Hedonic and Utilitarian Motives for Consumers' Learning Processes: The GDA Food Label

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Abstract:

As one of the stimuli flows in the food market the GDA-labeling was established in 2007. The original concept of introducing this label was to provide information that may bring about more healthy eating patterns. Four years after launching it seems relevant to understand how well the consumers have adopted to that information. Consumer learning that occurs through exposure to external sources of information such as GDA-labeling can happen consciously or subconsciously, on a high involvement level or due to the presence of more conducive situation. Therefore understanding learning process and its substantiations such as utilitarian and hedonic motives are salient issues. This study has aims to understand learning process of GDA-label and to determine two types of learning substantiations. Relatively to the respondents' education background the recall- and comprehension tests were rather unsatisfactory. In contrast to that the recognition test was relatively good. The result of this study indicated that in this area the appearance or assembly of the GDA-symbol was not accounted to be problematical. The consumers could adopt, learn and memorize the contents of the symbol very well. However, a significant amount of communication or education campaigns is required. Communication activities are necessary in order to position the GDA-label according to its original concept.

Key words: motivation, nutrient-Labeling, attitude, intentional behavior.

1. Introduction:

One stimulus recently introduced in the European food and beverage market is the GDA-(Guideline Daily Amount) food labeling. This labeling system was launched due to the fact that players in this market realized that there is a need to provide information that may bring about more healthy eating patterns. Primarily, food labeling is an attempt to provide consumers at the point of individual purchase with information about the nutrient content of individual food products in order to enable them to choose nutritionally appropriate food (Grunert and Wills, 2007). Secondly, it was designed to respond to the newly implemented European regulation (EG No. 1924/2006) on nutrition labeling and health claims.

In the German food market the implementation and use of the GDA-labeling was established in 2007. Meanwhile, scientific discussions have started concerning the relative strengths and weaknesses of this type of labeling when compared with other types of labels, such as the traffic-light system or key symbols. Many studies have been published with the main aim to

find out consumers' understanding and acceptance towards those labels and to evaluate which label is better and can be more easily understood by consumers (BMRM, 2006; CLCV, 2006; CPW, 2006; Tesco, 2006; EUFIC, 2005; FSA, 2005). When comparing multiple traffic lights and GDA-based systems, the results are not clear-cut (Grunert and Wills, 2007). The outcome of those studies varies. Apparently, they create pros and cons concerning certain types of labeling.

It seems that some studies done to find out the best symbols don't serve a real purpose. It is quite obvious that all symbols or labeling systems (either GDA, traffic-lights or key symbol) have individual strengths and weaknesses and that they were designed to serve different purposes. In this area many studies with representative respondents have been done nationally or regionally in order to understand, which symbols are preferred and to know consumer's preference and acceptance towards those different symbols (Buxel, 2010; Mirror Group 2008; BMELV, 2008).

However, due to the fact that those available nutrition labels are not abstract and complicated symbols, it may be unpretentious even for lay persons. In this case, it may be arguable that the key issue is not the configuration and the assembly of the symbol itself, but it may be a matter of communication of and familiarization with the symbols. A further assumption can be made that communication and education programs are necessary for consumers and lay persons in order to understand and better comprehend this nutrition labeling system. It is our assumption that by providing proper promotion and communication programs consumers or lay persons will better understand, learn and accept the symbols. This issue will be further discussed in this present paper.

In Germany, the GDA-labeling system has already been widely used since 2007 for labeling many kinds of finished food products. Four years after launching it seems relevant to understand how well the consumers have adopted to that information. Nutrition labeling such as the GDA system is one of the stimuli or pieces of information flowing into the food market. Towards such a kind of stimulus consumers may give a response. This response may be produced through a learning process followed by a series of behavior modifications. Therefore, understanding the effectiveness of consumers' learning process of such nutrition information is relevant for the issue of consumers' learning process. The underlying theoretical background of a learning process relevant for nutrition labeling will be discussed as follows.

2. Theoretical background:

The behavioral learning theory stipulates that the result of a consumer's learning process is crucial for future related behavior (Schiffman and Kanuk, 2007). The antecedent conditions of consumers and stimulus characteristics encourage or discourage motivation to search, adopt to, process and value a stimulus. According to the cognitive learning theory the mental process of learning perceives consumers as problem solvers actively using information from the stimulus and providing a response. This theory suggests how consumers may effectively process and respond to a stimulus in the form of the GDA-symbol. It can more or less explain how readily consumers may accept and use the GDA-information for making a decision on following a healthy diet. Moreover, in an indirect way, it can be assumed that through a consumer learning process the function and benefit of GDA for the individual consumer can be evaluated.

