

## Designing a Support Management Information Systems Model for penetration strategies of Iranian beverages to international markets and its validation

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### Abstract

The aim of the research is to design a model of Support Management Information Systems for penetration strategies of Iranian beverages to international markets and validation it. In this research, a combination of interviews with three-stage coding of grounded theory and questionnaires; therefore, this research is mixed. The statistical population of this research includes experts in the field of marketing international products, and according to the research objective, the sampling in this research is purposeful. The sample size in this research was selected to be 10 people based on the snowball sampling method. The research findings identified 8 factors, including Market characteristics (market analysis and selection of target markets), product characteristics (production and packaging), marketing and branding strategies and advertising, cultural and social factors, market challenges and opportunities, management and organizational processes, distribution and sales network, and competitive pricing. . The research results showed that for success and penetration in international markets, Iranian beverage companies need to pay special attention to Market characteristics (market analysis and selection of target markets), product characteristics (production and packaging), marketing and branding strategies and advertising, cultural and social factors, market challenges and opportunities, management and organizational processes, distribution and sales network, and competitive pricing. . From competitive analysis and identifying market trends to developing new products and using natural materials, all these factors can help optimize marketing strategies. Furthermore, adapting to different cultures and understanding local needs can play a significant role in the success of marketing strategies. Additionally, the use of new technologies and optimization of managerial processes can improve customer relationship management and increase productivity. Ultimately, analyzing consumer behavior and identifying new opportunities can help identify and exploit market opportunities and lead to the sustainable growth and development of Iranian companies in international markets.

**Keywords:** *Marketing, Management Information System, Marketing Strategy, Information System, Beverages*

### Introduction

Today, information is considered the most valuable asset of any organization and should be regarded as an essential commodity, akin to electricity, without which many businesses cannot operate smoothly. The development of information systems is like a double-edged sword that, on one hand, brings numerous benefits to humanity and, on the other hand,

due to information security issues, can cause irreparable damages (Shafiei Nikabadi et al., 2019).

The main issue of the article is that many manufacturing companies face several challenges on the way to enter international markets (Pinho and Prange 2016). These challenges include insufficient knowledge of the needs and tastes of foreign consumers,

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(2020), lack of access to market information quickly and accurately, and lack of appropriate Niittymies & Pajunen strategies to penetrate these markets (Martin et al. 2022). These problems arise due to the lack of effective use of management information systems to analyze data, predict trends and support strategic decisions (Vissak et al. 2020).

This issue becomes more critical especially in situations where international markets are changing at a high speed and the competition among companies to gain a larger share of these markets is increasing day by day (Merkman et al. 2019). In such an environment, not having access to accurate and up-to-date information, and not having proper tools to analyze this information, can lead to making wrong decisions and losing valuable business opportunities (Ju et al. 2018). On the other hand, management information systems as a powerful tool can help companies penetrate international markets more effectively by accurately analyzing data, identifying opportunities and threats, and optimizing decision-making processes (Martin et al. 2022). But so far, there has not been a comprehensive and practical model specifically designed for the Iranian beverage industry. With the aim of filling this gap, this article has designed and validated a model that can solve this problem and help Iranian companies to succeed in global markets. Therefore, the main issue of this article is to design a model that can solve these challenges through management information systems and help Iranian beverage companies to penetrate international markets.

In today's world, management information systems (MIS) play a crucial role in advancing inbound marketing strategies for companies in the beverage industry, especially in international markets where intense competition and cultural and economic complexities exist. MIS, by providing advanced tools for data collection, analysis, and management, helps companies better understand customer needs and behaviors and optimize their marketing

strategies. These systems, by providing accurate and timely information, enable companies to design and implement targeted marketing campaigns that can have the most impact on attracting and retaining customers. The importance and necessity of this research lies in providing a comprehensive and practical model to support the penetration strategies of Iranian beverages to international markets using management information systems. In today's world, where the competition in global markets is becoming more complex and intense, Iranian companies need innovative tools and approaches to increase their share in these markets. Focusing on identifying and explaining the key success factors in international marketing, this research has designed and validated a model that can lead to improving strategic decisions, increasing operational efficiency, and improving the competitiveness of Iranian companies in global markets. In addition, a deep understanding of the needs and cultural differences of the target markets and the use of new technologies in information management are among the factors that are considered in this research and can help to optimize marketing strategies and achieve sustainable success in the international arena. So his paper examines how MIS can support inbound marketing strategies for beverages at the international level and analyzes its impacts on the success and growth of companies. Therefore, the results of this research can help Iranian beverage companies improve their marketing strategies and perform more competitively in international markets using advanced MIS. Furthermore, this model can be used as a blueprint for other industries and contribute to the development of knowledge in MIS and international marketing. By utilizing this model, companies can exploit global market opportunities and achieve sustainable growth and development.

In the end, theoretical synergy is mentioned regarding this research. In this regard, it can be said that innovation has occurred in the design of the model in such a

way that a management information systems support model has been designed to support the penetration strategies of Iranian beverages in international markets. This model is specially designed for the beverage industry and in line with the specific needs of this sector, which has not been addressed in previous researches. On the other hand, this research leads to the strengthening of international influence strategies. In fact, by using this model, Iranian beverage companies can implement strategies to penetrate international markets in a more optimal way. Your paper shows how management information systems can help to more accurately analyze markets, anticipate consumer needs, and improve the decision-making process. It is worth mentioning that the model validation section shows how this model can be efficient in practice and thus help decision makers in the Iranian beverage industry to use their resources and opportunities more effectively. This stage of the research adds value to the practical and practical results of the research. In the end, it can be concluded that our research fills an important gap in the existing literature, because so far it has not been addressed comprehensively and with a focus on management information systems to support the penetration of Iranian beverages into international markets. This article specifically responds to the needs of Iranian beverage companies in the fields of strategy, management and information technology and helps to develop theories related to management information systems and their application in formulating and implementing international strategies. This research can be used as a reference for future studies in similar fields.

