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The facilitating role of negative emotion in decision making process: A hierarchy of effects model approach

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ABSTRACT

The aim of this study is to explore and investigate the role of negative emotion as facilitator in consumer decision making process based on the hierarchy of effects model. Based on the hierarchy of effects model presented by Lavidge and Steiner, the researchers relied on questionnaire to gather data and implemented structural equation modeling. The findings of this study provide empirical evidence that negative emotions significantly facilitate the decision making. The sequence of negative emotion facilitating the movement of consumer in HEM is shame, fear, anger and shame. The major limitation of our study is our measurement approach and, therefore, our research results may lack generalizability. Also the relatively small sample size and the demographic characteristics of respondents limit the generalizability of the findings. The information disclosed in this paper may help the marketing to have a better understanding of the role and importance of negative emotion as a facilitator in marketing communications. This research integrated the hierarchy of effects model and emotion to investigate the role of negative emotion in consumer behavior. Also it tried to evaluate the role of negative emotion in hierarchy of effects model as facilitating factor.

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1. Introduction

It has been argued that negative and positive emotions can facilitate the decision making and [Damasio \(1994\)](#) asserted that these emotions play a critical role in people's selection of alternatives. The recent focus on emotional decision making can be attributed to several reasons. First from psychological aspect, consumers' emotional reaction in consumption context should be studied specifically because it is as important as cognitive process in understanding consumer behavior ([Batra & Ray, 1986](#); [Derbaix & Pham, 1991](#)). Also it can be attributed to the fact that today products are more homogenized. Unlike the past, today almost all products satisfy the utilitarian aspects of consumers' needs ([Heath, 2001](#)) and other factors than rational and logical factors are being employed by consumers in order to make consumption decision. Today consumers don't purchase a product solely for its features or physical attributes. Therefore other factor should be considered as influential factors in this process. In order to provide a reliable model for the facilitating role of emotion in the hierarchy of effects model, it seems necessary to understand the role of emotion in HEM. (See [Figs. 2–4](#).)

Emotion is a key element in consumer behavior, decision making and consumption ([Bagozzi, Gopinath, & Nyer, 1999](#); [Holbrook & Hirschman, 1982](#); [Leone, Perugini, & Bagozzi, 2005](#); [Luce, 1998](#); [Pham, 1998](#); [Ruth, 2001](#)) and has been perceived as opposite to

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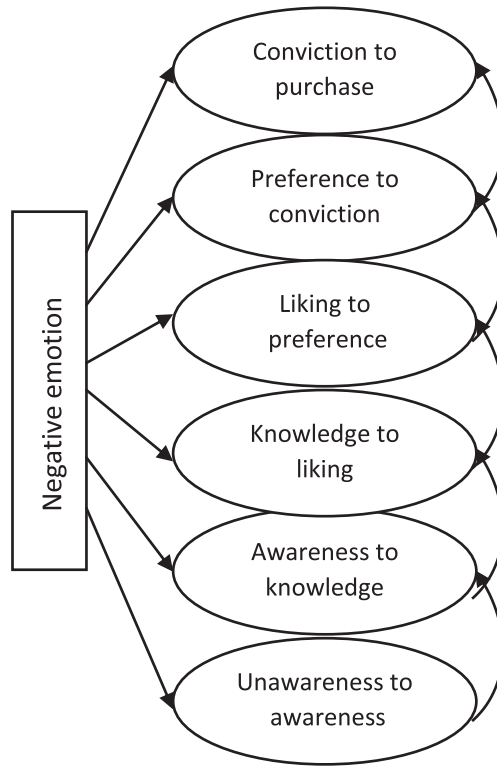


Fig. 1. Conceptual model of the study.

rationality (Ashforth & Humphrey, 1995; Putnam & Mumby, 1993). But how do consumers use emotion to make decisions and to process information? It has been discussed whether emotions are functional or disruptive (Gohm & Clore, 2002).

