

Full Length Research Paper

Market value coverage (4A) in terms of fast food adoption

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This study explored the elements of market value coverage (MVC) (awareness, acceptability, accessibility and affordability) as applied to adoption diffusion of innovations. Reviewed of these factors as consumer-focused marketing concept were other important aspects of this study. Statistical tools in this research were analysis of variance and post HOC test. This research found market value coverage elements pattern in hierarchical situation according to social sub systems (innovators, early adopters, early majority, late majority and laggards) and provided two main distinct clusters: innovators and early adopters (acceptability, accessibility, awareness, and affordability) and the other one as; early majority, late majority, and laggards (acceptability, accessibility, affordability, and awareness). Acceptability was the main important Market Value Coverage element for all social sub systems.

Key words: Market value coverage (MVC), acceptability, accessibility, affordability, awareness, adoption (4A), diffusion of innovations, social sub systems, fast food industries.

INTRODUCTION

Because of importance of innovations, the twenty first century is called the century of technology, inventions, and innovations. Third millennium is experiencing multitude of innovations in industrial and non-industrial sectors. Consequently, product life span is getting shorter by the day. Consumption patterns and timing of innovations adoption are vital for importers and producers in the time of constant innovations (Nezakati, 2003). The study of how innovations and ideas spread, travel and diffuse from one site to another comprises a well-established field of research. One sector facing rapid innovative changes is food industries. The fast food

business has become increasingly competitive, with various multinational fast food chain operators expanding into new geographies daily, along with the emergence of new players, new types of cuisines and new menu choices. In this highly competitive environment where markets and products have become internationalized or globalized, a fast food restaurant provider that offers a standard product and service world-wide must develop a unique kind of sustainable competitive advantage in order to maintain its market share across diverse cultures. Careful market research into relationships among products, innovative marketing and other important factors that make introduction of a new product in the market place successful shall be of great help (Ling et al., 2004). The focus of acceptability, affordability, awareness and accessibility (4A) is on events that ultimately make marketing activities directed at final consumers more successful considering all tools available to the promoters. To be successful, a marketing program must deliver high levels of each of the four attributes, all measured

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Abbreviations: 4A, Acceptability, accessibility, awareness, affordability; MVC, market value coverage.

from the viewpoint of customers in the chosen target market: Awareness refers to the extent to which customers are informed regarding product or service characteristics, persuaded to try it, and if needed, reminded to repurchase it. Acceptability refers to the extent to which the firm's product or service offering meets and exceeds customer expectations (which are defined based on competing alternatives). Affordability refers to the extent to which customers in the target market are willing (that is, does the value created exceed the price) and able (that is, can they economically afford it) to pay the price being asked for the product or service. Availability refers to the extent to which customers are able to readily acquire and use the product or service, with an amount of effort that is reasonable for the context. A simple formula can then be used to evaluate the overall marketing program:

Market value coverage = Acceptability x affordability x availability x awareness

The focus of 4P's is delicately on "implications" as opposed to 4A's that are aimed at objectives (Sheth and Sisodia, 2003). This study discusses different elements of market value coverage (MVC) elements (4A) proposed by Sheth (2004), as applied to the sub groupings of social sub systems (innovators, early adopters, early majority, late majority, and laggards) in adoption, development, and diffusion of innovations, proposed by Rogers (1962). In other words, by combining these two concepts, which are subject of discussions in marketing management and social system, effective marketing strategies could be formulated. This study is important from three different points of view:

A) Review of purchasing behavior among members of social sub system and the adoption diffusion of innovations: Study of consumer behavior of each subgroup can be utilized in the main marketing campaign. Division of consumers into these five groupings would further assist in better understanding of their purchasing behaviors.

B) Significance of research on new fast food products: Because of increased youth population and time constrains for cooking at home, demand for prepared fast food products are increasing. In view of traditional attitude toward cooking in target country, nominating a target market that can adapt to new fast food products is of great importance for successful introduction and market entry of a new product (Ling et al., 2004).

C) Significance of research on MVC elements (Sheth and Sisodia, 2003): The focus of earlier researches was on application of 4P's and 4C's concepts. MVC elements came after these two concepts. Sheth and Sisodia (2004) proposed 4A's vis-à-vis 4P's concept. When MVC elements is being reviewed and (4A) is applied to social sub system with the intention of determining important

element of each subgroup, suitable marketing strategies could be advised respectively to each social subgroup.

