The Impact of lean supply chain strategy on consumers' purchasing behavior: the case of dental hospitals

Murat Basal[1*] and *Omer Faruk* Sarkbay[1]

[1]Istanbul Gelisim University, Cihangir Dist. Sehit Jandarma Komando Er Hakan Oner Str. No:1 Avcilar, 34310, Istanbul, Turkey

Abstract. The purpose of this research is to investigate the effects of the lean supply chain strategy on the purchasing behavior of consumers. Demographic questions, lean supply chain strategy scale and consumer purchasing behavior scale were used to collect the data of the research. The main body of the research consists of 30,584 patients hospitalized in private dental hospitals operating in the European side of Istanbul. In this context, the characteristics of the lean supply chain, known as optimizing and simplifying all supply chain processes, reducing waste and focusing on eliminating activities that do not add value, the features that affect the consumers, the effects of the brand on the consumer, the effect of the campaigns on the purchasing decisions of the consumers have been investigated. As a result of the regression analysis, it has been determined that the lean supply chain strategy has a positive effect on consumer purchasing behavior. **Keywords:** Lean Management, Lean Supply Chain, Consumer, Purchasing Behaviour.

1 Introduction

Because "Lean Supply Chain Management" influences consumer purchasing behavior, businesses must meet ever-increasing customer expectations while keeping costs as low as possible in a global competitive environment. As a result, businesses are constantly looking for new competitive methods in supply chain management in order to carry out their activities profitably. Customers, profitability, efficiency, competitive advantage, and sustainability are the primary driving forces behind business transformation in this context (Salaj, 2011: 81).

Lean supply chain strategies promote consumer-business collaboration, improve performance, increase consumer satisfaction, and ensure continuity. By designing alternative products, a supply chain activity with responsive and flexible performance can effectively identify customer needs and meet consumer needs in line with expectations (Ralston, et al., 2015: 47).

*Corresponding author: mbasal@gelisim.edu.tr

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (http://creativecommons.org/licenses/by/4.0/).

2 Conceptual famework

The lean supply approach includes practices that improve consumer satisfaction with goods and services, shorten delivery processes without compromising product quality, and reduce waste and costs (Monczka, Callahan ve Nichols, 1995: 57).

2.1 Lean Management Concept

Lean supply chain management refers to the activities involved in ensuring customer satisfaction, reducing lead time, preventing waste, and ensuring service continuity (Ohno, 1988: 46). It is the goal of lean management to improve service quality, reduce waste in production activities, reduce delivery costs, increase customer satisfaction, and make the organization more competitive (Lichtarski, 1997: 224).

2.2 Lean Management in Healthcare

When it comes to the organization, planning, management, development, and coordination of health services, lean management approaches significantly benefit the health sector. One of the widely acknowledged management concepts, "Lean Six Sigma," incorporates systematic operations used for process improvement, error elimination, and waste reduction.

The "lean six sigma business philosophy" is defined as a systematic approach to radical practices, continuous improvement, waste prevention, and the identification of activities with added value in order to attain the greatest degree of performance. Due to its benefits in the areas of safety, quality, and efficiency, lean implementation in hospitals and health services is becoming more necessary (Seggie, Kim and Cavusgil, 2006: 887).

Lean thinking practices have a favorable impact on the public service quality, transaction costs, patient satisfaction, and employee motivation in the healthcare industry. To achieve the maximum degree of service quality in the healthcare industry, lean management practices should be implemented as cooperatively as feasible throughout all health enterprises. Due to patient data exchange, constant information flow, and other factors, the system infrastructures of such organizations should be very effective and administered in the most effective manner. (Kadarova and Demecko, 2016: 15).

