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THE PROPERTIES AND QUANTITATIVE INDICES OF THE ASSORTMENT OF GOODS - TOOLS TO ANALYZE AND OBJECTIVE ESTIMATION OF IT

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Abstract

The systematic analysis and estimation, the timely improvement of the commercial assortment of goods, are important components of the commercial activity, directed to the formation and maintenance of the optimal assortment of goods in the offer of the retail trade enterprise. Optimality of trade assortment of goods is a complex property which combines a few properties of trade assortment of goods, nomenclature which is still under development. It is important that the properties of the range of goods to be separately nominated, defined and uniformly used in commercial practice.

In this work an extensive set of properties (characteristics) of the commercial assortment of goods are highlighted, nominated, symbolized distinct and defined (revised, specified or first time)) and qualitative and quantitative indicators of the properties nominated, as well as the methods and formulas for the establishment and evaluation of quantitative properties (characteristics) of the trading range of goods are developed, symbolized distinct and presented. The complex includes the following 23 properties (characteristics):coverage (y), span (e), stretch (r), length (l), thickness (u), breadth (m), profoundness (h), plenitude (p), complexity (k), novelty (n), optimality (o), structure (s), stability (c), replacement (z), renewal (i), expanding (dy), widening (de), stretching (dr), elongation (dl), thickening (du), expansion (dm), deepening (dh), filling (dp).

Keywords*: the trade assortment of goods; the properties of the commercial goods assortment: coverage, span, stretch, length, thickness, breadth, depth, plenitude, complexity, novelty, optimality, structure, stability, replacement, renewal, expanding, widening, stretching, elongation, thickening, expansion, deepening, filling*

1. Introduction

The specialists and scientists concerned with the organization and conduct of the retail trade with the consumer goods pay great attention to the formation of the commercial goods assortment, which underlies the satisfaction of the consumers' needs and the demand of the buyers, predetermines to a great extent the efficiency of the trade activity of the commercial enterprise [2-5; 8; 10; 12-16; 18-19].

Formation of the commercial assortment - activity of creating the set of goods offered by the trade enterprise to the buyers, taking into account the needs of the consumers and the need to ensure the profitability of the commercial activity of the enterprise [3; 8]. Needs of consumers and buyers' demand for consumer goods are in constant change, perfecting, which causes the necessity of systematic improvement of the commercial assortment of goods. Both the constitution as well as the systematic improvement of the commercial assortment presuppose its ample and objective

analysis, which requires the highlighting and research of the properties of the commercial goods assortment, the elaboration of the indices of its characteristics [2-3; 8-10; 13-16].

Property of assortment – specific feature which is manifested in the formation and modification, and index (indicator) of the assortment – quantitative expression of the property (characteristic) assortment of goods [3; 10]. The properties and indices of the commercial goods assortment, expressing numerical co-report between different segments of the range of goods [2-3; 10; 12-14; 18] and are arranged according to the hierarchical classification of consumer goods. Therefore, highlighting the properties and developing the set of indices of commercial assortment of consumer goods can only be made on the basis of clear goods classification, well-grounded and clear definitions of classification levels.

The nomenclature of properties and indices of the assortment of goods are the basic tools of the management of the commercial consumer goods assortment, which consists in the timely formation, modification and maintenance within the optimal limits of the set of properties (characteristics) of the commercial goods assortment [3; 8; 11]. So, in order to manage the commercial goods assortment, it is necessary to determine the nomenclature and the limits of the property (characteristics) of the assortment.

2. Degree of investigation of the problem at the moment, the purpose of the research, methods and applied materials

According to the scientific development of the last decades, the commercial goods assortment is characterized by a set of qualitative descriptive properties [characteristics] [2-3; 8; 10; 12], which can be estimated quantitatively by the respective coefficients, but the nomenclature of these characteristics (properties) is in the process of developing.

In specialty literature [2-3; 8; 12-14; 18] some properties of the commercial goods assortment are nominated, but the definitions, descriptions, symbols and ways of calculating their indices are not unified, which prevents uniform use in practice.

The purpose of this paper is to improve and complement the nomenclature, to formulate and to distinguish the definitions, to develop the distinctive symbolization and the ways of calculating the different quantitative indices of the properties of the commercial assortment of consumer goods.

