

RELATIONSHIPS AMONG SLEEPLESSNESS AND CONSUMER DECISION MAKING STYLES: AN INVESTIGATION WITH VOCATIONAL HIGH SCHOOL STUDENTS

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ABSTRACT: *Sleeplessness is a common problem in modern world. But importance and results of sleeplessness in terms of consumer behaviors is an overlooked research area. Related studies take into consideration the issue in terms of health. Moreover there is not seen a field research evaluating this issue from this viewpoint in Turkey. Present study is conducted to point out possible relationships among sleeplessness and major consumer decision making styles. In order to reach this objective, a survey is applied to vocational high school students which are selected with convenience sampling. Gathered data is analyzed with statistical data analyzing program and results are interpreted. According to data analysis results, it is concluded that sleeplessness is positively related with “indecision and confusion” and “careless decision”. Moreover it is depicted that sleeplessness is negatively related with “shopping avoidance”. In summary, the idea of sleeplessness can have important role in consumer behavior is supported. Although research results cannot be generalized to all consumers, the results give important insights for young consumers. By taking into consideration the research results, more effective marketing decisions can be made especially by marketers targeting consumers who are young and face sleeplessness problem. Further the sleeplessness can be researched by scholars in terms of other consumer behavior and attitude dimensions like; post-purchase consumer behaviors, consumer price sensitivity, search behavior, consumer attention to advertising etc.*

KEYWORDS: Sleeplessness, Consumption, Sleeplessness and Consumer Decision Making Styles

INTRODUCTION

Sleeplessness: Sleeplessness is a neglected subject in marketing field. Although the issue is studied in various clinical researches, researches about the effects of it on consumer are insufficient. On the other hand, explaining human behavior only with psychological and social variables is a poor thought, since biological and chemical variables affect cognitive and emotional functions. Neglecting the issue on consumer researches are being discussed in marketing field recently (Yuksel, 2016). But especially in tourism industry, the importance of biological changes at consumer has started to be realized because of long journeys (Koc & Boz, 2014). Ultimately, sleeping problems, lead many negative results on people like fatigue, negative mood, diminishing in cognitive ability, concentration and memory, increasing in negative mood or etc. (McCoy & Strecker, 2011; Waterhouse et al., 2007). So it should be studied by consumers' viewpoint.

Researches show that insufficient sleeping is a commonly encountered problem. For example, a study in Turkey indicates that problem of lack of sleep is about % 14,6. At this point, sleeplessness is a problem related with; age, body mass index, obesity, tea-coffee

consumption (Harma et al., 1998), working style (especially for shift workers) (Garde et al., 2009), increasing social and academic demands from teenagers, decreasing parent support, decreasing in total sleeping time, sleeping time delays, increasing in part time working and irregular course syllabuses etc. (Carskadon, 1990). Although sleeplessness is widely faced in today's modern society, results of it are not researched in terms of marketing and consumption in Turkey. This study aims to point out possible consequences of sleeplessness for consumers.

LITERATURE REVIEW

Results of Sleeplessness

Sleeplessness has effects that are intensely felt in personal, social and economic life since it hurts the cognitive and psychological functions of individual. Sleep deprivation can lead to many negative consequences, from falling life quality to the loss of lives (Engleman & Douglas, 2004; Guilleminault & Abad, 2004). It is known that individuals with sleep problem face much more negative moods like tension, confusion, depression, disgust etc. And their interest to daily activities is less than others (Dement & Carskadon, 1982; Bonnet, 1985; Bonnet, 1989). In addition, problems like decreasing car driving performance (Arnedt et al., 2000), increasing motor vehicle accidents (Ward et al, 2013; Tregear et al., 2009; Pack et al., 1995), work related accidents, social problems, worsening public health (Lyznicki et al., 1998; Douglas, 2001), decreasing health and work performance (Dinges, 1995) arise due to sleeping problems.

Besides these, the decrease in the average sleeping time is one of the causes of increasing obesity (Ogden et al., 2006; Taheri et al., 2004). Obesity is one of the most important problems of today, resulting from excess calorie consumption especially in developed economies. In addition to lifestyle and behavioral factors, people get more calories due to lack of sleep (St-Onge et al., 2011). So, sleeplessness is an important issue in terms of health concerns in developed countries.