Some researchers debate that emotions are a source of bias (Shiv, Loewenstein, Bechara, Damasio, & Damasio, 2005). Other researchers assert that emotion can play an adaptive role in decision making (Damasio, 1994). In this study we try to shed some light on this debate by suggesting that whether negative emotions are functional, they facilitate the process of decision making through hierarchy of effects model. We propose that consumer experience positive and negative emotion during decision making and use these emotions to facilitate their decision making process. We empirically examined the proposed relationships in Iranian smartphone

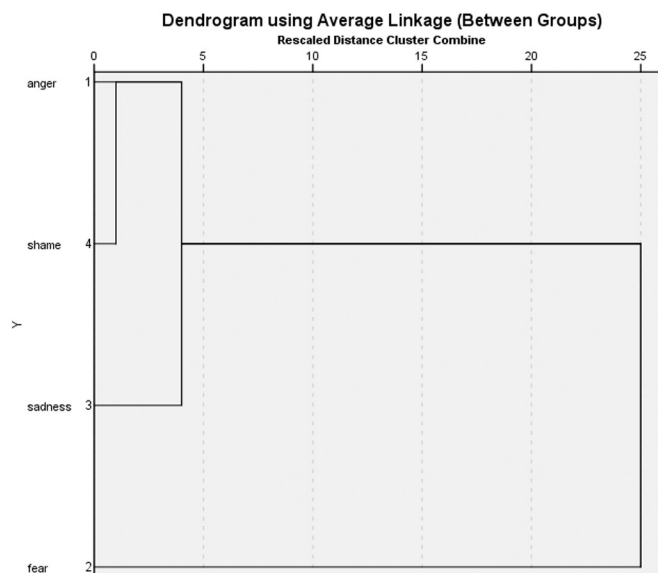


Fig. 2. Dendrogram of emotions.

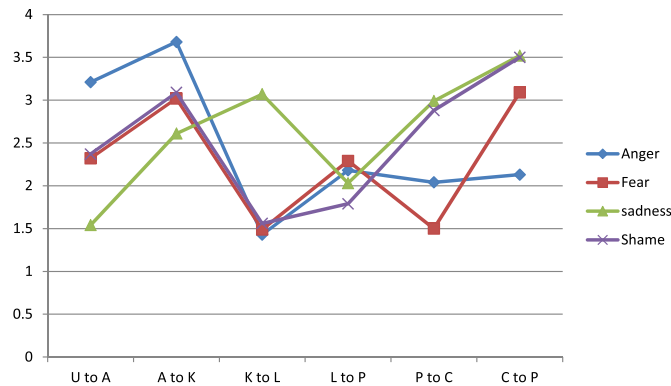


Fig. 3. Mean values of negative emotions in each stage.

market. In this study we try to provide direct empirical evidence regarding how emotion affects consumer's decision making process through hierarchy of effects model. We also examine the role of positive and negative emotion in this process.

2. Theory and background

2.1. Emotion

Researchers believe that emotion is a perceptual and behavioral characteristic in humans (Chaudhuri, 2006; Dormann, 2003; Fridja, 1988). On the other hand, some researchers consider emotion as a response to external stimuli and attribute emotion to human's evaluation of information which results in action (Ortony, Clore, & Collins, 1988; Kalat & Shiota 2007). In their view emotion is the evaluation of events and their meanings. In this study we employ the latter view, since we considered emotion as internal factor in response to external positive or negative stimuli. Emotions are complex reactions to outside stimuli that engage mind and body as well (Dormann, 2003), and are either positively or negatively affective states (Frijda, 1988a,b).

O'Shaughnessy and O'Shaughnessy in their book "Marketing power of emotion" (2003) define emotion as "an experience that is used to cover a variety of mental states and bodily processes that arise from highly positive or negative appraisals of some real or imagined event, action, or attribute" (p. 20). Reading (2011) defines emotion this way: "Emotions convey qualitative types of evaluative information about the world around us, which helps us navigate our way through it" (p. 111). In another study focusing on responsive behavior of emotion, emotion is defined this way: "valenced reactions to events, agents, or objects, with their particular nature being determined by the way in which eliciting situation is constructed" (Ortony et al., 1988, p.13).