A great deal of research effort has been also directed towards studying consumer learning from a stimulus such as advertising, word of mouth information and product experience itself. Consumer learning that occurs through exposure to external sources of information such as GDA-labeling can happen consciously or subconsciously, on a high involvement level or due to the presence of more conducive situation. GDA-information is only part of general nutrition information, which is printed on the product packaging. It can be considered as a minor part of stimulus in comparison with information generated from advertising and other promotion campaigns. Although researchers have examined how symbols (words, pictures and numbers) are learned and combined in the memory to represent and solve problems, learning processes of the type of GDA-information may follow a low involvement path and consumers may have difficulties with stimulus generation. This suggests that consumers may process this kind of cue on a minimal level of seriousness.

Learning processes begin with searching of information, sensory input-, process of the stimulus, and stimulus/sensory store or memory activation. The processed information may be stored either into short or long-term memory. The short term memory (working memory) is the stage of real memory in which information is processed and held for just a brief period of time. Long-term memory retains information for relatively extended periods (Schiffman and Kanuk, 2007). Information, which is retained in the long term memory, will most likely be encoded, activated and retrieved. Such processes are typically endorsed for high involvement learning process. Previous research confirmed that high involvement learning led to better

memory (Hawkins and Hoch, 1992). However, low involvement processes of learning influence to a greater extent belief (Hawkins and Hoch, 1992). This present paper postulates that the learning process of GDA-information will mostly take place in a low involvement scenario. In this case it is expected that memory will be poorly elaborated (H1).

A consumer may be motivated to stimulate learning process. Motives are certain kinds of causes, the internal factors that arouse and direct a person's behavior (McNeil and Rubin, 1977). The learning process involves new learning and repetition learning. Motive can be seen as a driver that arouses stimulus generation and guides people to act. Given a growing recognition that learning a stimulus involves experimental as well as instrumental outcomes, there is a need to understand the motives and values influencing the learning process. Moreover, a learning experience can be valuable or valueless. Value in this context is expressed as a trade-off between perceived product quality and price (Rao and Monroe, 1989). Consumers may go through a learning process intentionally or incidentally in a conscious or subconscious process of evaluation towards benefits of learning versus involved costs.

Motives and values will lead to a conscious learning process. The two types of learning motives or values which may provide insight into many consumption behaviors are the hedonic and the utilitarian ones. These issues have been well studied concerning the subjects of shopping value, web-consumption and food consumption. This goal-seeking (utilitarian) and pleasure-oriented (hedonic) behavior is predicted to be complementary and intertwined (Babin et al., 1994), such that both kinds need to be taken into account together in order to allow for a deeper understanding of consumers' motives or values of a learning process. The utilitarian value is defined as an overall assessment (i.e. judgment) of functional benefits and sacrifices. It is relevant for the task-specific use of learning, such as purchase deliberation (i.e. considering the product, service and price before actual purchase) (Hoffman and Novak, 1996). Utilitarian value incorporates more cognitive aspects of attitude, such as value for the money (Zeithaml, 1988). The hedonic value is defined as an overall assessment (i.e. judgment) of experiential benefits and sacrifices, such as entertainment and escapism (Overby and Lee, 2006). It is a facet of behavior that relates to the multisensory, fantasy, and emotive aspects in using a product (Hirschman and Holbrook, 1982). Hedonic value involves emotional arousal and it includes feelings such as joy, jealousy, fear, rage, and rapture (Freud, 1955). Furthermore, it is expected that those two learning substantiations have different impacts on learning- and memory activation processes. It is a matter of fact that semantic

learning is a cognitive process. It can be further hypothesized that the hedonic motive may have a lesser impact on the learning process than the utilitarian motive (H2).

3. Objectives:

This study had two main objectives (1) to understand the rational of the learning process of the GDA stimulus and (2) to study the impact of two types of learning substantiation towards consumers' recognition of the GDA-stimulus.

4. Methods and procedures:

This study was designed as a quantitative study. This was a pilot study. Respondents were members of Justus Liebig University (students, lecturers and staff) and they were recruited by inviting them to enter and answer our online CAPI-questionnaire. The study recruited a total of 1230 respondents. A standard method to evaluate cognitive learning processes was used. This includes measurements of recall, recognition and comprehension of the GDA-stimulus (Schifman and Kanuk, 2007; Solomon et al., 2006). These learning elements were established in order to evaluate two important indicators of the learning process , i.e. (1) prior knowledge (non aided recall test) and (2) newly obtained knowledge (with aided material).