These cases indicate the contribution of our paper in expanding scientific knowledge and improving practical applications in the fields of management information systems and international marketing strategies.

### **Theoretical Foundations Information Systems**

Information systems are a set of interconnected elements designed to collect, store, process, and distribute information to support decision-making, coordination, and control in an organization. These systems include hardware, software, data, people, and procedures. The main goal of information systems is to improve the efficiency and effectiveness of organizational processes (Teplická, 2019). Hardware: The hardware of information systems includes computers, servers, storage devices, networks, and communication equipment used to collect, process, and store information. These devices must be up-to-date and have high capacity to process large volumes of data and ensure a quick response to requests (Pervan and Dropulic, 2019).

Software: The software of information systems includes applications and programs used to manage data and perform various tasks. These software can include database management systems, business applications, data analysis tools, and content management systems. Custom software may also be designed and developed to meet specific organizational needs (Jayawickrama et al., 2019).

Data: Data is the heart of information systems. This data can include financial information, customer information, product information, and operational information. Data should be stored in a structured and orderly manner to facilitate quick and accurate retrieval and analysis. Data management includes processes such as data collection, cleaning, validation, and storage (Saydasheva and Sharafutdinova, 2018).

People: People play a very important role in information systems. These people include end users, system managers, data analysts, software developers, and IT managers. Each group of people has specific roles and responsibilities that contribute to the proper and efficient functioning of the system. Training and empowering users is also crucial so that they can make the best use of the system.

Procedures: Procedures and processes in information systems include instructions,

standards, and workflows used to collect, process, and distribute information. These procedures should be designed to ensure the efficiency and security of the system. Security standards, privacy policies, and data backup methods are important aspects in this area (Harkare et al., 2023).

### **The Strategic Role of Information Systems**

Information systems face numerous challenges and opportunities. Challenges include security issues, privacy protection, change management, and high costs. On the other hand, opportunities include improving operational efficiency, enhancing decision-making ability, improving customer service, and creating business innovation. Therefore, in today's business world, information systems play a strategic role. These systems help organizations gain a competitive advantage, increase productivity, and respond quickly to dynamic and complex markets. The use of modern technologies such as artificial intelligence, the Internet of Things (IoT), and blockchain can also improve the performance and efficiency of information systems. As a result, information systems are essential tools for managing and growing organizations. By correctly utilizing these systems, organizations can achieve their goals and attain long-term success in complex and dynamic environments (Jaiswal et al., 2020).

### **Management Information Systems**

Management information systems (MIS) are an integrated set of information technologies, processes, and human resources aimed at collecting, processing, storing, and distributing information to support managerial decision-making, coordination, and control within organizations (Aarti et al., 2023). In these systems, information is collected from various organizational sources such as production, finance, marketing, human resources, and supply chain, and processed and analyzed using advanced software and hardware to be presented in the form of reports and managerial dashboards. These processes include collecting raw data,

processing it into useful information, storing it in databases, and distributing it to end users (Lajsic, 2019). MIS, by providing accurate and timely information, helps managers make informed decisions and effectively implement organizational strategies. These systems can automate processes, increase productivity, and enhance internal and external communications, thereby improving coordination among different parts of the organization. For example, a financial MIS can help managers in forecasting revenues and expenses and in budget planning by analyzing financial data (aiswal and Aryan, 2022). Similarly, human resource MIS can manage employee-related information, performance, training, and development, and assist human resource managers in strategic decision-making. Other key components of MIS include communication networks that transfer information between different parts of the organization. These networks can include the internet, intranet, and extranet. Information security is also a critical aspect of MIS, requiring security measures such as data encryption, the use of firewalls, and intrusion detection systems (Demečko, 2019). Challenges facing MIS include technological complexity, resistance to organizational changes, high implementation and maintenance costs, and security issues. However, with technological advancements such as artificial intelligence, IoT, and big data analytics, the future of MIS is promising, moving towards greater intelligence and empowerment of managers and employees. Given that MIS can significantly impact organizational performance, successful implementation requires careful planning, user training, and change management. Overall, MIS, by creating an integrated platform for collecting, processing, and distributing information, plays a vital role in improving managerial decision-making, increasing productivity, enhancing communication and coordination, and helping organizations achieve their strategic and operational goals (Sarkar and Chung, 2019).

### **The Importance and Role of Management Information Systems in Organizations**

The importance and role of management information systems (MIS) in organizations are extensive and crucial. These systems, by providing accurate and timely information, help managers make better decisions and analyze past, present, and future predictions. By automating work processes and reducing the time spent collecting and processing information, MIS can significantly increase organizational productivity (Vial, 2019). Additionally, by providing a platform for internal and external communications, they help improve communications and coordination between different parts of the organization. These systems allow managers to monitor organizational performance and use analytical tools to identify and solve problems. Furthermore, MIS helps managers set organizational strategies and goals and find optimal methods to achieve them (Arslan and Cruz, 2022). It should be noted that MIS, by integrating and analyzing data, plays a key role in optimizing organizational performance. These systems, by providing comprehensive managerial dashboards and reports, give managers the necessary information to accurately examine market trends, financial and operational performance, and customer needs. Another important advantage of MIS is facilitating planning and forecasting. By using predictive algorithms and analytical models, managers can forecast future trends and prepare for environmental and competitive changes (Kang and Cheung, 2022). In terms of control and monitoring, MIS provides monitoring and control tools that allow managers to continuously track the performance of various organizational units and prevent potential deviations. These systems, by creating transparency in performance and providing up-to-date information, help improve decision-making processes and increase intra-organizational trust (Singh et al., 2019). Additionally, MIS plays a significant role in promoting innovation and continuous improvement. By analyzing data and customer feedback, organizations can

identify market needs and expectations and design and offer new products and services. These systems, by supporting research and development processes, help organizations remain innovative in competitive markets and achieve competitive advantages (Puccetti et al., 2023). Finally, it should be mentioned that MIS, by supporting organizational strategies and coordinating between different units, helps improve organizational synergy and efficiency. These systems, by providing strategic information and facilitating the implementation of plans, help organizations achieve their long-term goals and achieve sustainable success in complex and dynamic environments. In summary, MIS are critical tools for improving decision-making, increasing productivity, enhancing communication, controlling and monitoring, and supporting organizational strategies, playing a significant role in the success and sustainable development of organizations (Naser et al., 2019).