2.3 Lean Supply Chain Management

To continue operating profitably in marketplaces where competition takes on global dimensions, businesses must perform supply chain management tasks in a professional manner. For improved quality and more profitability, more investment, and satisfied customers, the supply chain management is essential. On the other hand, it is crucial to manage the supply chain in a lean manner during the purchasing process, which is defined as finding the goods and services produced by businesses in the required location at the proper time, in the desired amount, and in the intended quality. Preventing a break or disruption in one of the connections in the supply chain between businesses, suppliers, and customers is crucial for the continuity of services (Arend and Wisner, 2005: 403).

To maximize all activities as a whole from the viewpoint of the end customer, lean management principles and practices can be applied throughout the supply chain, from the ordering process with suppliers to the product distribution and delivery to the customer. Waste is reduced and the consumer receives better service value when the lean supply chain process is approached holistically. A sustainable method to demand management is necessary to timely deliver better quality, more affordable service to the consumer. In a mutually beneficial way, the lean supply chain lowers service costs and enhances information flow

(Parkes, 2014: 121). By removing waste, enhancing quality, bringing down prices, and boosting flexibility at every stage of the supply chain, lean supply chain management is made possible. In other words, lean supply chain practices save service costs and quicken the exchange of information across healthcare institutions (Womack and Jones, 1996: 44).

Activities related to lean supply chain management are intended to improve the outcomes to be achieved in the chain as a whole, reduce business risk through joint investments in R&D and technology, reduce inventories, improve product quality, increase know-how through collaborative product design, or generally reduce waste along the supply chain. (Perez, et al., 2010: 55).

According to Daud (2010: 99), lean supply chain management primarily aims to create a cost-efficient supply chain by focusing on reducing waste, inventory and lead time. The lean strategy helps manufacturing organizations continuously and methodically eliminate waste from inefficient processes like defective products, overproduction, transportation, inventory, and over-processing by proactively identifying and eliminating non-value-added activities in all operational processes. Lean management techniques are put into practice to make sure that suppliers are chosen based on price and quality, the capacity is used to its fullest potential, the economies of scale can be utilized, the technology optimization is taken into consideration, and the links between information are strengthened. As a result, the effective use of the lean strategy can give businesses a competitive edge, improve performance, lower costs, increase inventory turnover, and stop waste in operations. Therefore, these benefits can spur businesses to adopt a lean supply chain approach (Borgström and Hertz, 2011: 370).

2.4 Factors Affecting Consumer Behavior

According to Kahn and Isen (1993: 268), consumer behavior is defined as the totality of activities such as the acquisition, consumption, return, repurchase, and abandonment of goods or services by consumers. With the exception of situations when unfavorable product qualities were highlighted, consumers in a good mood were observed to exhibit higher variety-seeking behavior. Once the stimuli have been classified in this situation, consumers may decide to think more about them and generate new beliefs, or inferences, based on the stimulus data.

Brand equity, which refers to the consumer's entire view and feeling about a brand and influences consumer behavior, is mostly driven by brand image. Regardless of the company's marketing strategies, for marketers, the main goal of marketing activities is to influence consumers' perception and attitude toward a brand, cultivate the brand's image in consumers' minds, and encourage consumers to actually make purchases from the brand. This will help marketers increase sales, maximize market share, and increase brand loyalty. Purchase decisions are actually driven by consumer perceptions of the brand image, even though brand qualities and attributes will impact consumers' consumption decisions. Brand image continues to be the main element affecting customer decisions, even if consumer lives and the way they process information have changed (Zhang, 2015: 58).

Conducting communication campaigns is one method for changing the behavior of huge numbers of individuals. A communication campaign is a planned kind of communication that is conducted over time with a certain population in order to accomplish a particular objective. The usage of seat belts, dietary changes, medication use, exercise, dental care, social support, substance use prevention and cessation, family planning, utilization of health services, and testing and screening for diseases are just a few of the health behaviors that are promoted through campaigns (Snyder, 2001: 476).

3 Method

In this study, reliability, frequency, correlation, and regression analyses will be carried out on the data acquired with the use of the SPSS statistical analysis tool in order to identify cause-and-effect links using quantitative methodologies.