Clinical researches investigate the relationship between sleeplessness and obesity depend upon reasons like; the supply of the hormone balance in body (Schmid et al., 2008), the demand for more energy to get rid of the energy imbalance and remain awake (Jung et al., 2011), the increase in the grelin hormone (hormone for appetite) and increase of the hedonism level etc. (Schimid et al., 2008; Dickson et al., 2011). However, studies related to the topic have reached different results. In the study conducted by Spiegel et al. in 2004, the reduction of the sleeping time from 10 hours to 4 hours, resulted in a marked decrease in leptin hormone which decreases appetite and burning fat and a marked increase in grelin hormone which increases appetite (Spiegel et al., 2004). On the other hand, an experiment in 2009 by Schmid and colleagues shows that short-lived sleep loss reduces the individual's daily physical activity, but does not affect food intake and increase hunger related hormones (Schimid et al., 2009). In a study by Benedict and his friends in 2011, it was determined that deprivation of sleep caused a decrease in energy expenditure of individuals. In the study, no relation was found between the amount of overnight full asleep deprivation and the amount of food received in the morning. In this case, decreasing the amount of energy spent after the sleepless night for shift workers is likely (Benedict et al., 2011).

In addition to obesity, sleeplessness can be related with psychological and emotional situations of people. A study with students suggests that sleeplessness is closely related with negative moods (Jean-Louis et al., 1998). Therefore, sleeplessness also negatively affects the performance of students (Carskadon, 1990). So it is seen that sleeplessness has effects in the health of education system.

Sleeplessness and Consumer Behavior

Despite the studies and knowledge in health related disciplines, lack of sleep has recently begun to be investigated in social sciences and has been investigated in terms of daytime sleepiness and its results. The subject is mostly examined in terms of differences in consumption of various products depending on sleeplessness. Kristjansson and colleagues' study which is conducted in 2011 shows that daytime sleeplessness is closely related to use of caffeine (cola, energy drink, tea, coffee, etc.) (Kristjansson et al., 2011). By this way people are consuming more attention getting products to decrease carelessness which is caused by sleeplessness.

Moreover, sleep deprivation has several effects on consumer behavior. The experimental clinical study of Chapman et al. in 2013 shows that acute sleep deprivation (participants are left awake overnight) affects food purchasing preferences at the supermarket. Male customers, who lack sleep, prefer significantly more calorific and heavier (in grams) food product. This condition, which arises due to sleeplessness, increases the weight gain as well as chronic lack of sleep. These results are important in terms of shift workers, taxi drivers, nurses, doctors and others. However, the study result cannot be generalized to people who are partially sleeping, as it examines full sleep deprivation (Chapman et al., 2013).

In addition, sleeplessness causes a decrease in cognitive activities at the front of brain (Benedict et al., 2012). In this case, as well as obesity, impulsive behaviors are increasing. Cedernaes and friends' experimental study in 2014 shows that full sleep deprivation breaks cognitive control and increases intimacy (Cedernaes et al., 2014). Accordingly, depending on sleeplessness, it is possible to expect consumers to buy more careless, unplanned or instinctive. But there is not a research investigating the relationships among sleeplessness and its results for consumers from this point of view. As seen in the literature, few studies taking into consideration the issue by the point of full asleep and purchasing behavior for some food products.

Measurement of Sleeplessness

There is no consensus on the measurement of daytime sleeplessness. In general, it is tried to be measured by subjective mood states, psychological changes, tendency to come to sleep in certain situations, numbness etc. (Johns, 1998). Epworth Sleepiness Measurement (E.S.S.) is one of the most commonly used approaches to measure sleeplessness. This is an approach that has been tested internationally in various economies and lifestyles and being translated into different languages (Johns, 1991; Bloch et al., 1999; Vignatelli et al., 2003; Gander et al., 2005; Izci et al., 2008; Zhang et al., 2011).