### **Marketing Strategy**

A marketing strategy is a set of plans, decisions, and actions that organizations design and implement to achieve their marketing goals. This strategy includes market analysis, identifying target customers, determining competitive advantages, and developing diverse marketing programs. The main goal of a marketing strategy is to create value for customers, thereby increasing market share, improving customer relationships, and enhancing organizational profitability. Initially, the organization must thoroughly analyze the market and external environment to identify opportunities and threats. Then, based on competitive advantages and internal resources, target market segments are selected, and distinct strategies are designed for each segment. These strategies may include pricing, distribution, promotions, and product development. Finally, by continuously monitoring and evaluating the performance of implemented strategies, the organization can adapt and improve these strategies to achieve its marketing goals and succeed in a

competitive environment (Sintani et al., 2023). To achieve a successful marketing strategy, organizations must consider various factors. One of the most important factors is a precise understanding of customers' needs and wants. This understanding can be obtained through market research, surveys, and customer data analysis. With this information, organizations can design their products and services to best meet customer needs (Alsukaini et al., 2023). It is worth mentioning that an effective marketing strategy also requires selecting appropriate channels for communicating with customers. These channels can include social media, online advertising, content marketing, email marketing, and other communication methods. Choosing the right channels helps organizations effectively convey their marketing messages to target audiences and engage more with them (Feld and Hathaway, 2020). Moreover, appropriate pricing is a key component of the marketing strategy. Prices should be set in a way that reflects the value of the product while also being attractive to customers. Pricing strategies may include discounts, special offers, and loyalty programs that can encourage customers to purchase and return (Feller et al., 2021). Additionally, the distribution of products is another critical element of the marketing strategy. Organizations must ensure that their products are delivered to customers on time and in good quality. This can be achieved through selecting suitable distribution partners, managing the supply chain, and optimizing logistics processes. Promotions and advertising also play an important role in the marketing strategy. Through targeted advertising campaigns, organizations can increase brand awareness, highlight the unique features of their products, and encourage customers to buy. Advertising tools can include television, radio, print, and digital advertisements (Li et al., 2021). It is important to note that a marketing strategy must be flexible and adaptable. Markets and customer behaviors change rapidly, and organizations must be able to respond to these changes. This requires

continuous monitoring of marketing performance and evaluating the results. Using data and feedback, organizations can improve their strategies and get closer to their long-term goals. In fact, the marketing strategy should be aligned with the overall strategy of the organization. This alignment helps the organization make the best use of its resources and maximize the effectiveness of marketing efforts. With a comprehensive and effective marketing strategy, organizations can lead in competitive markets, increase customer satisfaction, and achieve sustainable success (Theodosiou & Leonidou, 2003).

### **Research Methodology**

In this research, a combination of interviews with three-stage coding and a questionnaire was used to Designing a Support Management Information Systems Model for penetration strategies of Iranian beverages to international markets and its validation; thus, this research is mixed-methods. Therefore, depending on the type of data and conditions, both qualitative and quantitative approaches were used for the study. Initially, through the use of qualitative data obtained during exploratory research, including exploratory literature review and conducting exploratory (semi-structured) interviews where interview questions are predetermined, and the same questions are asked of all respondents, allowing them to freely express their views on the study subject. Then, in the course of the present study, experts' opinions on the management of information systems and marketing strategies were revealed using the survey method. Given the mentioned points, this research is exploratory. The analysis method of this research is mixed (quantitative and qualitative). The statistical population of this research includes experts in the field of international product marketing, and the sampling method in this research is purposeful. The sample size in this study was selected using the snowball sampling method. In this method, future sample members are selected through previous sample members, and the sample grows like

a snowball. For example, in qualitative interview research, individuals are asked if they recommend someone else for an interview, thus expanding the sample. If this sampling is done using social media, it is called virtual snowball sampling. The primary application of the snowball method is studying hidden populations. This sample starts with an initial number of individuals, who are then asked to recommend others they think are suitable for the research program. It is possible that research groups exist from which sampling can be done. Finally, by studying the personality and lives of individuals, we must ensure a wide range of people are present in our sample. This research was conducted using the grounded theory method.

## Research Findings

Given the qualitative nature of the research, a grounded theory approach was used for analysis, leading to identifying the penetration strategies of Iranian drinks in the international market. The stages of grounded theory include three main stages: open coding, axial coding, and selective coding. In the first stage, interview themes are extracted as codes. In the second stage, or axial coding, themes are placed under components, and in the third stage, components are categorized into larger dimensions, forming the final model. The next stage is open coding. As shown in Table 1, all three stages are illustrated.