3.1 Purpose

The study's objectives are to ascertain how the lean supply chain strategy affects consumer purchasing behavior, to determine what consumers anticipate from supply chain activities, to pinpoint the elements that have a positive impact on consumer purchasing behavior, and to provide this information to researchers and businesses.

3.2 Research model and hypotheses

In this study, a quantitative approach was applied, and the scientific method was used to compare the data and analyze how the hypotheses related to one another. The thesis made use of pertinent literature, and the conceptual framework of the model is provided below.

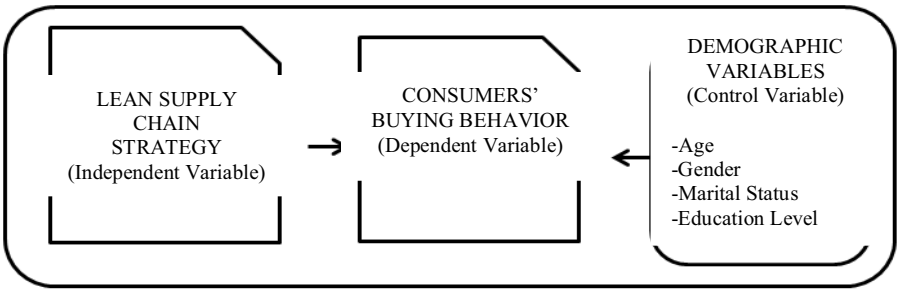

Fig 1. Research Model for the Relationship between Demographic Characteristics (Control Variable), Lean Supply Chain Strategy (Independent Variable) and Consumers' Purchasing Behavior (Dependent Variable).

Hypothesis

Main Hypotheses,

H1: Lean supply chain strategies and their impact on consumers' purchasing behavior.

H2: There is a statistical difference between demographic characteristics, lean supply chain strategies and consumers' purchasing behavior.

Sub-Hypotheses, H2:

H2a: There is a statistical difference between individuals' age, lean supply chain strategies and consumers' purchasing behavior.

H2b: There is a statistical difference between individuals' gender, lean supply chain strategies and consumers' purchasing behavior.

H2c: There is a statistical difference between individuals' marital status, lean supply chain strategies and consumers' purchasing behavior.

H2d: There is a statistical difference between individuals' education level, lean supply chain strategies and consumers' purchasing behavior.

3.3 Universe sampling of the study

The main mass of the study consisted of 30,584 patients in private dental hospitals operating in the European side of Istanbul. Therefore, in this study, the table for "Determination of

Universe Size and Sampling Volume" (Yazıcıoğlu and Erdoğan, 2004: 50) was used to determine the universe size and sampling number, and it was found that for a universe size of 30,584 people, a sampling size of 381 people with a sampling error of 5% would be adequate. However, in case all of the questionnaires were not returned or might be invalid, a questionnaire was applied to 450 people in order to conduct a sufficient number of questionnaires, 32 questionnaires were found to be invalid and the SPSS 21 statistical program was used to apply statistical analyses to the data obtained from the remaining 418 questionnaires. The questionnaire application for this study was run from 1 June 2022 to 25 August 2022. The "Simple Random Sampling" method, which gives everyone in the research universe equal chances, was used to select participants (De Vaus, 1990: 64).

3.4 Data collection tools for the research

Demographic questions, lean supply chain strategy scale and consumer purchase behavior scale were used to collect the data of the research.

1. Lean supply chain strategy scale; the 7-item "Lean Supply Chain Strategy Scale" that was developed by Qi, Y., Boyer, K. K. and Zhao, X. (2009: 692) and tested on a 5-point Likert scale was utilized in this study. The statements in the scale are "1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree" and the Cronbach's Alpha Value of the scale is 0.79 and it is stated that the scale is reliable.