Development is done using mathematical statistics methods, such as: comparative analysis, correlation analysis, analogy, induction and deduction, expertise, practical experience, etc. Definitions are proposed by focusing on standards on commercial terminology [17] and specialty literature [2-3; 5-6; 8; 10; 12-14; 18]. Highlighting and identifying the properties of the goods assortment are carried out according to the proposals of the scientists [2-3; 13-14], based on the hierarchical classification of consumer goods [7; l3], which encompasses several levels [7; 10; 13].

In order to nominate and define the properties (characteristics) of the commercial goods assortment there are used classification levels: classes, subclasses, groups, subgroups, types, subtypes and varieties. Taking into account the normative and technical documents [1; 17] and

specialty literature [7; 10; 12-13; 19], we have used the following specified definitions regarding levels of consumer goods classification and respective symbols [3; 10]:

- ✓ Class (C) of goods –the ensemble of goods with analogue functional purpose;
- ✓ Subclass (C_s) of goods - segment of the goods ensemble of the goods class distinct by the raw material or the principle of functioning, satisfaction of the consumers' needs;
- ✓ Group (G) of goods - reunited (aggregated) range of goods based on common raw material or on a directional basis of any common features of use, operation, satisfaction of a specific group of consumer needs;
- ✓ Subgroup (G_s) of goods - subdivision or part (a set, segment) of the range of goods of a group that differs from other sets (segments) by one or more distinct particularities;
- ✓ Type (T) of goods - genus (species, kind, etc.) of goods, which has representative features essential for a large number of distinctive goods units, which in particular satisfy a distinct need for consumers;
- ✓ Subtype (T_s) of goods - subdivision (sort, breed, etc.) or part (a set, segment) for a large number of goods of the same type that differ from other segments by one or more distinct consumption properties;
- ✓ Variety (V) of goods - representative (distinct name) of the subtype (type) of goods, which possesses one or several distinct properties and satisfies one or more of the needs of consumers, in particular.

At the same time, we mention that the variety (subtype, type, subgroup, etc.) of **goods** may be **old**, known on the consumer market for a long time (the length of the period of obsolescence perception depends on the hierarchical level, for example: the variety of goods could be considered old 6 months after it appears on the consumer market, the subtype - after 12 months, the type - after 24 months, the subgroup - after 5 years, the group - after 10 years etc.), and **new** or **renewed**. As **new** consumer **goods**, we consider goods with new consumer properties that are designed to meet new human needs, or obtained, manufactured from the new raw material or in an absolutely innovative composition or operating and satisfying the needs of the consumer on the basis of fundamentally new principles or regularities, but the **renewed goods** (**modernized, perfected, ennobled**) are the well-known goods, but modified, perfected, ennobled, etc. in order to satisfy as much as possible the requirements of the consumers in constant development. When renewing the goods range, both new and renewed goods contribute to it.

Obviously, the commercial goods assortment consists of varieties of goods of the respective types (subtypes) organized into groups (subgroups) of goods and the latter into classes (subclasses) that constitute the supply of goods of the commercial enterprise. In this paper the following notions are also used:

- optimal assortment - a range of goods that, mostly, corresponds to the consumers' needs and buyers' demand, on the one hand, and, on the other hand, corresponds mostly to both the possibilities and interests of the producers and the seller, as well as the high consumption culture and healthy lifestyle, namely the needs and economic and social requirements of society;
- complex assortment (complex of goods) - set of consumer goods that meet a complex necessity (a complex of interconnected necessities);

- elaboration of the structure of optimal assortment- establishment of the co-reports between the weights of the groups, subgroups, types, subtypes and varieties of consumer goods in the offer of goods in accordance with the structure of the buyers' demand, taking into account the possibilities of the consumer goods providers (producers).

It is also appropriate to distinguish, on the one hand, the basic assortment (b) which composition and characteristics are determined by external or internal regulatory acts of the commercial entity, and, on the other hand, the analyzed assortment (a) consisting of the goods present in the goods supply of the commercial unit at that time and which is researched (analyzed).

3. Results obtained and discussions. The extended complex of properties and indices of the commercial goods assortment

Having the definitions of levels of classification of consumer goods and of types of commercial assortment [3; 7-8; 10; 13], we propose the following extended complex (nomenclature) of properties (characteristics) and measurable coefficients of the commercial goods assortment as well as the ways of calculating these indicators:

