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ASSESSING THE VOICE OF THE CUSTOMER FOR A SUSTAINABLE CLEANING PRODUCT USING THE HWWP-DDDI MODEL

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Abstract: *In a marketplace where educated customers seek qualitative products and responsible providers of value, where sustainability is appreciated and desired but not enough promoted, managers need to apply the theory of attractive quality to better assess the voice of their customers. The current paper aims to prove that new models can offer relevant information for decision making. Thus, for the case study of a global company which launches a cleaning product made of probiotics for the Romanian market segment, 18 potential features have been delimited, a Kano and importance questionnaire has been built and applied on 98 respondents to identify the sustainable characteristics appreciated by consumers. Based on this data, the HWWP-DDDI model has been built and relevant strategic discussions have been delineated.*
Keywords: *Kano questionnaire, customer requirements, non-toxic product, cruelty-free, recyclable container, clean label.*

1. INTRODUCTION

In the current context of growing concerns for environmental protection and responsible consumption, sustainability has become an essential criterion in the customers' decision-making process. Cleaning products raise many questions regarding their impact on the environment and human health, which leads companies to adopt more responsible and transparent communication strategies.

85% of people have a more positive opinion of companies that support important causes, and over half of them are willing to pay more for products associated with such causes [1]. The concept of the "socially responsible consumer" was introduced by Roberts [2]. Creyer [3] showed that a company's ethics influenced purchasing decisions, since customers were willing to pay more for such products and appreciated ethical behavior. Thus, companies which are offering sustainable products and know how to efficiently communicate their offer to the customer, have a decisive competitive advantage.

In this context, an international company which operates in the ecological cleaning products domain, aims to expand into the Romanian market. For this approach to be sustained, it is essential to adapt the visual communication of the products, especially the labels, to the expectations and preferences of Romanian consumers. The research proposes the identification of valuable sustainable characteristics such as non-toxic or cruelty-free which are valued by Romanian customers with the help of a Kano and importance questionnaire. The results are furthermore analyzed using the refined HWWP-DDDI model for strategic decision making and managerial implications are delineated.

2. METHODOLOGY

The present research follows a clear methodology, based on six steps. After establishing the objective of the study, the research is prepared, the questionnaires are built, data is collected and adequately analyzed for valuable insights into the voice of the customer.

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As presented in Fig.1, the main objective of the present research is identifying and analyzing the most relevant features of a sustainable cleaning product. But what are the most important features of such a product?

Weinrich & Spiller [4] talk about the role of labels in communicating sustainability and argue that labels can help consumers learn about the hidden attributes of products, but also about the processes through which the products they are interested in are manufactured and marketed. At the same time, Donato & D'Aniello [5] believe that sustainable labels help consumers evaluate the sustainability aspects of the products they are about to purchase. Thus, the most important characteristics of a sustainable product should be communicated through a clean label. Scholars argue that clean labels refer to a simplified and transparent list of ingredients [6], non-toxic, the absence of artificial additives, natural ingredients, cruelty-free [7], sustainable packaging and/or eco-friendly [8].

The product's innovative features need to be highlighted as well. In this case, the addition of probiotic strains in the cleaning solution has a major advantage since the use of probiotics can reduce not only antimicrobial resistance genes or antibiotic consumption but also costs [9].

With the help of its corporate professionals and literature viewpoints, in Table 1 a list of 18 potential customer requirements has been suggested. The present study needs to assess which of these characteristics are valued by Romanian household users for building a targeted launching marketing campaign and a personalized packaging.

Based on the 18 requirements, a Kano and importance questionnaire has been built. The Kano questionnaire resides two opposite questions seen from a functional and dysfunctional side for each product characteristic [10]. Thus, each product feature triggers different customer perceptions like desired, attractive, basic, not desired, or indifferent, determining a specific Kano category: attractive, one-dimensional, must-be, indifferent and reverse. Questionable categories are delineating a wrong question or a distracted respondent which should be excluded from the results analysis.