In addition to this approach, there are also methods such as "multiple sleep delay test" and "continuity test of awakening". Studies show that they are significantly related with each other. The study of Johns, which is published in 2000, shows that E.S.S.'s daytime sleeplessness is a distinctive approach (Murray, 2000). While objective clinical tests which are difficult to apply, complex, time consuming and expensive; the E.S.S. test measures the

individual's tendency to sleep during certain recent period (Johns, 1991). In 2007, Izci and colleagues tested the validity and reliability of the Turkish version of E.S.S. measurement. It was concluded that scale had a high internal consistency and it was a valid approach to measure daily sleeplessness (Izci et al., 2008).

Although the phenomenon is measured by scientists, since the interest toward the issue in social sciences is relatively low, studies that examine the socio-economic results of sleeplessness are rare. This study aims to examine the changes in the decision making styles of consumers depending on sleeplessness.

Relationships among Sleeplessness and Consumer Decision Making Styles: An Investigation with Vocational High School Students

Research Goal, Importance and Method

The goal of the research is revealing relationships among sleeplessness and possible related major consumer decision making styles which are named as "careless shopping", "indecision & confusion" and "shopping avoidance". Sleeplessness is a phenomenon that researched in terms of medical and health studies. But this problem would also have consequences in social life especially in consumer decisions. So, this study is important for taking into consideration the issue from the point of marketing field.

To reach the research objective, a survey conducted on vocational high school students with convenience sampling because of resource constraints. This condition prevents the generalization of the research results. But results provide useful information for students who face sleep problems in common. Research questions are prepared by the help of previous studies in the related literature. At this point, to measure sleeplessness, the Turkish version of Epworth Sleepiness Scale is benefited which is tested in Turkey by Izci et al. (2008). According to this measure, participants are asked to mention the possibility of dozing when making some daily activities (Izci et al., 2008). To measure the decision styles of consumer, Dursun et al. (2013)'s study is analyzed and benefited (Dursun et al., 2013).

Research Analyses

Under the framework of the research, general findings are pointed out and evaluated first. Accordingly, most of the participants (%81,5) are under the age of 27 since survey is conducted with students. In terms of gender, % 63,4 of the participants are female and % 36,6 of the participants are male. In terms of monthly revenue, % 59,1 of the participants has less than 900 TL. Moreover, when daily sleeping time in last week is looked, % 34,1 of the participants sleep for 5-6 hours and % 29,9 sleep for 7-8 hours. The general research findings are seen in the Table 1.

Table 1: General findings of the research

		Quantity	Valid Percentage	Cumulative Percentage
Age	27 or below	256	81,5	81,5
	28 or above	58	18,5	100,0
	Total	314	1	
Gender	Female	199	63,4	63,4
	Male	115	36,6	100,0
	Total	314	1	
Monthly income	0-900	175	59,1	59,1
	901 and above	121	40,9	100
	Total	314	1	
Daily sleeping hours since last week	Less than 5	31	9,9	9,9
	5-6	107	34,1	43,9
	7-8	94	29,9	73,9
	9-10	44	14,0	87,9
	More than 11	38	12,1	100
	Total	314	1	

3.3. Factor Analysis:

The questions which are prepared for research are subjected to factor analysis. Initial factor analysis conducted for statements which are related with sleeplessness and Kaiser Meyer Olkin coefficient is pointed out as 0,783 and meaningful. According to this analysis, statements which are aimed to measure sleeplessness are summarized in one factor. The statements are about sleeping possibility of participant at last week in some daily situations like sitting, reading, lying down etc. The factor analysis results for sleeplessness are seen in the Table 2.

Table 2: Factor Analysis/ Sleeplessness

How often do you sleep or fall asleep during the past week in the situations that are mentioned in your daily life? (Does not mean to feel tired)			
	Total	% Variance	Cumulative % Variance
Sitting and reading	2,716	54,319	54,319
Sitting inactively in a public place (meeting etc.)	0,803	16,055	70,375
In a journey which takes more than an hour without a break	0,621	12,422	82,796
Lying down to rest in the afternoon	0,483	9,664	92,461
Sitting quietly after lunch	0,377	7,539	100
Alfa: 0,786			
<i>0 = never 1 =slight chance 2 =moderate chance 3 =high chance</i>			

Statements which are prepared to measure consumer decision making styles are also conducted to factor analysis. K.M.O. coefficient is depicted as 0,66 and significant. Accordingly, statements are summarized in three main titles which are named as “indecision and confusion”, “shopping avoidance” and “careless decision”. The factor structure and components for consumer decision styles are seen in the Table 3.