Table 10  
*Three-Stage Coding Through Grounded Theory*

| Open Coding  | Axial Coding  | Selective Coding   |   |
|--|---|--|---|
| Competitor Analysis, SWOT Analysis, Market Research, Pricing, Advertising Strategies, Target Customer Identification, Market Trend Analysis, Customer Needs Assessment, Consumer Preference Research, Competitor Identification, Marketing Opportunity Identification, Market Demand Analysis, Market Threat Assessment, Competitor Strengths and Weaknesses Analysis, Consumer Behavior Study, Economic Conditions Assessment, Environmental Opportunities and Threats Analysis, Pricing Strategy Determination, Target Market Research, Competitor Identification, Market Changes Analysis, Regional Competition Analysis, Global Trend Analysis, Competitor Analysis, New Market Identification, Customer Needs Assessment<br>Competition in the European Market - Consumer Preferences in the Asian Market - Impact of Social Media Platforms in the Latin American Market | Competitor analysis, customer needs, market trends, pricing, target customer, advertising competition analysis<br>Identifying market trends<br>Consumer preferences   | Market characteristics (market analysis and selection of target markets) | 1 |
| Quality Analysis, Packaging Evaluation, Innovation Review, Product Diversity Analysis, Technical Specifications, Standards Review, Research and Development, Quality of Raw Materials, Technical Capabilities Assessment, Standards Evaluation, Durability and Resistance Review, Product Testing and Evaluation, Consumer Feedback Analysis, Product Feature Assessment, Performance Analysis, Appearance Specifications Review, Technical Needs Assessment, Comparative Evaluation, New Capabilities Research, Competitive Features Review, Innovation Review, Packaging Evaluation, Quality Analysis, Product Quality Evaluation, Competitive Features Review, Product Quality Assessment,  | Compliance with international quality and packaging standards.<br>Designing attractive and modern packaging that is liked by foreign consumers.<br>Providing diverse products according to different tastes of the market<br>International standards, attractive packaging, product variety, Product quality, innovation, | Product characteristics (production and packaging)                       | 2 |

| Open Coding  | Axial Coding  | Selective Coding                                  |   |
|--|---|---|---|
| Technical Needs Review, Competitive Features Analysis<br>Use of Natural Sweeteners<br>Emphasis on Health Benefits<br>Combination of Iranian Flavors in the Asian Market  | packaging, product variety, technical specifications, standard compliance<br>New product development<br>Using natural materials<br>Optimizing flavors   |   |   |
| Creating a strong and reliable brand in target markets.<br>Using social networks and digital advertising to introduce products.<br>Using local media in target markets to promote products<br>Digital advertising, content marketing, public relations, brand building, outdoor advertising, sales strategies, advertising campaigns, advertising effectiveness analysis, brand analysis, marketing tactics review, content strategy determination, PR impact evaluation, social media advertising, campaign analysis, branding impact assessment, outdoor advertising effectiveness analysis, sales method review, online advertising impact evaluation, advertising strategy analysis, consumer behavior analysis, advertising effectiveness assessment, consumer behavior analysis, sales tactics review, advertising strategy analysis, online advertising impact assessment<br>Designing social media campaigns for the market<br>Tailoring messages for specific audiences<br>Using targeted advertising | Strong branding<br>Digital advertising<br>Local advertising<br>Online advertising, content strategies, public relations, branding, outdoor advertising, sales strategies<br>Using MIS data<br>Personalizing campaigns<br>Using social media | Marketing and branding strategies and advertising | 3 |
| Cultural impact, occasions, shopping habits, consumer preferences, social networks, media influence, cultural analysis, local occasion study, shopping habit review, consumer preference analysis, media influence on consumer behavior, cultural impact assessment, social network role review, cultural occasion analysis, social impacts, media role review, cultural consumer behavior analysis, cultural changes review, social impact assessment, media role in advertising review, social impact analysis, culture's role in marketing review, media influence analysis, social networks role assessment, occasion impact review<br>Attention to cultural differences in branding strategy<br>Development of halal products for Muslim markets<br>Emphasis on cultural identity in flavors  | Cultural impact, shopping habits, consumer preferences, social networks, media influence<br>Adapting to different cultures<br>Identifying local needs<br>Understanding cultural differences   | Cultural and social factors                       | 4 |
| Competitive analysis, growth opportunities, legal barriers, environmental threats, strengths and weaknesses, SWOT analysis, competitor review, identification of growth opportunities, legal review, environmental threat assessment, strength analysis, weakness review, opportunity analysis, threat review, legal assessment, competitive situation analysis, international law review, environmental threat evaluation, regional competition analysis, new opportunity analysis, organizational strength assessment, market weakness review, opportunity and threat assessment, market situation analysis, competitor weakness evaluation, environmental threat  | Competition, growth opportunities, legal barriers, environmental threats, strengths and weaknesses, SWOT analysis<br>Facing competition<br>Identifying new opportunities<br>Analyzing consumer behavior                                     | Market challenges and opportunities               | 5 |



| Open Coding   | Axial Coding   | Selective Coding  |   |
|---|--|---|---|
| analysis, new law assessment, growth opportunity review, competitor strength analysis<br>Utilizing MIS data for market opportunity identification<br>Developing new products to meet consumer needs<br>Competing with international competitors | Human resource management, information systems, work processes, leadership, change management, organizational communication, human resource analysis, information systems review, work process analysis, leadership style assessment, change management review, organizational communication analysis, information system evaluation, internal process analysis, leadership style review, organizational change analysis, resource management system evaluation, information systems review, process efficiency analysis, change impact assessment, communication system review, managerial style analysis, management information system evaluation, communication efficiency review, leadership style analysis, change management system assessment, work process review, management impact evaluation, leadership role analysis<br>Automating marketing tasks<br>Using artificial intelligence algorithms<br>Creating customer loyalty programs | Managerial and organizational processes<br>Optimizing marketing processes<br>Using new technologies<br>Improving customer relationship management | 6 |
| Creating effective and extensive distribution networks in target markets.<br>Collaborate with local distributors and vendors to increase product availability.  | Distribution network development<br>Cooperation with local distributors  | Distribution and sales network  | 7 |
| Checking competitors' prices and setting competitive prices for products<br>Provide discounts and special offers to attract new customers   | Pricing analysis<br>Discounts and special offers   | Competitive pricing   | 8 |