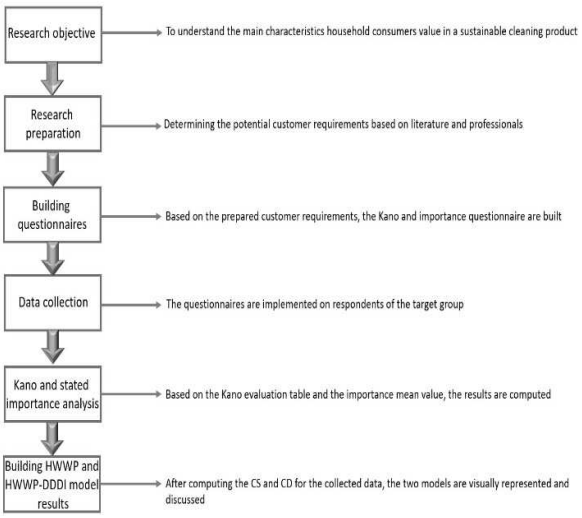

Fig. 1. Research methodology.

Table 1

Customer potential requirements for a sustainable and innovative cleaning product.

No.	Customer requirements
1	Cruelty free
2	Microscopic cleaning
3	Organic matter dissolution
4	Eliminate odors
5	72 h active
6	Non-toxic
7	Certified laboratory
8	500 ml weight
9	Recycled container
10	Recyclable container
11	White container
12	Rectangular container
13	Fine spray pump
14	Opening label
15	Usage images on label
16	Acquisition options
17	English name
18	Samples promotions

The importance questionnaire asks the respondent to assess the importance of each feature based on a Likert scale from 1-10, where 1 is not at all important and 10 is extremely important. It is often embedded in the Kano model, offering the expert a hierarchy for each Kano category. After the implementation of the questionnaires, the Kano and importance results are computed with additional coefficients like Berger [11]'s Customer Satisfaction and Customer Dissatisfaction indexes as expressed in equation (1) and (2).

$$CS = \frac{A+O}{A+O+M+I} \quad (1)$$

$$CD = \frac{O+M}{A+O+M+I} \quad (2)$$

The CS coefficient is furthermore used in establishing the HWWP (Health Weapon Wealth Prospect) model proposed by Potra et al. [12]. In the present study, Potra and Pugna [13]'s refined HWWP-DDDI model will be used since it is the most accurate approach which uses both CS and CD with importance of wants to establish the strategic direction for each product feature. The refined model structure can be seen in Fig.2, where there are three variables engaged (CS as potential value added, CD as potential value loss and Imp – stated importance of customers) in representing the strategic dimensions and values each product characteristic could provide to the overall offer. Thus, the 18 proposed customer requirements will be assessed with the HWWP-DDDI model in terms of opportunities and threats for the future. The same feature will be represented in the upper part of the model to see what added value it brings to the product and in the lower part where the value loss is established if the feature is not implemented.

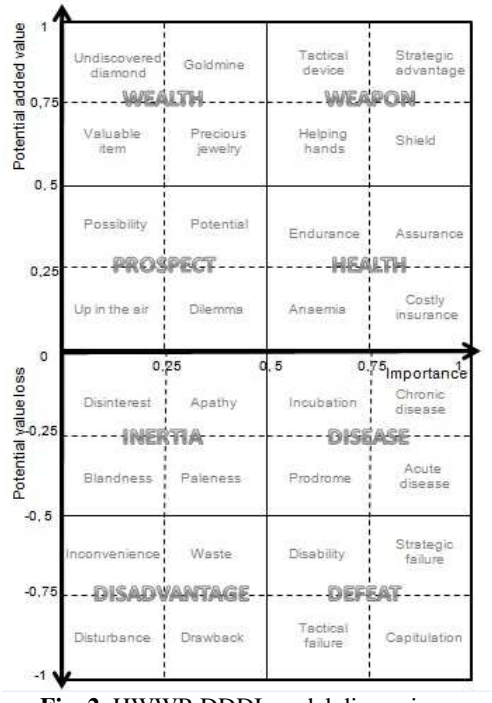

Fig. 2. HWWP-DDDI model dimensions (Source: Potra and Pugna, 2020).