2. Consumer Purchase Behavior scale; The "Consumer Purchase Scale," which consists of a total of 10 items and was designed by İşlek (2012: 81 p. 123) and validated for validity and reliability, was used to measure consumer purchasing behavior. The statements in the scale are in the form of "1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree" and the Cronbach's Alpha Value of the scale is 0.866 and it is stated that the scale is reliable**.**

4 Analysis of data

Reliability, frequency, difference, one-way anova, and regression analyses were used to analyze the data collected from the questionnaires for this study. The results of the analysis of the questionnaire data on demographic characteristics, lean supply chain strategies, and consumer purchasing behavior are given.

4.1 Reliability analysis for lean supply chain strategies and consumers' purchasing behavior

Cronbach's Alpha Coefficient value for reliability analysis is accepted as "scale is not reliable" for a value less than 0.4, "scale is low reliability" for a value between 0.4 and 0.6, "scale is highly reliable" for a value between 0.6 and 0.8, and "scale is highly reliable" for a value between 0.8 and 1.

Table 1. Reliability Analysis Cronbach's Alpha Values.

Scale Dimensions	Scale Reliability (Cronbach Alfa)
Lean Supply Chain Strategy	0.738
Consumer Purchasing Behavior	0.707

The study made use of two separate scales: the lean supply chain strategy and consumer purchasing behavior. Examining the lean supply chain strategy scale's reliability rating, Cronbach's Alpha (α =0.738), reveals that the scale is fairly reliable. The consumer's

purchasing behavior scale has a reliability score of Cronbach's Alpha of (α=0,707), which indicates that the scale is fairly reliable. The two scales' Cronbach's Alpha reliability ratings were therefore found to be extremely reliable.

4.2 Demographic results of the research

In this part of the research, findings related to the demographic information of the participants are presented.

Table 2. Frequency Table for Demographic Results.

		Frequency	Percentage
Gender	Male	404	96.7%
	Female	14	3.3%
Marital Status	Married	275	65.8%
	Single	143	34.2%
Age	18-25 age	10	2.4%
	26-34 age	7	1.7%
	35-42 age	334	79.9%
	42-51 age	67	16.0%
Educational level	Associate degree	63	15.1%
	Undergraduate	324	77.5%
	Postgraduate	31	7.4%

The survey was conducted with 418 participants. When the gender distribution of the participants is analyzed, it is found that 404 participants are male (96.7%) and 14 participants are female (3.3%). In addition, 143 (34.2%) of the participants were single and 275 (65.8%) were married. When the age distribution of the people who volunteered to participate in the study was analyzed, it was observed that 10 of them were between the ages of 18-25 (2.4%), 7 of them were between the ages of 26-34 (1.7%), 334 of them were between the ages of 35-42 (79.9%) and 67 of them (1.5%) were between the ages of 42-51 (16.0%). Finally, when the educational level of the participants was examined, it was found that 63 participants had associate's degree (15.1%), 324 participants had bachelor's degree (77.5%) and 31 participants had postgraduate degree (7.4%).

4.3 Regression Analysis on the Effect of Lean Supply Chain Strategy on Consumer Purchasing Behavior

The influence of the lean supply chain strategy on consumer purchasing behavior was examined using regression analysis.

Table 3. Regression Analysis Table

	Consumer Purchasing Behavior	
	B	T value
Constant Coefficient	1.471	0.000
Lean Supply Chain Strategy	0.665	0.000
Model Significance	0.000	
Description Percentage (r2)	0.767	

The r^2 values indicating the model significance ratio were calculated as 0.767 in the regression analysis used to investigate the impact of the lean supply chain strategy on consumer purchasing behavior. This figure allows us to conclude that the independent factors account for 76.7% of the dependent variable. It is feasible to state that the regression model fits are excellent as a result of the regression analysis applied between the variables when the

r^2 values, also known as the percentage of description, are analyzed. As a result, Table 5 contains the regression equation and its variables.