In the end, after determining the components of the grounded theory paradigm model for our research topic, the initial model developed in the qualitative section is presented as follows:

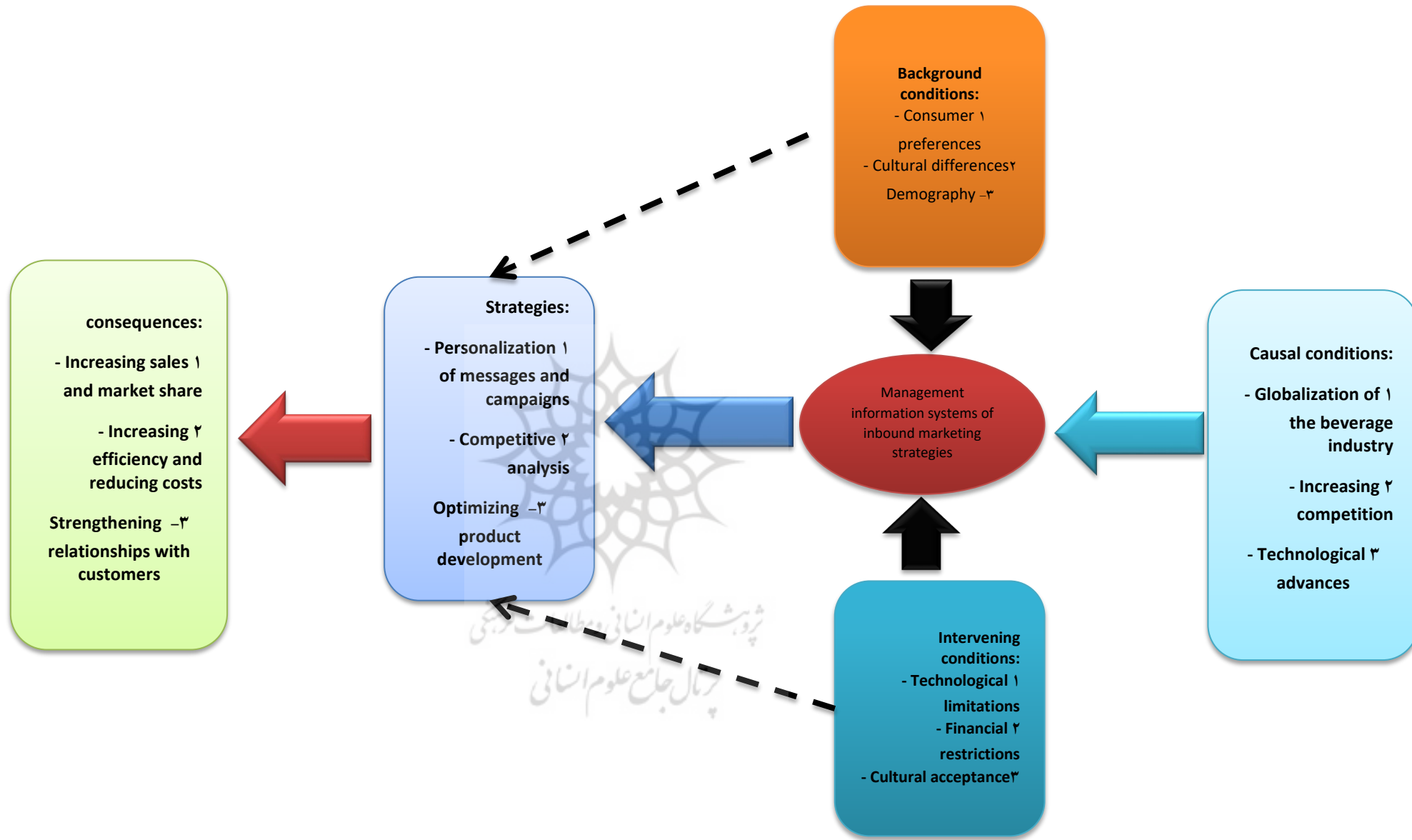


Figure 1 - The initial model of research based on grounded theory

Before entering the stage of testing the hypotheses and the conceptual model of the research, it is necessary to ensure the accuracy of the measurement models of exogenous and endogenous variables. This work has been done through confirmatory

factor analysis. In order to analyze the structure of the questionnaire and discover the factors that make up each structure, factor loadings have been used. The results of factor loadings of research variables are shown in Figure 2.