In this study the series of learning processes was designed according to the low-involved learning model considering that most of food and beverage products are low involved products. For this kind of evaluation a total of 13 questions featuring the content of the GDA-symbol were presented (7 questions for unaided recall, 4 questions for recognition and 2 questions for comprehension). A true/false answering scale was used. The questions concerned the "big four" labeling of the GDA and varied in terms of difficulty grades and topic coverage.

Additionally, the learning substantiations (either hedonic or utilitarian) were explored using a multiple replying technique. A total of 10 hedonic and utilitarian statements concerning the expected function of reading the GDA-label were presented to the respondents. In order to understand the role of hedonic and utilitarian learning processes a path analysis using Partial Least Square (smartPLS) was implemented

5. Results:

Sample profile

At the end of the study a total of 1230 respondents could be recruited. However due to too many missing values the "pairwise" deletion of missing data was used, in this case an observation was excluded from calculation only when it is missing a value that is needed for the computation of that particular moment (Arbuckle and Wothke, 1995). As expected this study recruited respondents with different personal characteristics. Our respondents represented more or less a group of consumers with relatively high education level (60.3% of respondents were students at Justus Liebig university) and young people (almost 70% of respondents were less than 30 years old). Most of them (76.5%) were female. This pilot study is certainly not representative of the actual distribution characteristics of the adult German population.

Table 1. Sample profiles

	Frequency	**%**		**Frequency**	**%**
Gender:			Income:		
Female	655	76.5	Less than 500€	161	18.9
Male	201	23.5	501-1000€	126	14.8
			1001-1500€	104	12.2
			1501-2000€	80	9.4
Age:			2001-2500€	72	8.4
Under 20	71	8.3	2501-3000€	39	4.5
21-30	528	61.6	3001-3500€	45	5.3
31-40	93	10.9	3501-4000€	45	5.3
41-50	93	10.9	4001-4500€	19	2.2
51-60	64	7.5	4501-5000€	20	2.3
61-70	5	0.0	Over 5001€	21	2.3
Over 71	2	0.0	Not say	117	13.7
Occupancy:			Education:		
Students	514	60.3	High school or less	51	5.9
Professional	318	37.3	Some college	421	49.2
Retirement, housewife and others	20	2.3	Bachelor, Master and Doctoral degrees	375	43.8
			Other	8	0.0

Learning of GDA

This study focused on three cognitive learning processes, i.e. recall, recognition and comprehension. These three tests are usually used to determine whether respondents remember seeing a stimulus of information, to which extent they have seen, read, or learned and whether they can retrieve their memory. In the first part of our questionnaire an unaided recall test concerning GDA information was presented. The result of this recall test was acceptable. Only 4% of the respondents mentioned that they had never seen and read GDA-label. Mean value of this test was 5.19 (min 1 and max 7). And almost 55% of the respondents could give more than five correct answers. However, only 22.8% of mostly academic and highly educated respondents could provide seven correct answers and 13% of the respondents were not confident that their answers were correct. Apparently, the respondents were well informed that the GDA information contains information about energy intake in a portion and sugar content. They were also aware that the GDA system does not contain information about vitamin and protein content. But they were less aware of information on the sodium and saturated fatty acid contents provided.

The aided recognition test contained more detailed and sophisticated questions. The mean value of this recognition test was 2.88 (min 0 and max 4). This is an indication that respondents could answer correctly more than two given questions. Respondents could memorize not only the general content of the big-four GDA system, but also the amounts of nutrients in grams. The recognition test was relatively satisfactory.

Another measure of consumer learning is the degree to which consumers accurately comprehend the intended message of the stimulus (Schiffman and Kanuk, 2007). Two questions used for pursuing the comprehension test were designed to determine whether consumers not only knew the appearance of the GDA-labeling but also used whether the respondents had the ability to process, understand and interpret the given information. The mean value of this comprehensive test was achieving of 0.928. This result was very low. In this test 22% of respondents could not give a single right answer and 49.8% gave only one correct answer.