The hypothesis "H1: Consumer purchasing behavior has an impact on lean supply chain strategy" was put to the test using regression analysis. When the results obtained from the regression calculations are reviewed, it is found that the factor "Lean Supply Chain Strategy" (H1, p=0,000) confirms the H1 hypothesis and that it has a substantial (p.<0,05) impact on consumer purchasing behavior. The table in this context displays the regression equation and the features of the variables.

Table 4. Regression Equation Symbols and Correspondences for Altruism.

Symbols	Meanings	Corresponding Concept/Value
Y	Dependent Variable	Consumer Purchasing Behavior
X1	Independent Variable	Lean Supply Chain Strategy
β0	Constant Coefficient	1.471 (From the B values in the table)
β1	Coefficient of Independent Variable	0.665

The appropriate regression equation will be obtained when the variables and their symbol equivalents shown in the table associated with the regression equation are substituted in the equation $Y=\beta_0+\beta_1X_1$;

$Y = \beta_0 + \beta_1 X_1$ Consumer Purchasing Behavior = 1,471 + 0,665 "Lean Supply Chain Strategy"

When the regression equation is examined, it can be seen that "Consumer Purchasing Behavior" is positively impacted by "Lean Supply Chain Strategy." Consumer Purchasing Behavior will improve in value by 0.665 units for every 1-unit increase in the value of "Lean Supply Chain Strategy." In other words, a lean supply chain strategy positively influences consumer purchasing behavior by 66.5%.

4.4 Difference Analyses for Demographic Variables, Lean Supply Chain Strategy and Consumer Purchasing Behavior

In this section, "t-test" and "analysis of variance" were used to compare demographic variables to "Consumer Purchasing Behavior" and "Lean Supply Chain Strategy," and it was determined that there was a difference between the variables when the p values obtained after the tests were smaller than the alpha values (0.05).

4.4.1 Differential Analyses for Age and Lean Supply Chain Strategy and Consumer Purchasing Behavior

Table 5. One-Way Analysis of Variance Table for the Analysis of Differences between Age and Lean Supply Chain Strategy and Consumer Purchasing Behavior.

	Age	N	Average	f value	p value	Hypothesis
Lean Supply Chain Strategy	18-25 Age	10	4.4286	.656	.580	H2a1 Refused
	26-34 Age	7	4.2857			
	35-42 Age	334	4.4388			
	42-51 Age	67	4.3731			
Consumer Purchasing Behavior	18-25 Age	10	4.3556	.327	.806	H2a 2 Refused
	26-34 Age	7	4.3651			
	35-42 Age	334	4.4232			
	42-51 Age	67	4.3831			

H2a: There is a statistical difference between individuals' age, lean supply chain strategies and consumers' purchasing behavior.

One-way analysis of variance was used in the study to analyze the differences between the lean supply chain strategy and consumer purchasing behaviors in relation to age changes. The analysis revealed that there was no difference in the parameters of supply chain strategy (H2a $_1$; p=0,580) and consumer purchasing behavior (H2a 2; p=0,806) with respect to age (p>0,05).

4.4.2 Difference Analyses by Gender for Lean Supply Chain Strategy and Consumer Purchasing Behavior

Table 6. T-Test Table for the Difference Analysis by Gender between Lean Supply Chain Strategy and Consumer Purchasing Behavior.

	Gender	N	Average	t value	p value	Hypothesis
Lean Supply Chain Strategy	Male	404	4.4360	2.646	.008	H2b1 Accepted
	Female	14	4.1224			
Consumer Purchasing Behavior	Male	404	4.4172	.887	.375	H2b2 Refused
	Female	14	4.3254			

H2$_b$: There is a statistical difference between individuals' gender, lean supply chain strategies and consumers' purchasing behavior.