LITERATURE REVIEW

When the World Health Organization launched a world-wide campaign to eradicate small pox, it was engaged in diffusion. When Apple launched I-POD, it was diffusing a new product. When Bob Dylan wrote "The Times They Are A-Changing," he was describing diffusion (Dearing and Meyer, 2006). When professional dancers – both standing up and sitting down (in wheelchairs) - perform on stage, as do the artistes of the Dancing Wheels dance company in Cleveland, they are diffusing a new image of what constitutes (dis)ability. Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). An innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption (Morris and Ogan, 1996). Innovativeness was conceptualized as 'the degree to which an individual is relatively earlier in adopting new ideas than other members of the social system' (Rogers, 1995). The innovativeness of an individual is the likelihood that person has of adopting an innovation at a certain point or time frame within the innovation (Rogers, 1983). Stimulus variation will be associated with both knowledge and adoption of innovations and the time between awareness of an innovation and its adoption will be shorter for individuals who seek a high level of stimulus variation (Hirschmann and Wallendorf, 1979). Rogers claims that innovators are "the adventuresome type who like being on the cutting edge". Because there is absolute uncertainty about the costs and benefits of adoption at the time of innovation, the innovators take the most significant risk. The *early adopters* evaluate the data and evidence of the innovators' adoption process. Because most potential adopters do not have the time, information, or other resources to collect and weigh this evidence, the early adopters tend to have higher levels of education and access to resources, including social status, than others. The early adopters then promote the innovation to the early majority, followed by the late majority and the laggards. Rogers refers to those early adopters who most actively diffuse the innovation as "opinion leaders." Opinion leaders may be consciously influential (actively diffusing the innovation) or inadvertently influential (encouraging diffusion through example) (Rogers, 1995). When a consumer encounters the modified successor, the original innovation is likely to be used as a comparison standard. According to categorization and analogical learning theory, consumers utilize existing knowledge to learn about new products (Gentner, 1989; Basu, 1993; Sujana, 1985; Fiske, 1982). That is, upon seeing a new product, consumers search for a schema

match (Sujan, 1985). Now, consumer innovativeness has been extensively researched in marketing and related fields. Review of the literature suggests that this research can be broadly classified into three groups: 1) Measurement of innovativeness (Midgley and Dowling, 1978; Goldsmith 1990, Goldsmith and Hofacker, 1991; Venkatraman and Price 1990, Roehrich 2004); 2) relationship between innovativeness and new product adoption or other behavioral constructs (Foxall, 1988, 1995; Foxall and Goldsmith, 1988; Goldsmith et al., 1995; Hirschman, 1980; Manning et al., 1995; Midgley and Dowling, 1993); 3) antecedents of innovativeness, including personal and demographic characteristics (Midgley and Dowling, 1993; Steenkamp et al., 1999; Venkatraman, 1991; ImBayus and Mason, 2003). The study of the diffusion of innovations in its present-day form can be traced from the theories and observations of Gabriel Tarde (1903), a French sociologist and legal scholar (Rogers, 2003).

Tarde originated such key diffusion concepts as opinion leadership, the S-curve of diffusion, and the role of socioeconomic status in interpersonal diffusion, although he did not use such concepts by these names. Such theoretical ideas were set forth by Tarde (1903) in his book, *The Laws of Imitation*. The intellectual leads suggested by Tarde were soon followed up by anthropologists, who began investigating the role of technological innovations in bringing about cultural change. Illustrative of these anthropological studies was Wissler's (1923) analysis of the diffusion of the horse among the Plains Indians. As in other anthropological works, the emphasis was on the consequences of innovation. For example, Wissler (1923) showed that adding horses to their culture led the Plains Indians, who had lived in peaceful coexistence, into a state of almost continual warfare with neighboring tribes.

The basic research paradigm for the diffusion of innovations can be traced to Bryce Ryan and Neal C. Gross's classic 1943 study of the diffusion of hybrid seed corn among Iowa farmers. This investigation was grounded in previously conducted anthropological diffusion work, which Ryan had studied while earning his doctoral degree at Harvard University, prior to becoming a faculty member in rural sociology at Iowa State University, where Gross was a graduate student.