Since understanding emotion is complex, researchers tried to classify emotion in order gain a better understanding. Ortony and Turner (1990) reviewed literatures on emotion and concluded that different researchers have studied and categorized emotion based on different approaches (Arnold, 1960; Ekman, Friesen, & Ellsworth, 1982; Frijda, 1986; Gray, 1982; Izard, 1971; James, 1884; McDougall, 1926; Mowrer, 1960; Oatley & Johnson-Laird, 1987; Panksepp, 1982; Plutchik, 1980; Tomkins, 1984; Watson, 1930; Weiner & Graham, 1984). One way of classification is to classify them as primary and secondary emotions. Another way is to separate them as positive and negative emotion. In a key study, Laros and Steenkamp (2005) studied a large body article on emotions in consumer behavior and psychology area and identified different terms for emotions. First they categorized these emotions in positive and negative categories. They identified 172 terms for negative emotion and 140 terms for positive emotions. Also after further investigation they set 4 subsets for each category. They argued that despite the wide divergence of emotion in studies and different ways of measuring, classifying emotion as positive and negative is the most popular conceptualization. In that study they employ a cluster and hierarchical approach and identify 8 emotions as main positive and negative, respectively contentment, happiness, pride and love; anger, fear, sadness and shame. In this paper this classification is employed in order to measure positive and negative emotions. Also Richins (1997) classifies emotion in three categories, negative, positive and other (Table 1).

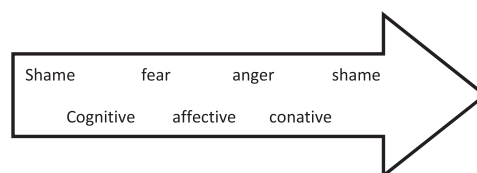


Fig. 4. The sequence of emotions in HEM.

Table 1

Classification of emotion.

	Negative emotion	Positive emotion
Laros and Steenkamp (2005)	Anger, fear, sadness, shame	Happiness, contentment, love, pride
Richins (1997)	Anger, discontent, worry, sadness, fear, shame, envy, loneliness	Romantic love, love, peacefulness, content, optimism, joy, excitement

2.2. Emotion in decision making process

Elliott (1998) argues that emotional decision making is faster and more nonlinear than rational, logical decision making process. Also, recent findings in social psychology validate this claim (Pham, 1998). Pham et al. (2001) later argues that this type of decisions is more stable and consistent and more predictive valance of people thoughts. In the absence of logic, emotion holds a more important role. Also when time is limited, consumers heavily rely on emotion (Mittal, 1994; Shiv and Fedhorikhin, 1999). Also in selecting and prioritizing of alternatives emotion plays a facilitating role (Damasio, 1994; Ketelaar & Clore, 1997; Schwarz, 1990; Schwarz & Clore, 1983).

Experiencing emotion in decision making may give rise to emotional response, for example one can be afraid of not knowing about a product or be proud of owning it or ashamed of owning a low quality cheap product. It is believed that positive emotions are associated with achieving goals and continuing decision while negative emotions are associated whit failure and problems (Stein, Liwag, & Wade, 1996). On the other hand, a detailed appraisal of alternatives is often considered a source of negative emotion (Beattie & Barlas, 2001; Luce, Payne, & Bettman, 2001) and since emotions like happiness and love are more sentimental, interpersonal and less applicable to decision making process for purchasing products, we decided to examine only negative emotions.

It is assumed that negative emotions only have disruptive functions and are outcomes of negative appraisals or situation. Our main question is that can negative emotions play a facilitating role? In order to investigate the role of negative emotion in decision making process, we base this research on Lavidge and Steiner (1961).

These models were developed in the personal selling arena but have been widely adopted by marketing and marketing practitioners. Vakratsas and Ambler reviewed more than 250 articles and books and concluded that the hierarchy of effects model has been employed for almost a century in different forms (Vakratsas & Ambler, 1999). Lavidge and Steiner (1961) is a sequential model and consists of seven stages, beginning with “unawareness” and culminating in “purchase” (Wilkie, 1994). HEM model consists of three major components: cognitive, affective and conative (Wilkie, 1994). These components are popularized as “think-feel-do” approach. Damasio argues that emotions are processed autonomically and are always formed separate from cognition (2000). Understanding the role of positive and negative emotion in these stages can help marketers to gain a better understanding of consumer behavior and consequently enable them to influence the behavior.