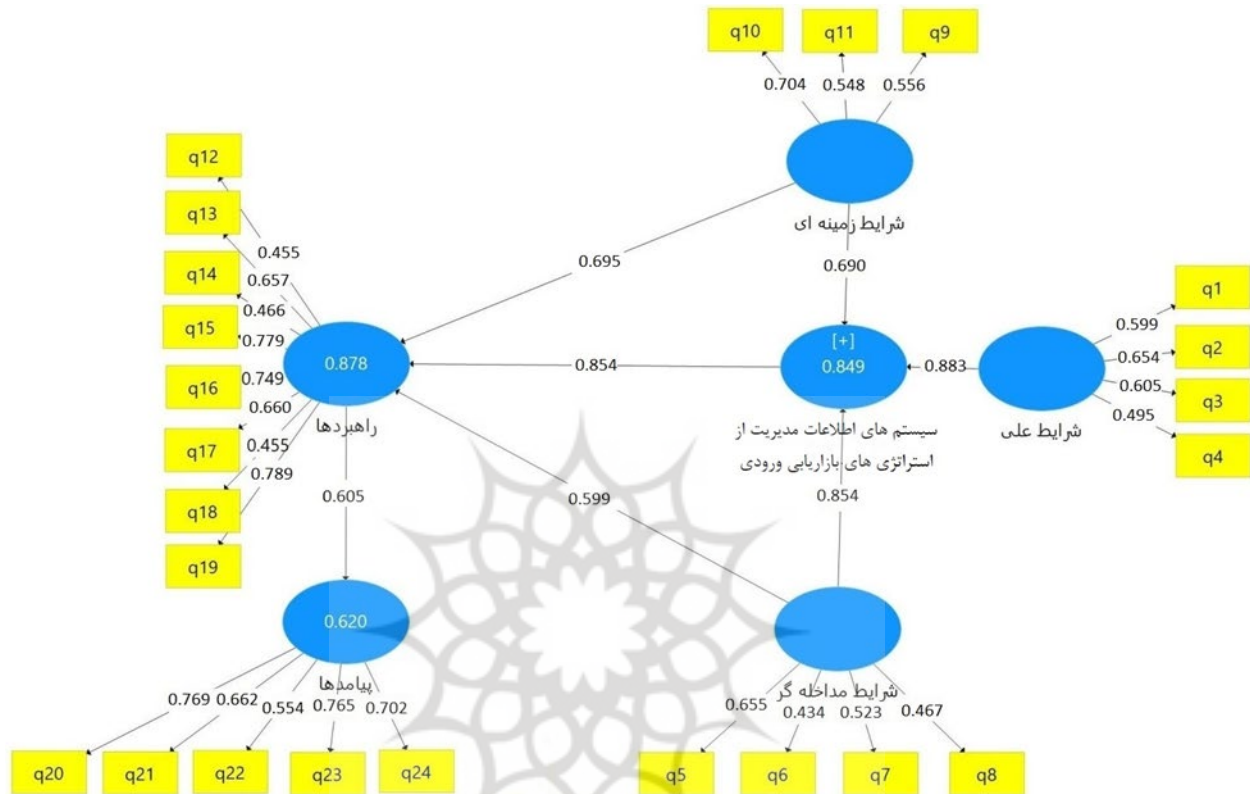


Figure 2. Final standardized model of factor loading

At this stage, it was observed that all factor loading values of research questions are more than 0.40. Therefore, the alignment of questionnaire questions to measure concepts can be shown as valid in this stage. In fact, the above results show that what the researchers intended to measure with the questionnaire questions has been achieved by this tool. Therefore, the relationships between constructs or hidden variables can be cited. An index with a higher factor load

is more important than other indices. The measurement model is a part of the overall model that includes a variable along with questions related to that variable. Therefore, to analyze the general model of this research, we need to examine the existing measurement models. Three criteria of reliability, convergent validity and divergent validity are used to check the performance of measurement models.

Table 2.

Factor loading coefficients, Cronbach's alpha-composite reliability, convergent validity

| Cronbach's alpha coefficients | (CR)          | (AVE)          | Explicit variables   |
|-------------------------------|---------------|----------------|--|
| $\alpha \geq 0/7$             | $CR \geq 0/7$ | $AVE \geq 0/4$ |  |
| ۰/۸۳۰                         | ۰/۷۹۵         | ۰/۶۶۹          | Management information systems of inbound marketing strategies |

| Cronbach's alpha coefficients | (CR)          | (AVE)          | Explicit variables     |
|-------------------------------|---------------|----------------|------------------------|
| $\alpha \geq 0/7$             | $CR \geq 0/7$ | $AVE \geq 0/4$ |                        |
| •/۷۳۲                         | •/۸۲۳         | •/۵۵۶          | Strategies             |
| •/۹۲۰                         | •/۷۲۴         | •/۴۵۰          | Background conditions  |
| •/۹۴۴                         | •/۷۷۷         | •/۷۲۰          | Causal conditions      |
| •/۷۳۵                         | •/۷۳۲         | •/۷۳۵          | Intervening conditions |
| •/۸۶۹                         | •/۷۹۲         | •/۴۹۲          | consequences           |

Investigating divergent validity is through the degree of relationship between the structure and its indicators, comparing the relationship of that structure with other structures; In such a way that the acceptable divergent validity of a model indicates that a construct has more interaction with its indicators than with other constructs. Divergent validity is acceptable when the AVE for each construct is greater than the shared variance of that construct and other constructs (the square of the correlation

coefficients between constructs) in the model. This is checked by a matrix, the cells of this matrix contain the values of the correlation coefficients between the constructs and the square root of the AVE values of each construct. An example is shown in Table 22-4. Then we replace the values on the main diameter of the matrix with the square root of the variance values described in AVE and finally table 3 is presented.

Table 3.

*Fornell-Larker table after placing the square root values of AVE*

| Management information systems of inbound marketing strategies | Strategies | Background conditions | Causal conditions | Intervening conditions | consequences |
|--|------------|-----------------------|-------------------|------------------------|--------------|
| Management information systems of inbound marketing strategies | •/۶۷۵      |                       |                   |                        |              |
| Strategies   | •/۶۲۵      | •/۸۴۴                 |                   |                        |              |
| Background conditions  | •/۶۰۲      | •/۵۷۳                 | •/۸۲۱             |                        |              |
| Causal conditions  | •/۵۴۴      | •/۶۸۵                 | •/۶۱۵             | •/۸۳۴                  |              |
| Intervening conditions   | •/۵۰۳      | •/۶۲۴                 | •/۵۹۳             | •/۷۰۳                  | •/۸۳۰        |
| consequences   | •/۵۰۱      | •/۷۸۷                 | •/۵۹۲             | •/۷۵۹                  | •/۶۰۳        |

As can be seen in the table above, the values on the main diameter of the matrix are greater than all the values in the corresponding row and column. Now, in order to structurally fit the model, we act as

follows. In the following, we apply the three criteria "R2", "Q2" and "F2" to fit the structure of the research model. Table 4 shows the values of these three criteria for the dimensions of the research model:

Table 4.