During the 1950s, many diffusion studies were conducted, particularly by rural sociologists at land-grant universities in the Midwestern United States. They were directly influenced by the Ryan and Gross investigation. As soon as communication study began to be institutionalized, this new breed of scholars became especially interested in the diffusion of news events, particularly through an influential study by Deutschmann and Danielson (1960) (Singhal, 2006). Nezakati (2003) assessed the theory of Adoption and diffusion of innovations in relation with consumer acceptance time in

Iranian electronic industry. Results showed that distribution of the curve relating to consumers' time of adoption of diffusion of innovations in Iran followed the global model of normal distribution but there were differences among spaces beneath the curve with the global model (innovators -100%, early adopters +60%, early majority -31.47%, late majority -5.88%, and laggards +44.38%) Ling et al. (2004) did a research on adopters of new food products in India. The purposes of this research were to compare the attitudes of new food purchases between innovators/early adopters and non-innovators, and to determine the food purchase characteristics of innovators/early adopters and non-innovators. The findings revealed some important characteristics of food innovators/early adopters: they tend to be opinion leaders, seek variety in food types and brands, and are more responsive to sales promotions and advertisements. Food prices are relatively important to both consumer groups. Marketing implications for food businesses are discussed. Anderson (2003) used market value coverage (4A's) in order to study the mobile network in the Philippines. To use market value coverage by smart company, here has been reason to access to the company's success to innovation and profitable growth. Kumar (2003) assessed market penetration of processed and packaged foods in rural India. He focused on four limiting factors: 1) availability, 2) affordability, 3) acceptability, 4) awareness, with the aim of finding out popular branded food products and best marketing medium in rural parts. The most important results are the followings:

1. Product having higher level of awareness and consumption belong to non-alcoholic beverages or aerated drinks with awareness level being 100%.
2. Reason of consumption: taste is the dominants factor in consumption of branded products.
3. Limiting factors for the popularity of branded products: Physical accessibility is also a pre-dominants factor.

Conceptual model

This model is conceptualized based on diffusion of innovation curve, proposed by Rogers, and elements of market value coverage model (4A's), proposed by Sheth. By merging these two models and identifying the most important elements of market value coverage model and their effects on any social system subgroups, effective changes in marketing strategies could be devised. New prepared food products are used as the case for this study. If null hypotheses for each sub groups is rejected, then on the base of research background knowledge related hypothesis could be proposed for which elements of market value coverage model has the most significance for innovators, early adaptors, first majorities,