Table 2. Mean values and SD of three learning tests

	Mean	Min/Max	SD
Recall	5.198	1/7	1.61
Recognition	2.878	1/4	1.06
Comprehension	0.928	1/2	0.65

Motive/value of learning GDA-information

Table 2 summarizes the most frequently mentioned hedonic and utilitarian motives of reading and learning nutrition labeling. Most of the respondents (60%) agreed to some extent that reading the GDA is related to hedonic seeking and utilitarian orientation. The most frequently mentioned one was a hedonic motive, when they were asked to provide a reason why they read such nutrition labeling. They revealed that the GDA-label is a kind of aid- material that provides assistance for the consumers, especially when healthy eating is becoming their salient concern. It is considered a useful instrument which can help the consumers when more information of the contents of a given product is in demand during in-store shopping and during consumption. The other emotional reason dealt with enjoying the contentment with fulfilling a personal need for a product and practicability or comfortableness in getting information at the point of purchase. The cognitive seeking orientation dealt mainly with the fact that with GDA information at hand consumers can better make a product comparison during shopping and can be well informed about nutrition profiles of the individual product.

Tabel 3. Hedonic and utilitarian: multiple replies

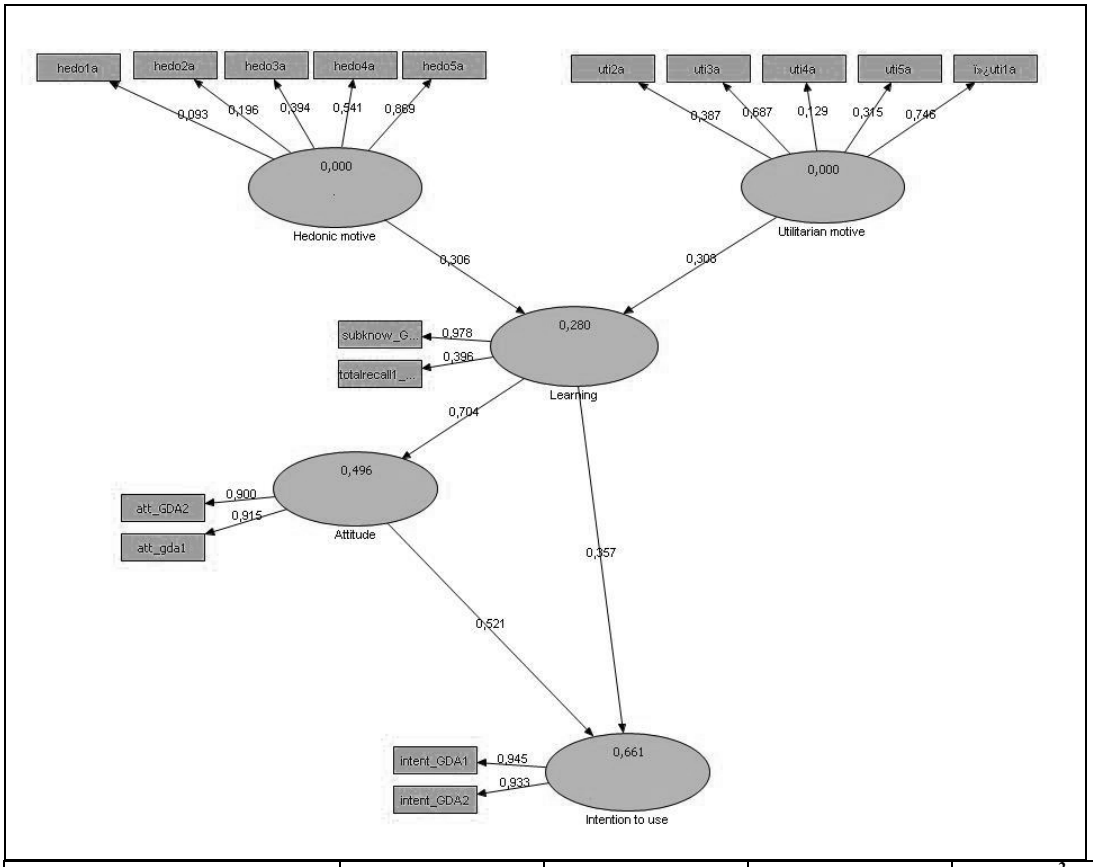
Utilitarian motive	Frequency	Hedonic motive	Frequency
1. It benefits me to make easier product comparison in a store.	613	1. I am curious and excited to know	44
2. It makes easier for me to make decisions which product/brand name to buy	298	2. it is practicable, simple and easy to find during shopping	250
3. It depicts the nutritive profiles of a product	537	3. It prevents me from making a wrong buy. It makes me more secure and confident in making a decision to buy or consume a product/brand name.	83
4. It provides me with information about energy and nutritive value needed everyday	113	4. It provides me with a joyful moment to meet my personal needs.	356
5. It provides me with information about the amount of nutrients that are contained in a product.	169	5. It helps me to pursue a healthy diet	744

Causal analysis between motive, learning, attitude and intention to use the GDA-information