Hilgard (1980) proposed that the trilogy provides a relatively complete view of the mind (Hilgard, 1980). Mayer and Hilgard, among the others, have considered emotion itself as a component of hierarchy of effects. In another study, Kershel (1984) suggests that cognition and emotion are separated levels rather than interrelated, and that three components of hierarchy are three separated levels and emotion is in the center of the model. Kreshel’s model is circular model rather than a sequential model. Holbrook (1986), also proposes that emotion is the linking pin of the model and a new hierarchy must replace the traditional one. He argues that emotion is a critical component of hierarchy and researchers have focused too much on the information process and have ignored the role of emotion. Therefore, he proposes terms consciousness, emotion and value to replace the cognition, affect and conation. In this model emotion is the linking pin that holds together the consumption experience.

Since three components of HEM form consumer’s attitude (Solomon, Bamossy, Askegaard, & Hogg, 2006; Wilkie, 1994), understanding their nature, precedents factors and relationship is of significant value to marketers. Either emotion is a component or a linking pin, it has major influences on these three components directly (as a component) and indirectly (as a linking pin). Based on literature we consider the following model as the conceptual model of the study in which we tested the hypotheses mentioned above (Fig. 1).

3. Methodology

3.1. Design overview

Data is analyzed under three sections: descriptive analysis, emotion evaluation and content analysis. SPSS, AMOS and Microsoft excel programs were used to analyze the collected data. The following parts explain these procedures.

Firstly, to understand the reliability of the questionnaire, reliability analyses were made using SPSS software. These analyses showed the consistency of the scales and reliability of the questionnaire.

Secondly, emotions were analyzed with the following aims: to categorize emotions, to find out the relationships between negative emotions, to make comparison between emotions in each stage. Emotions were categorized using dendrogram and graphs using SPSS and Microsoft Excel programs.

Finally, structural equation modeling (SEM) was used to analyze the conceptual model using latent variable equation modeling with maximum likelihood estimation using AMOS program.

3.2. Population and sample

All mobile phone users in Tehran shape the population of this research. The population of Iran in 2011 was approximately 74.8 million [1]. Unfortunately the official exact number of users in Tehran is not available, but approximately mobile phone users in Iran are estimated over 67.5 million, and Iran is the 19th country in the world (2010) [2]. Due to the distribution of users across the city, using cluster sampling, three urban districts were selected and in each district; three sections were selected as the research population. Therefore, in order to conduct the research, 9 sections were selected in total. Based on the pilot study on 30 respondents, we employed the formula of unlimited society to measure the size of the sample society as follows:

$$n = \left(\frac{Z_{\alpha/2} \cdot \delta}{\varepsilon} \right)^2 = \left(\frac{1.96 \times 0.667}{0.075} \right)^2 = 303$$

3.3. Pretest and questionnaire development

The self-administrated paper-pencil questionnaire consisted of two parts. First respondents were asked to fill out the demographic information including age, gender and education. Second part of the questionnaire was aimed to understand and to measure negative emotional responses in each stage. A five-point Likert scale (from 1 indicating “not at all” to 5 “very strongly”) was used.

The study was conducted in the participants' native language (Persian), therefore the terminology used in questionnaire were translated from English. Translation was cross checked by 5 professors of University of Tehran and when necessary, more than one word was provided. After several modifications, its content validity was approved by a panel of 5 professors in faculty of management at the University of Tehran, Iran. Inter-construct correlations are also presented in Table 2. As the results indicate, all inter-construct correlations are significantly lower than one, showing satisfactory results. Table 3 illustrates the analysis of measures of the questionnaire, including standard factor loadings, construct reliability, and average variance extracted (AVE). Factor loadings for statement in the questionnaire range between .501 and .840, construct reliabilities range between .888 and .916, and AVEs range between .64 and .80, showing sufficient item validity and reliability (Anderson & Gerbing, 1988; Byrne, 2010).