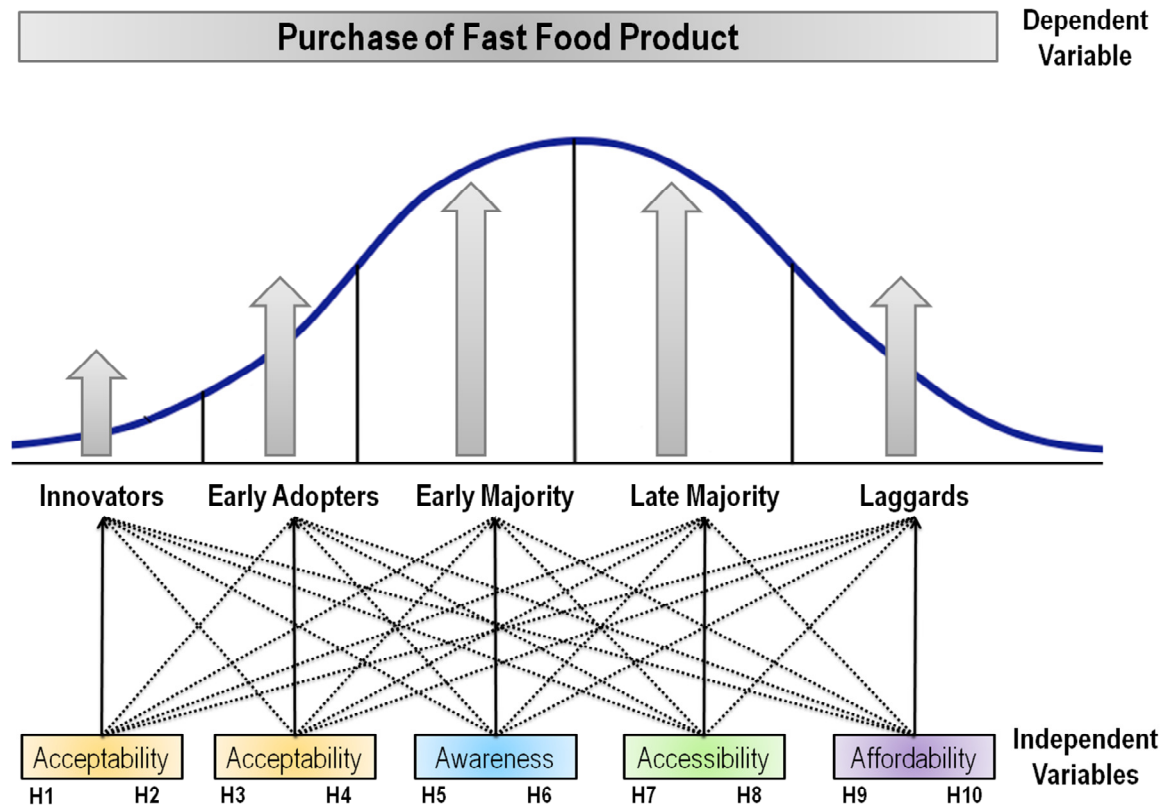


Figure 1. Conceptual model of present study.

late majorities and laggards (Figure 1).

Research hypotheses

H₁: The importance of MVC model elements (4A's) is not equal for innovators.

H₂: Among MVC model elements (4A's), acceptability has the most significant importance for innovators.

H₃: The importance of MVC model elements (4A's) is not equal for early adopters.

H₄: Among MVC model elements (4A's), acceptability has the most significant importance for early adopters.

H₅: The importance of MVC model elements (4A's) is not equal for first majorities.

H₆: Among MVC model elements (4A's), awareness has the most significant importance for first majorities.

H₇: The importance of MVC model elements (4A's) is not equal for late majorities.

H₈: Among MVC model elements (4A's), accessibility has the highest importance for late majorities.

H₉: The importance of MVC model elements (4A's) is not equal for laggards.

H₁₀: Among MVC model elements (4A's), affordability has the most significant importance for laggards.

MATERIALS AND METHODS

The scientific studies are classified based on two basis of: objective and method of collecting information. Studies based on objective include three groups: fundamental, applied and scientific (Hafeznia, 2004). The methodology of the present study is based on applied objective, because it enjoys applied results and its results can be applied as well. These studies apply theories, principles, criteria and techniques, which are compiled in fundamental researches, for solving realistic and executive problems (Khaki, 2006). Also, the present study is a descriptive-survey study in terms of nature and method.

This study intends to describe the current status of 4As (acceptability, awareness, accessibility and affordability) and time of adoption and innovation. As this study deal with variables, the quantitative method will be used. Because of the nature of the problem, the survey will be cross-sectional, with the data collected at one point in time. With the use of a quantitative study, the validity and reliability of the findings can be enhanced and interpreted results can be more generalized to others.

Data collection

There were no clear indications about the number of elements forming the study population, nor was there any information about mean, variance, and standard deviation of the study population. Therefore, this study applied formula for estimating sample population with unknown variance.

This study estimated the number of sample population to be 384

Table 1. Distribution of selected subjects in food stores across Tehran.

Description	Five districts of Tehran					Total
	North	South	East	West	Center	
Number of food stores selected in each district based on their sales volume	4	2	4	3	5	18
Number of subjects selected in each district	100	79	88	86	91	445
Percentage of sample total	22.5	17.7	19.9	19.4	20.5	100

assuming maximum dispersion of 0.25 and error limit of 0.05. Considering the nature of data collection method and possible reduction in the sample and experiment, present study distributed additional questionnaires with the intention to increase accuracy of our research:

$$n = \frac{z^2 \cdot pq}{d^2} = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2} = 384$$

Statistical universe in this research is prepared food costumers. This study used people who buy prepared food products at sales outlets. Present study used simple cluster-random sampling method for this study.

Study used questionnaire because of the nature of the subject and its variables and designed questionnaire based on the questionnaire used by Ling et al. (2004) in India and the questionnaire used by Mayzlin and Godes (2004) in US. Expert reviews, pilot test on 35 individuals, and internal reliability (Cronbach's alpha Test = 0.83) confirmed applicability and reliability of the questionnaire.

Data collection was conducted on shoppers at five are across Tehran by using questionnaire and interviews. Five-point Likert scale was used in the design of questionnaires. 445 Questionnaires distributed in order to increase research accuracy. The reasons for using this number of questionnaires were: 1) the nature of data collection method, 2) possible reduction in the sample and experiment size, 3) possible non-applicability of some filled out questionnaires and 4) researchers possibilities. The final analysis was conducted on all 445 filled out questionnaires (Table 1).