In this study, the t-test was used to compare the differences between the lean supply chain strategy and consumer purchasing behavior in relation to changes in gender. The analysis revealed that consumer purchasing behavior (H2b_2; p=0,375) did not differ depending on the individuals' gender (p>0,05). However, it was found that there was a difference according to the participants' gender for the firms' lean supply chain strategy practices (H2$_{b1}$; p=0,008) (p<0,05).

4.4.3 Differences Analysis for Marital Status and Lean Supply Chain Strategy and Consumer Purchasing Behavior

Table 7. T-Test Table for the Analysis of Differences between Marital Status and Lean Supply Chain Strategy and Consumer Purchasing Behavior.

	Marital Status	N	Average	t value	p value	Hypothesis
Lean Supply Chain Strategy	Married	275	4.4265	.064	.949	H2c1 Refused
	Single	143	4.4236			
Consumer Purchasing Behavior	Married	275	4.4214	.541	.589	H2c2 Refused
	Single	143	4.4002			

H2c: There is a statistical difference between individuals' marital status, lean supply chain strategies and consumers' purchasing behavior.

The t-test was used in the study to compare the differences between the lean supply chain strategy and consumer purchasing behaviors in relation to changes in marital status. The analysis revealed that there was no difference in the factors of consumer purchasing behavior (H2c $_2$; p=0,589) and supply chain strategy (H2c $_1$; p=0,949) according to marital status (p>0,05).

4.4.4 Difference Analyses for Education Level and Lean Supply Chain Strategy and Consumer Purchasing Behavior

Table 8. One-Way Analysis of Variance Table for the Analysis of Difference between Education Level and Lean Supply Chain Strategy and Consumer Purchasing Behavior.

	Educational level	N	Average	f value	p value	Hypothesis
Lean Supply Chain Strategy	Associate	63	4.3900	.383	.682	H2d1 Refused
	Bachelor	324	4.4356			
	Postgraduate	31	4.3917			
Consumer Purchasing Behavior	Associate	63	4.4515	.470	.625	H2d 2 Refused
	Bachelor	324	4.4105			
	Postgraduate	31	4.3763			

H2d: There is a statistical difference between individuals' education level, lean supply chain strategies and consumers' purchasing behavior**.**

One-way analysis of variance was used in the study to analyze the differences between the lean supply chain strategy and consumer purchasing behavior in relation to changes in educational status. The analysis revealed that neither the factor of consumer purchasing behavior (H2d $_2$; p=0,625) nor the factor of supply chain strategy (H2d $_1$; p=0,682) varied with regard to educational status (p>0,05).

5 Conclusion and Discussion

The purchasing process of the consumer is significantly influenced by a practical and accessible supply chain strategy. In other words, customers seek out goods that may satisfy their wants in the simplest and most practical manner. Therefore, it is easier to draw customers when the process is made increasingly simple. In this regard, it has been found that the improvements achieved in the lean supply chain strategies of the businesses have a favorable impact on consumers' purchasing behavior as a result of the regression analysis carried out in this study. Jazairy et al. (2017: 510) made the case in their study that efficient communication, standardization, cost-effectiveness, and on-time delivery in logistics operation procedures improve the influence of logistics performance. Additionally, according to Torun's research (2017: 968), convenience, speed, time savings, and transportation are the elements that have had a significant impact on consumers' purchasing decisions in recent years.

According to Singh, Bey and Gupta (2013: 81), successful practice of lean management by healthcare providers has a major impact on the health and well-being of the general public. Mouth diseases have spread as a result of people not noticing changes in their oral health and diseases being widely accepted. A person's beliefs influence their behavior, and the majority of people have the widespread perception that receiving dental care is extremely unpleasant. As a result, people tend to overlook their oral health to some extent. The other element has been disregarded: public awareness of oral health and its connection to general health and wellbeing. This is largely caused by the absence of ongoing access to oral health treatments in the immediate vicinity and the lack of fundamental knowledge regarding these issues.