3. RESULTS

3.1 Participants

The platform used was Google Forms, each questionnaire being completed online, with 98 valid responses. The respondents were both women and men, with a high share of women (82%), the motivation being simple, they are the ones who are responsible in the vast majority of cases for household cleaning. They also represent the target group of the company. Regarding the respondents' age, 57% were between 27-45 years old, which is understandable because at this age, higher education is usually completed and enough experience is accumulated to reach a higher position in an organization. 43% of the respondents admitted to earn individually more than 1000 euros/month, being able to afford an expensive but qualitative cleaning product.

Asked about the cleaning product features which would determine them to pay extra, a significant number of 61 respondents (78%) appreciated the lack of toxicity as an attribute worth paying more for. Deep cleaning at the microscopic level was also appreciated, these two being among the most relevant features that need to be highlighted in the future promotion of the company's products.

3.2 Kano and importance questionnaire results

After personal and introductive questions, the questionnaire continued with the Kano functional and dysfunctional questions and the importance scale for each product feature. In Table 2 the results of the 98 responses are computed as expressed, with the Customer Satisfaction (CS) and Customer Dissatisfaction (CD) coefficients.

The satisfaction coefficients offer a broader image about the entire cleaning product and its potential advantages and disadvantages after launch.

Table 2

Kano and importance results, CS and CD coefficients representation.

No.	Customer requirements	A	O	M	I	R	Q	Total	Kano category	CS	CD	Importance
1	Cruelty free	6	45	23	20	3	2	98	O	0.54	0.73	0.77
2	Microscopic cleaning	34	33	4	28	0	0	98	A-O	0.68	0.37	0.72
3	Organic matter dissolution	15	55	10	13	4	1	98	O	0.75	0.69	0.83
4	Eliminate odors	16	59	18	6	0	0	98	O	0.76	0.78	0.89
5	72 h active	51	25	2	18	3	0	98	A	0.8	0.28	0.68
6	Nontoxic	13	62	17	7	0	0	98	O	0.76	0.8	0.9
7	Certified laboratory	25	35	20	19	0	0	98	O	0.61	0.56	0.78
8	500 ml weight	31	12	0	53	1	1	98	I	0.44	0.12	0.49
9	Recycled container	40	28	5	26	0	0	98	A	0.69	0.33	0.67
10	Recyclable container	31	45	8	15	0	0	98	O	0.77	0.54	0.77
11	White container	18	6	2	73	0	0	98	I	0.24	0.08	0.43
12	Rectangular container	12	2	1	81	3	0	98	I	0.15	0.03	0.4
13	Fine spray pump	34	35	11	19	0	0	98	O-A	0.7	0.46	0.7
14	Opening label	32	21	11	34	1	0	98	I-A	0.54	0.32	0.56
15	Usage images on label	37	23	13	25	0	1	98	A	0.61	0.37	0.71
16	Acquisition options	39	36	10	11	0	3	98	A-O	0.78	0.48	0.75
17	English name	8	1	0	57	23	10	98	I-R	0.13	0.01	0.45
18	Samples promotions	58	18	2	20	1	0	98	A	0.78	0.2	0.56

Five of the 18 requirements seem indifferent to the respondents, six attractive and the majority are desired, performance features. Some requirements have close Kano categories like microscopic cleaning, fine spray pump and acquisition options (number 2, 13 and 16 in Table 2), when the management team must decide if they will become performance attributes and invest significantly in their development or just good-to-have features of the new product. Others are just not clearly assessed for the design engineers to undoubtable focus or not on them. There is no hierarchy in the O-one-dimensional features, nor in the A-attractive ones, and CS, CD and importance alone do not provide a concluding image. Thus, a further step needs to be taken, namely building the HWWP-DDDI model which can be seen in Figure 3.

With the help of this approach, requirement 2 and 13 if adequately implemented have the potential to help the company (situated in the upper part Weapon – Helping hands dimension) and if not met, they could indicate towards a downfall of the new product (situated in the lower part Disease-Prodrome dimension). But for requirement 16 – acquisition options, its strategic advantage potential makes it a very important aspect of the new offer. If not implemented, it could jeopardize the company since it is situated in the lower part of the model which is correlated with acute disease.