Figure1 shows the result of PLS analysis. Five latent variables are included in this analysis i.e. motives (2 variables), learning, attitude and consumer's intention to use the GDA-information. Variables indicators were designed to represent the individual latent variables accordingly. The construct of this path is fit and robust (all of the cross-validation values were positive). Hedonic and utilitarian motives can be considered as moderate in term of internal reliability, internal consistency of the construct and discriminate validity. The other variables are relatively adequate. In this study all path coefficients are higher than the minimal level of 0.2. This path analysis shows that hedonic and utilitarian motives influence learning ability in an equal manner. Both of them are preemptive drives for the learning process. This study confirmed previous findings showing the modulatory function of the variable "attitude" for

explaining a causal relationship between learning and intentional behavior (Puspa and Kuehl, 2009). In this present study learning influences the attitude variable (path coefficient of 0.704) and further attitudes leads to intentional behavior (path coefficient of 0.521). Without any such modulation of attitude variables of learning will only marginally influence intentional behavior.

Figure 01. Causal path of learning, attitude and intention



	CR*	Crombach's ά	AVE	R^2
Hedonic motive	**0.538**	**0.155**	**0.249**	
Utilitarian motive	**0.580**	**0.266**	**0.258**	
Learning	**0.680**	**0.328**	**0.556**	**0.279**
Attitude	**0.903**	**0.786**	**0.823**	**0.496**
Intention to use	**0.937**	**0.866**	**0.882**	**0.661**

*CR= Composite Reliability; AVE= Average Variance Extracted

Table 4. Causal analysis: Path Coefficients (PC) and Total Effects (TE)

	Attitude		Intention		Learning	
	PC	TE	PC	TE	PC	TE
Hedonic motive		0.215		0.221	0.306	0.306
Utilitarian motive		0.217		0.222	0.308	0.307
Learning	0.704	0.704	0.357	0.724		
Attitude			0.521	0.521		0.704

6. Discussion

The result of unaided recall and recognition tests shows that most of the respondents were aware of the presence of the GDA system printed on the food label. Without seeing directly the GDA-label the respondents could recognize the symbol and more or less correctly answer all given questions. They had a rough idea of the content and appearance of the big-four symbols printed on the GDA-information. On the average the respondents had a moderate prior knowledge concerning GDA information. They had some ideas about the content of the ”big-four” in the GDA system and understood which nutrients are included in the symbol. However, due to the fact that respondents in most instances were educated people and considering that this GDA information has already been introduced in 2007 this study provides evidence that the general consumers' prior knowledge is relatively unsatisfactory.

In the recognition test this study confirmed that in a low involved situation consumers were still able to learn the GDA-information in a very detailed way. Further, it can be interpreted that this symbol is quite simple and self explaining. Even in a low involvement situation the consumers have the ability to process, interpret and store the learned information in their working memory. They have the ability to retrieve the stored information and use it for answering the given questions.

The low result for consumer comprehension argues for a strong demand for more information, education and learning process. Knowing the appearance and content of the labeling should be accompanied by a certain level of understanding on how to apply the information on the label for consuming a healthy diet. This was the original concept for the introduction of the GDA system. With performing an appropriate social campaign on the GDA system this goal can be achieved. It is not enough just to print the GDA system on the package label, but an investment has to be made into improving consumers' comprehension. This is important because the variable “learning” including the level of comprehension determines consumers' attitude and intentional behavior to use GDA information for a daily decision making of food consumption. This causal relationship has been established by path analysis (PLS), as has been discussed earlier. For the purpose of conceptualizing a campaign and promotion of the GDA system either hedonic or utilitarian motives can be used. Both of them have a similar impact on motivating people to enter a learning process. With these above mentioned findings this present study provides evidence that our two previously formulated hypothesis (H1 and H2) can be rejected.

7. Limitations of the study:

As a pilot study this investigation has some crucial limitations, which have to be taken into consideration. Firstly, respondents were mainly consumers with relatively good education background living in the Federal State of Hessen. Therefore, this study can not represent the actual distribution of German population. Because the GDA information was designed for all consumers including lay persons and people with low educational level, the next study on this issue should also cover those groups of respondents.

Secondly, this study employed a manipulative method of low involved learning. The actual learning process may take place either in the store or during consumption. This may have an unknown impact on the result.

Finally, this study covered only the issue of short term learning and working memory. Considering that a lot of information stored in the working memory may get lost with time it is preemptive to study the long-term process of learning. This topic will provide a better knowledge on the effective utilization of GDA-information.

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