Data analysis

After extraction of information at the present study, summarizing and classifying statistics data were carried out. This work was carried out with setting up redundancy tables and through using advanced SPSS software package. The base of data analysis was descriptive/interpretative research methods. Researchers calculated tendencies to the mean and distribution of variables by using descriptive statistical method. Interpretive statistical methods are used for further analysis and interpreted the results. Researchers finally made judgments on the statistical universe based on descriptive indices and by applying probability theorem on these research hypotheses.

Data analysis for identification and division of different subgroups of social system as applied to adoption and diffusion of innovation

The criteria for differentiation between the subgroups are defined according to what was proposed in earlier studies. Descriptive statistics are used to differentiate between subjects.

Data analysis for identifying the most important element of market value coverage model

Researchers first identified different subgroups of social system as applied to diffusion of innovation (including innovators, early adopters, first majorities, late majorities and laggards). Next, researchers applied analysis of variance (ANOVA) to test H_1 to H_5 and if null hypotheses are rejected, then Post HOC test will be used to test H_6 to H_{10} . For this study, researchers selected 18 food stores across Tehran according to their total sales volume and sales distribution. These stores were located in five areas in North, South, Center, East, and West of the City.

To determine the number of subjects required for each district, first, the percentage of the sales volume for prepared food products in each district is calculated and then, multiplied these percentages by the total number of subjects. The following table shows the frequency distribution and percentage of interviewees divided by their innovation adoption. For division of subjects, researchers used main attributes of each social system subgroup as applied to innovation adoption (Table 2).

RESULTS AND DISCUSSION

Hypotheses test results

H_1 : The importance of MVC model elements (4A's) is not equal for innovators.

Based on the ANOVA test, since P-value is less than α , therefore H_0 is rejected and conclude that the means for the importance of MVC elements for innovators are different (P-value=0.000). So to ascertain the most important element H_2 will be tested. H_2 : Among MVC model elements (4A's), acceptability has the highest influence on innovators.

To ascertain the importance difference, Post-Hoc test is used by Tukey's HSD procedure. Based on the results, it is concluded that, acceptability has the highest importance among MVC model elements for innovators. Accessibility, awareness, and affordability are next in priority.

H_3 : The importance of MVC model elements (4A's) is not equal for early adopters.

Based on the ANOVA test, since P-value is less than α , therefore H_0 is rejected and conclude that the means for

Table 2. Distribution of frequency and percentage divided based on subgroups of social system of innovation.

Innovation adoption system	Frequency	Accumulative frequency	Percentage	Accumulative percentage
Innovators	70	70	15.73	15.73
Early adopters	108	178	24.27	40.00
First majorities	120	298	26.97	66.97
Late majorities	91	389	20.45	87.42
Laggards	56	445	12.58	100.00
Total	445	-	100.00	-

the importance of MVC elements for innovators are different (P-value=0.000). So to ascertain the most important element H_4 will be tested.

H_4 : Among MVC model elements (4A's), Acceptability has the highest influence on early adopters.

To ascertain the importance difference, Post-Hoc test is used by Tukey's HSD procedure. Based on the results, we can conclude that Acceptability has the highest importance among MVC model elements for early adopters. Accessibility, awareness, and affordability are next in priority.

H_5 : The importance of MVC model elements (4A's) is not equal for first majorities.

Based on the ANOVA test, since P-value is less than α , therefore H_0 is rejected and conclude that the means for the importance of MVC elements for innovators are different (P-value=0.000). So to ascertain the most important element H_6 will be tested.

H_6 : Among MVC model elements (4A's), Awareness has the highest influence on first majorities. To ascertain the importance difference, Post-Hoc test is used by Tukey's HSD procedure. Based on the results, we cannot conclude that Awareness has the highest importance among MVC model elements for first majorities.

H_7 : The importance of MVC model elements (4A's) is not equal for late majorities.

Based on the ANOVA test, since P-value is less than α , therefore H_0 is rejected and conclude that the means for the importance of MVC elements for innovators are different (P-value=0.000). So to ascertain the most important element H_8 will be tested.

H_8 : Among MVC model elements (4A's), Accessibility has the highest influence on late majorities.

To ascertain the importance difference, Post-Hoc test is used by Tukey's HSD procedure. Based on the results, we cannot conclude that Accessibility has the highest importance among MVC model elements for late majorities.

H_9 : The importance of MVC model elements (4A's) is not equal for laggards.