*Values of three criteria for fitting the research model*

| Q <sup>2</sup> | R <sup>2</sup> | Indicator       | Dimensions | row |
|----------------|----------------|-----------------|------------|-----|
| Weak 0.02      | Weak 0.19      | Threshold value |            |     |
| Average 0.15   | Average 0.33   |                 |            |     |

|                      |                      |  |                                |   |
|----------------------|----------------------|--|--------------------------------|---|
| 0.35 strong<br>0.221 | Strong 0.67<br>0.849 | value                                  | Management information systems | 1 |
| strong<br>0.307      | strong<br>0.876      | Result (strong/moderate/weak)<br>value |                                |   |
| strong<br>0.192      | strong<br>0.618      | Result (strong/moderate/weak)<br>value | Strategies                     | 2 |
| moderate             | strong               | Result (strong/moderate/weak)          | consequences                   | 3 |

In addition to these two criteria, the "F2" criterion also determines the intensity of the relationship between the constructs of the model. The values of 0.02, 0.15 and 0.35

indicate the intensity of weak, medium and strong relationship, respectively. The value of this criterion can be seen in Table 5:

Table 5.  
*Values of F2 criterion for fitting the research model*

|  | Management information systems | Strategies      | consequences   |
|--|--------------------------------|-----------------|----------------|
| Management information systems of inbound marketing strategies |                                | 3/343<br>strong |                |
| Strategies   |                                |                 | 1/59<br>strong |
| Background conditions  | 0.475<br>strong                | 0.350<br>strong |                |
| Causal conditions  | 0.367<br>strong                |                 |                |
| Intervening conditions   | 0.788<br>strong                | 0.249<br>strong |                |

Finally, using the "goodness of fit" criterion, we evaluate the overall research model. We use equation 1 to calculate GoF. Three values of 0.01, 0.25 and 0.36 are respectively weak, medium and strong values for GoF. This criterion is the geometric mean of the average coefficient of multiple

determination in the average of commonality. The geometric mean is R2 and the common mean. In the following table, the results related to the test of relationships between research variables are presented according to Figure 2:

Table 6.  
*Test of relationships between research variables*

| Results                      | P values (significance level) | T     | (STDEV) | Path coefficient | Relationships   |
|------------------------------|-------------------------------|-------|---------|------------------|---|
| Confirmation of relationship | 0.000                         | 4/880 | 0.011   | 0.854            | Management information systems <-Strategies             |
| Confirmation of relationship | 0.000                         | 3/598 | 0.016   | 0.605            | Strategies <-consequences                               |
| Confirmation of relationship | 0.000                         | 7/644 | 0.037   | 0.690            | Background conditions <- Management information systems |
| Confirmation of relationship | 0.000                         | 5/137 | 0.030   | 0.695            | Background conditions <- Strategies                     |

| Results                      | P values<br>(significance<br>level) | T     | (STDEV) | Path coefficient | Relationships   |
|------------------------------|-------------------------------------|-------|---------|------------------|---|
| Confirmation of relationship | ./... .                             | 7/789 | ./... . | ./883            | <i>Causal conditions &lt;-<br/>Management information<br/>systems</i> |
| Confirmation of relationship | ./... .                             | 4/655 | ./... . | ./854            | Intervening conditions <-<br>Management information<br>systems        |
| Confirmation of relationship | ./... .                             | 3/337 | ./... . | ./599            | Intervening conditions <-<br>Strategies                               |

## Discussion

In the era of globalization and fierce competition in international markets, Iran's beverage industries need efficient and innovative marketing strategies to increase their share of global markets. The design and implementation of management information systems can play a role as a powerful tool in this direction. The research findings of 8 factors that include market characteristics (market analysis and selection of target markets), product characteristics (production and packaging), marketing and branding strategies and advertising, cultural and social factors, market challenges and opportunities, managerial and organizational processes, Distribution and sales network, and competitive pricing. And the coefficient of the factorial path is more than 0.4, which shows that the paths and assumptions of our research have been confirmed. This research was conducted with the aim of designing a model for management information systems that supported the marketing strategies of Iranian beverages at the international level and its validation. Using grounded theory as a research method helps to identify and explain the key success factors in this field. This model can lead to the improvement of marketing decisions, increasing operational efficiency and improving the competitiveness of Iranian companies in global markets. In the complex and dynamic environment, management information systems provide managers with valuable information that can help optimize marketing strategies and decisions by aggregating, processing, and analyzing marketing-related data. By providing analytical reports and management dashboards, these systems

allow organizations to react quickly and take appropriate actions to attract and retain international customers. In this research, the needs and challenges in the marketing of Iranian beverages at the international level are first investigated. Then, using the grounded theory method, a comprehensive model for management information systems was designed that can specifically support these marketing strategies. Validation of the proposed model was another part of this research. For this purpose, the model was tested and evaluated using real data and through valid scientific methods.

Based on the analysis done and the coding done on the interviews, it can be concluded that in order to be successful in the international markets, Iranian companies in the field of beverages must pay attention to market characteristics, product characteristics, marketing strategies, cultural and social factors, market challenges and opportunities, and Management and organizational processes should be given special attention. From analyzing competition and identifying market trends to developing new products and using natural ingredients, all these factors can help optimize marketing strategies. In addition, adapting to different cultures and understanding local needs can play an important role in the success of marketing strategies. Also, using new technologies and optimizing management processes can help improve customer relationship management and increase productivity. Finally, analysis of consumer behavior and identification of new opportunities can help to identify and exploit market opportunities and cause sustainable

growth and development of Iranian companies in international markets.