3.4. Data collection

Using convenience sampling and questionnaires, 400 respondents were identified, 357 questionnaires were completed and 323 questionnaires were acceptable. The aim of the study was described as investigation of “factors affecting the selection of smartphones in the Iranian market.” Factors considered in investigation were formulated in four categories: “perception of brand image and reputation, perception of information in advertisements, understanding information and advertisement and finally decision making and purchase.” 6 questions were allocated to each factor. Several demographic questions were asked as well which are showed in Table 4.

3.5. Emotion evaluation

Emotion and emotional connection can be both measured and managed (McEwen, 2006). Some researchers prefer scales to evaluate emotions (Westbrook & Oliver, 1991; Richins, 1997; White & Yu, 2005), other prefer interviews (Thompson et al., 2005) and as well as emotion measurement tools. Considering study limitations, emotion scale was employed to assess consumer emotional responses.

The emotion of respondent in each stage was asked in the questionnaire, based on Laros and Steenkamp (2005) framework. To visualize emotions, dendrogram is used to show the relationship and relative distance of emotions.

The dendrogram shows that the difference between fear and other emotions is noticeable. Anger and shame share more similarities, then they join each other in the first branching clade. Anger and shame combined have more similarities with sadness. At the final branch all emotions join with fear. To visualize positive and negative emotions in each stage, the mean of emotion was used.

Table 2
Construct inter-correlations (n = 303).

	Unawareness to awareness	Awareness to knowledge	Knowledge to liking	Liking to preference	Preference to conviction	Conviction to purchase
Unawareness to awareness	1					
Awareness to knowledge	0.265	1				
Knowledge to Liking	0.110***	0.244***	1			
Liking to Preference	0.331***	0.060	0.144**	1		
Preference to conviction	0.163**	0.203**	0.359***	0.263***	1	
Conviction to purchase	0.174**	0.411***	0.384***	0.100***	0.386***	1

** p < .05.

*** p < .01.

Table 3
Measures.

Construct items and scale reliability	Standardized factor loading	Construct reliability	Average variance extracted
Negative Emotion in Unawareness to Awareness Source: Laros and Steenkamp (2005)		0.8914	0.67702
• Being unaware about a product makes me angry	.572		
• I am afraid of choosing wrong products because of not knowing about them.	.501		
• I would be sad if I am not aware about the latest products.	.753		
• Not knowing about new products make me ashamed	.588		
Negative Emotion in Awareness to Knowledge Source: Laros and Steenkamp (2005)		0.9093	0.715436
• Being uninformed about my favorite products which are new makes me feel angry.	.697		
• Because I am afraid that lack of knowledge leads me to bad choices, I try to gather information	.648		
• Not knowing about the latest products and devices makes me sad	.740		
• In order to not to be ashamed among my friend, I try to seek the latest information.	.747		
Negative Emotion in Knowledge to Liking (Source: Laros and Steenkamp (2005))		0.8882	0.667805
• Being angry about some experiences with some products makes me to like others.	.598		
• Because I am afraid of using Iranian and Chinese products, I like others.	.740		
• Because I am not happy with my previous experiences, I don't like new products.	.553		
• Sometimes I don't like some phones because I am ashamed using its products.	.646		
Negative Emotion in Liking to Preference (Source: Laros and Steenkamp (2005))		0.9001	0.709761
• My anger of previous experiences leads me to other preferences.	.837		
• I am afraid of using Iranian products and brands. Therefore I prefer to use others.	.522		
• Being sad about previous experiences, leads me to prefer other products and brands.	.595		
• Sometimes I prefer a foreign product over an Iranian one to not to feel ashamed.	.558		
Negative Emotion in Preference to conviction (Source: Laros and Steenkamp (2005))		0.9165	0.735993
• My anger towards other products in my previous experiences makes to choose others.	.718		
• Fear of choosing "not so cool" brands and products make me choose others.	.706		
• I feel sad if I use brands and products that are not mainstream and popular.	.840		
• Sometimes I feel ashamed to use some products; therefore I choose other brands and products.	.586		
Negative Emotion in Conviction to purchase (Source: Laros and Steenkamp (2005))		0.9102	0.718812
• The anger associated with not having the latest products makes me buy it.	.782		
• Fear of not having a good product makes me buy it	.681		
• If I don't buy a product I feel sad, therefore I buy it	.758		
• Sometime I buy a product in order to show to the salespersons or other people that I can afford it.	.608		