According to Tarafdar and Qrunfleh's research (2010: p. 539), lean supply chain techniques have a positive effect on strategic suppliers. According to Othman, Yusoff et al. (2012: p. 219), there is a strong positive relationship between lean supply chain strategy and supply chain performance with intermediary factors—such as customer interactions, ordering, and delivery.

This study's difference comparison between the participants' ages, the lean supply chain approach, and their buying patterns revealed no statistically significant differences in the

participants' buying behaviors. Contrarily, Biner (2014: 1) discovered that age has a moderating influence on the association between green purchasing behavior and environmental concern and that perceived consumer efficacy and environmental concern have a statistically significant and positive effect on green purchasing behavior. On the other hand, Roper (1992: 4) claimed in his study that there is no significant association between young people's green features and behaviors and that they are more likely to engage in green purchasing behaviors and are more sensitive to environmental issues.

In this study, when the lean supply chain strategy and consumer purchasing behaviors were examined in relation to the gender of the participants, it was found that the averages of lean supply chain strategy implementations and consumer purchasing behaviors were higher in men than in women. Çabuk, Nakıboğlu, and Keleş (2008: 85) carried out a study to look at the correlation between the socio-demographic traits of consumers and their green purchasing behavior. The study's findings revealed a substantial correlation between consumer green purchasing behavior and variables related to income, gender, education level, marital status, and age. Additionally, while there was a substantial correlation between consumers' green purchasing behaviors and age, there was no significant correlation between education level, gender, income, or marital status.

In this study, the analysis of the relationship between marital status, the lean supply chain strategy, and consumer purchasing behavior revealed no statistically significant differences. According to Bayrakdaroğlu and Çakır's research (2016: 284), internet shoppers' buying patterns vary depending on their marital status and income level. According to Tekvar's (2016: 1614) research, socioeconomic class, gender, marital status, age, and race have an impact on consumers' purchasing decisions, hence these elements should be considered when formulating marketing and advertising strategies.

In this study, the difference analysis between education level, the lean supply chain strategy, and consumer purchasing behavior revealed that the purchasing behavior of consumers did not differ statistically. According to Atilla and Seyhan's research (2021: 2488), there are statistical variances for the supply chain management sub-dimensions depending on the participants' work unit, gender, time spent working for the business, marital status, time spent working in the industry, and age. However, they stated that there was no significant difference between the education level, income level and professional position of the participants.

6 Suggestions

Dental hospitals' supply chains should be efficient, quick, easy, and accessible. Patients may favor locations that offer treatment services in the quickest amount of time, are of high quality, do not wear them out, are affordable, provide comprehensive patient information, and offer effective post-treatment care. As a result, it might be beneficial for dental hospitals to conduct operations that meet customer expectations for the supply chain and service quality.

Gender, age, race, marital status, and social class of consumers all have the power to affect their purchase decisions. Therefore, while choosing supply chain strategies, dental hospitals may find it advantageous to take consumers' preferences into account.

It may be helpful to consider that patients who seek dental care may have different preferences depending on their age, different preferences for treatment approaches, and different behaviors when choosing dental materials and alternatives, in order to provide patients with a variety of options for the length of dental care.

It should be considered in medical facilities as patients may have various preferences depending on their marital status. Particularly, it should be considered that young single

people may behave in a visually appealing and fashionable manner, whereas married people may desire to be strong and healthy.

It may be helpful to consider that patients may prefer particular dental procedures depending on their educational level, and that the length of treatment, the pace at which materials are supplied, and the information provided during treatment may vary depending on the severity of the patient's obligations.

