriksson (2010). Skills and Abilities (SA) is also an important aspect of critical success factors in new product development in the food industry that the highest correlation relates to Financial Power criteria.

Although this is contrary to the result of the research done by De Toni and Nassimbeni (2003) that could be a reason for the fact given the current situation dominated on the food industry of Iran that have financial resources problems, it is of particular importance.

Product Features (PF), after the Skills and Abilities (SA) has the most correlation with success of new product development in the food industry of Iran. Also among subsequent criteria Product Features (PF), Product Value has the highest correlation with Product Features (PF) that indicates importance of new product

Table 4: Criteria of new product development in the food industry of Iran

Aspects	Label	Criteria	Literature	Interview
Strategic thinking	ST_1	Strategic intelligence		☐
	ST_2	Market intelligence driven	Hilletofth and Eriksson (2010)	☐
	ST_3	Technological synergy	Hilletofth and Eriksson (2010)	☐
	ST_4	Marketing synergy	Hilletofth and Eriksson (2010)	☐
	ST_5	Marketing strategy	Hilletofth and Eriksson (2010)	☐
	ST_6	Structured approach	Hilletofth and Eriksson (2010) and Lynn *et al.* (1999)	☐
Market characteristics	MC_1	Market potential	Hilletofth and Eriksson (2010)	☐
	MC_2	Competitive intensity	Song and Noh (2006)	☐
	MC_3	Food consumption culture of market		☐
Product features	PF_1	Product value		☐
	PF_2	Product advantage	Hilletofth and Eriksson (2010) and Cooper *et al.* (1999)	☐
Skills and abilities	SA_1	Knowledge and skills of R&D	Hilletofth and Eriksson (2010)	☐
	SA_2	Expert panelist		☐
	SA_3	Technologic power	Hilletofth and Eriksson (2010)	☐
	SA_4	Brand power	Hilletofth and Eriksson (2010)	☐
	SA_5	Financial power		☐
Internal and external team involvement	TI_1	Cross functional teams	Hilletofth and Eriksson (2010), Lester (1998) and Cooper *et al.* (1999)	☐
	TI_2	Customer involvement in NPD process	Hilletofth and Eriksson (2010)	☐
	TI_3	Top management involvement and support	Hilletofth and Eriksson (2010), Lynn *et al.* (1999), Lester (1998), Poolton and Barclay (1998), Song and Noh (2006) and Kandemir *et al.* (2006)	☐
Supply chain ability	SC_1	Strength of distribution system		☐
	SC_2	Supply and production facility in sanction		☐
Development process	DP_1	Using of market research	Hilletofth and Eriksson (2010), Lynn *et al.* (1999) and Kandemir *et al.* (2006)	☐
	DP_2	Business analysis	Kandemir *et al.* (2006)	☐
	DP_3	Project planning	Lester (1998) and Song and Noh (2006)	☐
	DP_4	Define product requirement	Cooper *et al.* (1999)	☐
	DP_5	Preliminary market assessment	Kandemir *et al.* (2006)	☐

development in the food industry in Iran. In the researches by Hilletofth and Eriksson (2010) and Cooper *et al*. (1999) the importance of this criterion has been approved for evaluating the success of new product development.

In the fifth aspect, the highest correlation relates to Marketing Synergy criterion that indicates synergies that marketing creates in research by Hilletofth and Eriksson (2010). But finally, two aspects of Development Process (DP) and Supply Chain ability (SC) have significant correlation with critical success factors of new product development. Other research, such as Hilletofth and Eriksson (2010), Lynn *et al*. (1999) and Kandemir *et al*. (2006) have also emphasized this aspect.

CONCLUSION AND RECOMMENDATIONS

As mentioned, for the first time this study attempts to model a comprehensive, strategic and local pattern in order to evaluate the success of new product development in the food industries of Iran. main feature of the proposed model is that contrary to the mathematical models that use just financial criteria or analytical models that are very popular, in addition to maintain comprehensiveness in the criteria and using all of financial, strategic, market and technical knowledge criteria offer a scale that has been localized to assess the success of new product development in the food industry of Iran.

For this purpose, following study was conducted in two stages. In the first stage, this study aimed to identify the most important success factors of new product development through reviewing previous research and semi-structured interviews with senior managers in research, development and marketing industry with the help of content analysis (theme). In this stage, 27 criteria were identified in 7 aspects. Then in the second stage, state of each aspect after regard to assessment of success of new product development was considered and some questions or amended standards and 27 modified criteria on 7 aspects shifting and Strategic Thinking (ST), Market Characteristics (MC), Product Features (PF), Skills and Abilities (SA), internal and external Team Involvement (TI), Supply chain Ability (SA), Development Process (DP) were classified.

Results of this study indicate that Market Characteristics (MC) is the most important aspect for the success of new product development in the food industry in Iran and then Product Features (PF), internal and external Team Involvement (TI).

At the end based on the final model, a scale has been presented for evaluating the success of new product development in the food industry in Iran. This study also has limitations and weaknesses. For example, the proposed scale of this study is just to evaluate the success of new product development in the food industry in Iran and does not have fully

generalizability to other industries. Also proposed measure was in the early stages of design and should be assessed in future studies in number of organizations to assess the success of new product development in order to determine its weaknesses. Hence future studies can employ the proposed measure in active organizations are active organizations in this industry. They can change proposed scale for particular industries.

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