It is worth mentioning that to succeed in international markets, Iranian companies must pay attention to some other key factors. First, it is critical to accurately identify consumer preferences in each target market. This includes analyzing the buying behavior, tastes, and needs of different consumers in different geographic regions. With this information in mind, companies can tailor their products to match local needs and be most attractive to consumers. Second, marketing strategies must be designed strictly based on accurate data and information. The use of management information systems allows companies to collect and analyze market data and make intelligent decisions based on them. This includes identifying market trends, analyzing competitors, and predicting market changes. The third important factor is the emphasis on the use of new technologies in management and organizational processes. For example, the use of AI algorithms can help automate marketing tasks, improve ad targeting, and optimize customer experiences. These technologies can also play an important role in identifying new opportunities and accurately analyzing consumer behavior.

In addition to these cases, companies should also pay special attention to cultural and social factors. Adapting to different cultures and understanding cultural differences can help design successful branding strategies and develop appropriate products for different markets. For example, paying attention to the specific needs of Muslim markets, such as the production of halal products, can open up new markets for companies. Finally, facing challenges and taking advantage of market opportunities requires a dynamic and flexible approach. Companies must be able to quickly react to market changes and adjust their strategies based on new conditions. This requires having strong management teams and using efficient management processes. Therefore, according to the analysis, it can be concluded that the combination of smart marketing

strategies, use of new technologies, deep understanding of consumer needs and preferences, and attention to cultural and social factors can lead to sustainable success of Iranian companies in international markets. This comprehensive and comprehensive approach allows companies to stand in front of competitors and take a greater share of global markets. Considering the importance and high potential of international markets for the penetration of Iranian beverages, comprehensive and intelligent strategies should be used to achieve this goal effectively and sustainably. Accurate analysis of target markets, understanding the needs and tastes of foreign consumers, and evaluating competitors are the first necessary steps in this direction. Producing high-quality products in accordance with international standards, attractive and modern packaging, and diversifying products can help create attractiveness and strong branding. Using effective branding and advertising strategies, especially in the digital space and social networks, plays an important role in increasing awareness and attracting new customers. Establishing extensive distribution networks and cooperation with local distributors ensures easy access to products for consumers. Competitive pricing and offering discounts and special offers can also help attract and retain customers. Content marketing and cooperation with influencers and famous people can have positive effects on the introduction and popularity of products. Active presence in international exhibitions and events provides good opportunities for direct introduction and communication with new customers and distributors. Local research and adaptation of products to different needs and tastes of the target markets are also of particular importance. Finally, using the combination of these comprehensive strategies and approaches and appropriate to the conditions of different markets, can bring Iranian beverages to a suitable position in the international markets and increase their market share significantly. Continuous

application of these strategies and continuous evaluation of results will help ensure long-term success and sustainability in this direction.

In general, in today's world, where globalization and intense competition of international markets are rapidly evolving, Iranian beverage companies need a strategic and comprehensive approach to penetrate and stabilize their position in these markets. The results of this research show that management information systems can play an essential role in supporting the international marketing strategies of these companies. Designing and implementing a comprehensive MIS model, which is developed based on the specific needs and challenges of target markets, can help Iranian beverage companies not only compete in international markets, but also become major players in these markets over time. This research has managed to identify and explain the key factors of success in this field by using the basic theory and validated the proposed model accurately and scientifically. This model allows companies to make smart decisions based on accurate information through the aggregation and analysis of marketing-related data. This is especially important in the face of rapid market changes and the diverse needs of international consumers. Therefore, the proposed model of this research can help companies to optimize their operational processes and increase their competitiveness in international markets by creating accurate and targeted marketing strategies. On the other hand, due to the increasing importance of new technologies, such as artificial intelligence and big data analysis, this model can help companies to optimize their marketing by using these technologies and quickly respond to the needs of target markets. In addition, this research showed that adapting to local cultures and understanding the needs of consumers in different global markets is of great importance. This issue is especially effective in designing new products and improving branding strategies of Iranian beverage companies. By using this model,

Iranian companies can simultaneously focus on the challenges and opportunities of international markets and optimize their strategies through the detailed analysis of consumer behavior and the identification of market trends. Finally, this research shows that combining marketing strategies based on accurate information, using new technologies, and paying attention to the cultural and local needs of target markets can lead to sustainable success of Iranian beverage companies in international markets. By applying this comprehensive approach, Iranian companies can stand up well against their competitors and take a larger share of global markets, and in this way, achieve a stronger and more stable position in the global arena. At the end, the practical suggestions of the research were presented:

- The research should identify and analyze the target markets more precisely. For this purpose, the use of market analysis tools such as SWAT analysis (strengths, weaknesses, opportunities and threats) as well as the use of accurate statistical data can be helpful.
- Conducting field research and using consumer surveys can also help to better understand the needs and preferences of the target market.
- It is suggested that companies use new technologies such as artificial intelligence and machine learning to analyze market data and predict future trends. These technologies can help automate marketing processes and improve ad targeting.
- One of the other important suggestions is that the products are designed and developed in such a way that they are in harmony with the local needs and tastes of each market. For example, producing halal products for Muslim markets or using natural and healthy ingredients for health-conscious markets can be successful.
- Using digital marketing strategies such as social media advertising, search engine optimization (SEO), and content marketing can help attract new customers



and increase brand awareness. Also, it is essential to use digital data analytics to improve digital marketing strategies.

- Understanding and adapting to the cultural and social factors of each market can help improve communication with consumers and increase their loyalty. Conducting marketing campaigns that respect cultural identity and local values can have a significant impact on marketing success.
- It is suggested to organize training and professional development programs for management and marketing teams of companies. These programs can include training in the fields of information management, use of new technologies, and market analysis.
- Improvement and development of distribution networks can help better and faster access of products to the target markets. This includes cooperation with local distributors, use of new logistics technologies, and supply chain optimization.
- Using continuous feedback systems from customers can help to quickly identify problems and new needs. These feedbacks should be analyzed periodically and used to improve products and marketing strategies.

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