References

1. R. J.Arend, J.D. Wisner, Journal of Business Venturing **20(3)**, 403-436 (2005)
2. E.A. Atilla, F. Seyhan, Journal of Business Research **13(3)**, 2488-2506 (2021)
3. F. Bayrakdaroğlu, H. Çakır, Journal of Institute of Social Sciences **8(15)**, 266-284 (2016)
4. N. Biner, *An Investigation of Consumers' Green Product Purchasing Behavior, Unpublished Master's Thesis, Trakya University* (Institute of Social Sciences, Edirne, 2014).
5. B. Borgström, S. Hertz, Journal of Business Logistics **32(4)**, 361–373 (2011)
6. S. Çabuk, B. Nakıboğlu, C. Keleş, Journal of Institute of Social Sciences **17(1)**, 85-102 (2008)
7. A. Daud, *A Study on Lean Supply Chain İmplementation in Malaysia's Electrical and Electronics İndustry (Practices and Performances* (Doctoral dissertation)., USM, 2010)
8. D.A. De Vaus, *Surveys in Social Research. (2.bas›m)* (Unwin Hyman, London, 1990).
9. A. Jazairy, J. Lenhardt, R. Haartman, International Journal of Logistics Research and Applications **20 (5)**, 491-513 (2017)
10. J. Kadarova, M. Demecko, Procedia Economics and Finance **39**, 11-16 (2016)
11. B.E. Kahn, A.M. Isen, Journal of Consumer Research **20(2)**, 257-270 (1993)
12. J. Lichtarski, WAE: Wrocław (1997)
13. R.M. Monczka, T. J. Callahan, E.L. Nichols, International Journal of Physical Distribution & Logistics Management **25(10)**, 45–59 (1995)
14. Ohno. *Toyota Production System—Beyond Large Scale Production* (Productivity Press, New York, 1988)
15. A.A. Othman, R.Z. Yusoff, M.A. Ismail, R. Husin, Bandung – Indonesia **4-6**, 217-224 (2012)
16. A. Parkes, *Small and Medium-Sized Enterprises in the European Union: Development Challenges in 2014-2010 Perspective, Lean Management Culture* (Lodz University of Technology, Lodz, 2014)
17. C. Perez, R. de Castro, D. Simons, G. Gimenez, An International Journal **15(1)**, 55-68 (2010)
18. Y. Qi, K.K. Boyer, X. Zhao, Decision Sciences **40(4)**, 667-695 (2009)
19. P.M. Ralston, J. Blackhurst, D.E. Cantor, M.R. Crum, Journal of Supply Chain Management **51 (2)**, 47–64 (2015)
20. O. Roper, *Environmental Behavior, North America* (United States. Study Commissioned by S. C., Canada, Mexico, 1992)
21. M. Salaj, TRANSCOM **27-29**, 81-200 (2011)
22. S.H. Seggie, D. Kim, S.T. Cavusgil, Journal of Business Research **59(8)**, 887-895 (2006)
23. P. Singh, A. Bey, N.D. Gupta, Journal of International Society of Preventive &

Community Dentistry **3(2)**, 81-84 (2013)

24. L.B. Snyder, *Development Communication Campaigns, In: Gutykunst WB, Mody B, eds. Handbook of International and Intercultural Communication. 2nd ed* (Thousand Oaks, Calif, 2001).
25. E. Şahin, V. Çağliyan, H.H. Başer, Journal of Faculty of Economics and Administrative Sciences **10(4)**, 67-86 (2017)
26. M. Tarafdar, S. Qrunfleh, Int. J. Production Economics **55(4)**, 925-938 (2017)
27. S.O. Tekvar, Journal of Human and Social Sciences Research **5(6)**, 1601-1616 (2016)
28. E. Torun, Journal of Electronic Social Sciences **16 (62)**, 955-970 (2017)
29. J.P. Womack, D.T. Jones, Lean Thinking, Simon and Schuster, New York (1996)
30. Y. Yazıcıoğlu, S. Erdoğan, *SPSS Applied Scientific Research Methods* (Detay Publishing, Ankara, 2004)
31. Y. Zhang, Open Journal of Business and Management **3(01)**, 58-62 (2015)