Table 3: Factor Analysis: Consumer Shopping Decision Styles

Consumer Shopping Decision Styles. In last week:	Factor Loading	Eigenvalue	Variance %	Total Variance %
1. Factor: Indecision and confusion		2,201	27,507	27,507
Sometimes it is hard to decide which shop to shopping	0,752			
I am confused when prefer due to so many brand option	0,745			
The information I get about different products leads to confusion	0,724			
The more I learn about the products, the more difficult I have to choose	0,667			
2. Factor: Shopping avoidance		1,468	18,351	45,858
Shopping is not an enjoyable activity for me	0,868			
Shopping by roaming shops is a waste of time	0,800			
3. Factor: Careless decision		1,431	17,866	63,744
I decide without thinking when shopping	0,842			
I did many careless shopping that I after regretted	0,699			

Analyzing differences:

Under the framework of the study, differences with respect to main demographics are analyzed. Accordingly, the possibility of dozing of women is higher than men. This difference is statistically meaningful. Moreover, in terms of age groups, sleeplessness possibility of the age group of 27 and less is higher than the age group of 28 and more. This difference is also significant. Furthermore, sleeplessness is higher in the income group of 0-900 TL than the group of 901 TL and more. At last, sleeplessness is also differentiating in terms of daily sleeping times. Especially who sleep less than 5 hours and between the hours of 9-10 has greater sleeplessness value. Difference analysis results are seen in the Table 4.

Table 4: Difference analysis

	Gender	Average
Sleeplessness	Male	2,22
	Female	1,91
Sig. 0,00		
	Age	Average
Sleeplessness	27 and below	2,20
	28 and above	1,68

	Gender	Average
Sleeplessness	Male	2,22
Sig. 0,00		
	Monthly income	Average
Sleeplessness	0-900 TL	2,27
	901 TL and more	1,87
Sig.0,00		
	Daily sleeping time (in hours)	Average
Sleeplessness	Less than 5	2,27
	5-6	1,96
	7-8	2,06
	9-10	2,32
	11 and more	2,18
Sig.0,07		

Correlation Analysis

At this point of the study, correlation analysis is conducted for research variables. Accordingly, it is seen that sleeplessness is positively and meaningfully related with “indecision and confusion” and “careless decision” at a low level. These results are compatible with previous studies (McCoy & Strecker, 2011; Waterhouse et al., 2007) that assert sleeplessness affect human cognitive abilities negatively. So the idea of sleeplessness affect consumer decision and attention is supported.

In addition to these results it is revealed that sleeplessness is negatively related with “shopping avoidance” at a low level. These results also can be seen as partially compatible with Chapman et al., 2013’s study which asserts sleeplessness leads to buy more calorific and heavier products. In other words, sleeplessness is positively related with approaching shopping. Table 5. summarizes the correlation analysis results.

Table 5: Correlation Analysis

		Indecision and confusion	Shopping avoidance	Careless decision
Sleeplessness	Pearson Correlation	,156**	-,125*	,203**
	Sig.	,006	,028	,000

CONCLUSION

As a result of the study, which is aimed to point out possible results of sleeplessness on consumer decision making styles, it is seen that sleepless young consumers are more prone to be indecisive and careless. So designing and making clear marketing communications (price tag, advertising, salesman effort etc.) for sleepless people would be wiser. Although,

indecision, confusion and carelessness increase as sleeplessness increases, it is seen that sleeplessness is negatively related with shopping avoidance as a result of the study. So it is suggested that marketers should support true, knowledge based and needy shopping decisions of consumers who are careless, indecisive and confused to reduce possible after purchase dissonances.

This study results, which take attention the role of sleeplessness on consumer decisions, cannot be generalized to all consumers and is related with limited dimension of consumption area. It is suggested to researchers examine the effects of sleeplessness in terms of other consumption dimensions like; post-purchase consumer behaviors, consumer price sensitivity, search behavior, consumer attention to advertising etc.

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