Based on the ANOVA test, since P-value is less than α , therefore H_0 is rejected and conclude that the means for the importance of MVC elements for innovators are different (P-value=0.000). So to ascertain the most important element H_{10} will be tested.

H_{10} : Among MVC model elements (4A's), Affordability has the highest influence on laggards.

To ascertain the importance difference, Post-Hoc test is used by Tukey's HSD procedure. Based on the results, we cannot conclude that accessibility has the highest importance among MVC model elements for laggards.

Finding based on hypothesizes test results

Calculated mean for acceptability has the highest value for innovators (mean= 4.457), therefore, acceptability has the highest importance to them. Late majorities (mean= 4.448) and laggards (mean=4.447) are next in line followed by first majorities (mean=4.436), and early adopters (mean=3.380). Calculated mean for awareness has the highest value for innovators (mean=3.514), therefore, awareness has the highest importance to them. Early adopters (mean=3.445) are next in line followed by first majorities (mean=3.413), late majorities (mean=3.404) and first adopters (mean=3.380). There is consistency of succession among these five groups, i.e. awareness has the highest importance for innovators, followed by early adopters, first majorities, late majorities and finally laggards. Calculated mean for accessibility has the highest value for late majorities (mean=4.103), therefore, Accessibility has the highest importance to them. Laggards (mean=4.101) are next in line followed by innovators (mean=4.086), first majorities (mean=4.057), and finally early adopters (mean=4.040). Calculated mean for affordability has the highest value for laggards (mean=3.638), therefore, affordability has the highest importance to them. Late majorities (mean=3.579) are next in line followed by first majorities (mean=3.519), early adapters (mean=3.414) and innovators (mean=3.171)

Table 3. Mean values for elements of market value coverage model based on diffusion of innovation subgroups.

Ranking Subgroup	Acceptability	Accessibility	Awareness	Affordability
Innovators	4.457	4.086	3.514	3.171
Early adopters	4.422	4.040	3.455	3.414
First majorities	4.436	4.057	3.413	3.519
Late majorities	4.448	4.103	3.404	3.579
Laggards	4.447	4.101	3.380	3.638

There is consistency of reverse succession from laggards to innovators.

Table 4. Rankings for elements of market value coverage model as applied to adoption and diffusion of innovation subgroups.

Ranking Subgroup	First ranking	Second raking	Third ranking	Fourth ranking
Innovators	Acceptability	Accessibility	Awareness	Affordability
Early adopters	Acceptability	Accessibility	Awareness	Affordability
First majorities	Acceptability	Accessibility	Affordability	Awareness
Late majorities	Acceptability	Accessibility	Affordability	Awareness
Laggards	Acceptability	Accessibility	Affordability	Awareness

(Table 3). Researchers can arrive at the conclusion by summing up the ranking for elements of market value coverage model as applied to adoption and diffusion of innovation subgroups (Table 4).

MANAGERIAL IMPLICATIONS AND LIMITATIONS

The results show that innovators and early adopters have identical positions based rankings for elements of market value coverage model (acceptability, accessibility, awareness, and affordability). Likewise, first majorities, late majorities, and laggards have similar positions (acceptability, Accessibility, affordability, and awareness). Although it seems that each one of the subgroups have different rankings for MVC model elements, but innovators and early adopters could be gathered in one group and first majorities, late majorities, and laggards into another group. Thus, these five subgroups could be divided into two main groups and devise marketing strategies directed to these two main groups. Acceptability is the most important factor for different segments of innovation adoption system. Therefore, when considering the MVC model elements, the highest attention should be paid to acceptability. The second important element of innovation adoption system is accessibility. This fact tells us that consumers consider Accessibility as being more important than awareness. Therefore, location (accessibility) gains an especial importance when budgeting for marketing campaign. Affordability has more importance than awareness for

first majorities, late majorities, and laggards groups. Affordability stands in third place and/or fourth place (after acceptability and accessibility) among all groups. It may seem that price and, hence, affordability do not have much importance in acceptance of prepared food products. However, considering that these groups make 84% percent of the population, we can benefit from financial inducement approaches and create preferences by creating small increments in percentage of acceptability in order to attract many potential customers.

Study potential

1. The effects of MVC model elements in other industries.
2. Investigated whether the pattern of innovation in the field of accepting new food products matches with the global pattern.
3. The effect of brand extension on adoption of diffusion of innovations.
4. The effect of brand in ranking factors in market value coverage pattern.
5. Finding position in accepting innovations in other food industry companies.

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