In the values shown above, except some differences, the overall tendency for the negative emotions is almost the same. The first noticeable difference is in stage 3, where sadness scores the highest. In the last stage, shame and sadness have the highest values, indicating the concern for negative and undesirable outcome of the purchase for consumer. Overall, it is observed that in the early stages consumers have mixed emotions, but as they advance through stages, emotions separate and in the last stage; emotions form two sets. These two sets indicate the importance of emotion in purchase and decision making process and influence of emotion.

3.6. Estimation and fit

Goodness of fit indices: $\chi^2 = 945.248$, $p < 0.05$ ($p = 0.000$), due to the appropriateness of other indices, the overall goodness of fit is acceptable. Other indices are as follows; incremental fit index (IFI) = 0.938, Confirmatory fit index (CFI) = 0.933, and

Table 4
Sample demographics (n = 303).

Characteristic	Categories	Frequency	Percentage
Gender	Male	158	52.1%
	Female	145	47.9%
Age	19 and lower	58	19.1%
	20–24	97	32.0%
	25–29	111	36.6%
	30 and above	37	12.2%
Education	Diploma	110	36.8%
	Undergraduate	126	42.1%
	Graduate	56	18.5%
	Post Graduate	11	2.6%
Usage	Phone call and Text	86	28.4%
	Game and Entertainment	33	10.9%
	Web Surfing	70	23.1%
	Organizing	79	26.1%
	Photography	35	11.6%

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Table 5

Testing the model relationship.

	Standardized estimate	t-Value
Unawareness to awareness	.153	2.156**
Anger	.065	4.436***
Fear	.068	4.208***
Sadness	.062	5.235**
Shame	.071	4.712***
Awareness to knowledge	1.029	1.976**
Anger	.062	6.355***
Fear	.079	4.371***
Sadness	.071	4.836***
Shame	.072	3.994***
Knowledge to liking	.408	3.240**
Anger	.071	4.830***
Fear	.072	4.680**
Sadness	.061	6.656***
Shame	.063	5.528***
Liking to preference	.172	1.299**
Anger	.075	3.829***
Fear	.073	3.563***
Sadness	.069	3.913***
Shame	.055	6.042***
Preference to conviction	.172	1.452***
Anger	.075	3.829***
Fear	.073	3.563***
Sadness	.069	3.913**
Shame	.055	6.042***
Conviction to purchase	.849	1.460**
Anger	.070	5.436***
Fear	.067	5.691***
Sadness	.074	4.406***
Shame	.075	3.643***
Model fit statistics:		
$\chi^2 = 19.5, p < 0.05 (p = 0.003), IFI = 0.938, CFI = 0.933, RMSEA = 0.086$		

*** $p < .01$.** $p < .05$.

finally root and mean square error of approximation (RMSEA) = 0.086 meet or even exceed the criteria (Bagozzi & Yi, 1986; Browne & Cudeck, 1993; Hair, 1998). Thus, the measurement model fits the data well.

3.7. Research findings

Structural equation modeling is based upon the analysis of correlation or covariance structures and is used in causal modeling (Bollen, 1989). To test the conceptual model, latent variable equation modeling with maximum likelihood estimation was employed using AMOS, since it describes the relationships among variables. The relationships among research variables are presented in Table 5.

4. Discussion

4.1. Summary

Investigating the role of negative emotion shows the facilitating role of negative emotions in consumer movement from unawareness to awareness in cognitive context of HEM. In this stage, the most influential emotion is shame since consumers consider lack of awareness shameful and this emotion functions as a motivator to seek information. Also in the movement from awareness to knowledge, fear is the most influential emotion. The role of fear can be attributed to the fear of making the wrong decisions due to lack knowledge about the product or brand. In the cognitive stages of HEM, fear and shame are important emotions which motivate consumer to act.