In the same manner, the O-One-dimensional characteristics can be prioritized. For example, requirement 3 (organic matter dissolution) and 4 (eliminate odors) are both a potential strategic advantage but if not adequately met, feature 3 determines a strategic failure and 4 denotes the capitulation of the new offer in front of other competitors. Therefore, eliminating odors needs

to be well promoted, way more than other characteristics of the new cleaning product.

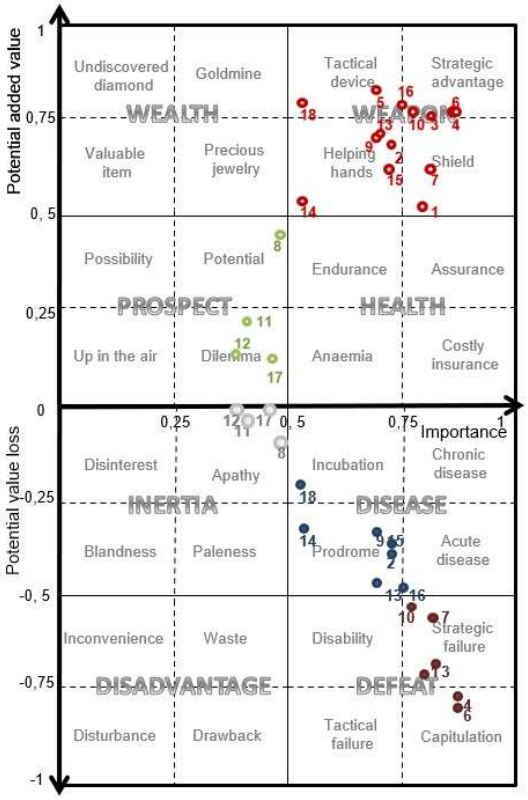

Fig. 3. HWWP-DDDI model dimensions computed for the sustainable cleaning product.

4. DISCUSSIONS AND CONCLUSIONS

Since sustainable products are increasingly appreciated by a growing segment of educated population all around the world, their advantages need to be adequately promoted. The present study proposes the usage of the HWWP-DDDI model based on the theory of attractive quality to assess the potential requirements of a cleaning product made of probiotics for the Romanian marketplace.

The 18 proposed requirements are analyzed based on 98 responses, Kano categories, stated importance and satisfaction coefficients are computed.

The results indicate that the elimination of odors with the lack of toxicity are the most appreciated and desired features, becoming essential for the new product. Also, cruelty free and the dissolution of organic matter are triggering a considerable customer dissatisfaction if not provided, becoming a strategic failure not focusing on them in the product launching campaign.

Other managerial implications can be discussed as well for all the product's proposed characteristics. Nevertheless, the approach proves to be effective once again in differentiating between quality attributes and visualizing the strategic paths of each feature of the analyzed offer.

This study aims to provide a clear methodology to be used for analyzing the voice of the customer, especially for sustainable products which are in their early stages on the market. Due to their higher prices, an adequate marketing campaign can make the difference. For that, design engineers and their managers need to understand on which features to focus, which to promote and invest within.

5. ACKNOWLEDGEMENT

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Determinarea vocii clientului pentru un produs sustenabil de curățare prin utilizarea modelului HWWP îmbunătățit

Intr-o piață în care clienții educați caută produse calitative și furnizori responsabili de valoare, unde sustenabilitatea este apreciată și dorită, dar nu suficient promovată, managerii trebuie să aplice teoria calității atractive pentru a evalua mai bine vocea clienților lor. Lucrarea de față își propune să demonstreze că noile modele teoretice din domeniu pot oferi informații relevante pentru luarea deciziilor. Astfel, pentru studiul de caz al unei companii globale care lansează un produs de curățare pe bază de probiotice pentru segmentul de piață din România, au fost delimitate 18 caracteristici potențiale, a fost construit un chestionar Kano și de importanță, aplicat pe 98 de respondenți pentru a identifica caracteristicile de sustenabilitate apreciate de consumatori. Pe baza acestor date, a fost construit modelul HWWP-DDDI și au fost conturate discuțiile strategice relevante.

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