In the first affective stage of HEM, knowledge to liking, fear also is dominant. In the next stage, liking to preference, anger is the most important emotion. This emotion can be traced back to consumers' previous experiences with the brand or product which emerge in the form of anger. In the first stage of conation part of the HEM, anger influences more than other emotions. In the last stage, conviction to purchase, shame is the most facilitator. Shame in the purchase may be associated with the communicative role of purchase and consumption. Consumers try to convey the message of wealth or a belonging to a certain social class and status. They may find shame associated with some brands such as Iranian or Chinese brands, or cheap products. Also some consumers may feel ashamed of purchasing certain brands and products, therefore to avoid shame they choose other brands and products.

It is obvious that in HEM, emotions are a spectrum and not concrete and completely dividable. Emotional state begins with shame since today lack of knowledge about technology and technological devices is considered shameful. Then fear facilitates decision making process, consumers use fear to avoid wrong decisions. In stages in which preference is forming, consumers draw back to their previous experiences which lead to anger. Consumers use this anger to facilitate their decision making, and ignore brands and products with previous negative experiences. In the final stage, shame facilitates the process and consumers purchase a product that they feel less ashamed of purchasing and using.

To summarize the findings, the results can be illustrated this way:

4.2. Implications

One of the main functions of emotion is action. Emotional action can take different forms: action readiness, action itself or decision making. The effects of emotional arousal might depend on the stage of HEM and related negative emotion. Emotion is a social construct and can be socially constructed through marketing communications and in these communications; marketers should communicate with consumers through emotions and emotional messages based on their stage in HEM to manipulate the outcome behavior. Also products should be “emotionalized” to provoke feelings in consumers to position themselves as an emotion-driven choice.

Marketing practitioners should formulate their marketing communications based on the relevant emotion to motivate the desired behavior or decision in consumers. For example in communications introducing new products, the message should be designed to insist on the novelty of the product in order to arouse the shame of not knowing the products. The results of this study are valuable to show the relationships between the emotional response of consumers and decision making process and the importance of each emotion in different stages of hierarchy of effects model.

5. Limitation and direction for future research

These results need to be interpreted within the limitations of the study. We acknowledge our research is limited to one product and is based on consumers residing in one city. We also admit that our results may be product specific. It is obvious that further researches are needed to validate the findings of this study by expanding the scope of research and examining the factors and consumer characteristic more specifically in different products, markets and cultures. Also the relatively small sample size and the demographic characteristics of respondents limit the generalizability of the findings.

The major limitation of our study is our measurement approach. Paper and pencil self-report was employed to measure correspondent emotion. We assumed that emotion can be measured by the report of the people. The only disadvantage of self-report is that the results cannot be precise since standards differ for different persons (Kalat & Shiota, 2007). This study was a field study and lacks the control of laboratory studies; also we limited our analysis of emotion to aspects that can be retrieved through a questionnaire with a limited number of questions and an assumption that these questions are able to capture the rich dimensionality of decision making processes. Also, we only measured a snapshot of ongoing processes and not measures of the same process over time. These concerns and limitations should be considered in understanding the meaning of our study and findings.

We suggest that further researches should be aimed to test whether future behavior of consumers can be predicted by investigating their emotion. Also other studies can investigate the role of emotional intelligence and its factors in consumer decision process and HEM based on model proposed by Mayer and Salovey's four branch model (1997), since it considers emotion and ability rather than traits (Bar-On, 2000). In addition we did not consider situational factors in our study, and if done so it provides more understanding about the role of emotion in HEM. Recent interest in emotional aspect of consumer behavior has highlighted the need and necessity of further research in this field.

In the conclusion, the findings of this study contribute to the marketing and consumer behavior literature by providing empirical evidence that negative emotions facilitate the decision making process of consumers. The sequence of negative emotions suggests marketers should carefully consider level of consumers in HEM in order to design the adequate emotional message in advertises and to formulate marketing strategies.

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