- coverage (y) - number of classes, and in the case of division of the class into subclasses - the number of classes, which do not divide into subclasses, and subclasses of other classes in the commercial goods assortment. The degree (level) of covering of the assortment is expressed by the *coefficient of coverage* (y), which is calculated by reporting the number of classes (*Ca*),which do not split into subclasses, plus the number of subclasses in the other classes ($C_s a$) (number of classes and subclasses*) of goods in the assortment analyzed ($Ca + C_s a$) to the number of classes in the basic assortment (*Cb*), which do not divide into subclasses, plus the number of subclasses in the other classes ($C_s b$) (number of classes and subclasses*) of goods from the basic commercial goods assortment ($Cb + C_s b$),

$$y = \frac{C_a + C_{sa}}{C_b + C_{sb}}. \qquad (1)$$

Depending on the coverage, the commercial goods assortment is *comprehensive (extended),* if it includes more than 2 classes or more than 6 subclasses of consumer goods, *relatively comprehensive (extended),* if it includes 2 classes or 3-6 subclasses of consumer goods, and *not comprehensive (restricted),* if it consists of a class without or with 2 subclasses of consumption goods, and depending on the *coefficient of coverage*, the commercial assortment of consumer goods analyzed has the *corresponding coverage*, when $y \geq 1$[1)], *satisfactory*, when y = 0.7–0.99 and *unsatisfactory*, when y <0.7;

[1)] Note: In all cases the coefficient may exceed the value of 1, if the base assortment does not include all assortment items in the Combined Nomenclature of Goods [1].
*) In all cases the numbers include classes that do not divide into subclasses and subclasses of other classes.
**) In all cases the numbers include the groups that do not divide into subgroups and the subgroups of the other groups.
***) In all cases, numbers include types that do not divide into subtypes and subtypes of others types.

- **span** (width, latitude) **(e)** - number of groups, and in the case of division of the group into subgroups - the number of groups, which do not divide into subgroups, and subgroups of other groups in the commercial goods assortment. The degree (level) of the span (latitude) is expressed by the *coefficient of span or width (latitude) (e)*, which is calculated by reporting the number of groups (*Ga*),which do not divide into subgroups, plus the number of subgroups of other groups ($G_s a$) (number of groups and subgroups**) of goods in the assortment analyzed ($Ga + G_s a$) to the number of groups in the basic assortment (*Gb*), which do not divide into subgroups, plus the number of subgroups in the other groups (number of groups and subgroups**) of goods of the basic assortment ($Gb + G_s b$),

$$e = \frac{G_a + Gsa}{G_b + G_{sb}}. \qquad (2)$$

Depending on the span, the commercial goods assortment is *wide*, if it includes over 3 groups or over 8 subgroups of consumer goods, *relatively wide*, if it includes 2-3 groups or 4-8 subgroups of consumer goods, and *narrow*, if it consists of a group without or with 2-3 subgroups of consumer goods, and depending on the *coefficient of span*, the analyzed commercial assortment of consumer goods has the *corresponding span*, when e≥1, *satisfactory*, when e = 0.7– 0.99 and *unsatisfactory*, when e < 0.7;

- **stretch (r)** - number of subgroups in the group of goods (*G*) of the commercial goods assortment. The degree (level) of the extent of the commercial assortment of the group of goods is expressed by the *coefficient of stretch* (r), which is calculated by reporting the number of subgroups of goods in the examined group ($G_s a$) of goods in the assortment analyzed to the number of subgroups of goods in the given group from the basic commercial assortment ($G_s b$) of goods,

$$r = \frac{Gsa}{Gsb}. \qquad (3)$$

Depending on the stretch, the commercial assortment of the group of goods is *stretched*, if the group includes over 6 subgroups of consumer goods, *relatively stretched*, if it includes 3-6 subgroups of consumer goods, and *tight*, if it is constituted by a group without or with 2 subgroups of consumer goods, and depending on the *coefficient of stretch*, the commercial assortment of consumer goods analyzed is *corresponding stretch*, when r ≥ 1, *satisfactory*, when r = 0.7– 0.99 and *unsatisfactory*, when r < 0.7;

- **length** (longitude) **(l)** - number of types, and in the case of type subdivision in subtypes - the number of types, which do not divide into subtypes, and subtypes of the other types in the assortment of the goods group (subgroup). The degree (level) of the length (longitude) of the assortment is expressed by the *coefficient of length or longitude* (l), which is calculated by reporting the number of types (*Tga*), which do not divide into subtypes, plus the number of subtypes from the other types ($T_s ga$) (number of types and subtypes ***) of goods in the assortment of the group (subgroup) analyzed ($Tga + T_s ga$) to the number of types in basic assortment (*Tgb*), which do not divide into subtypes, plus the number of subtypes of the other

types (T_sgb) (number of types and subtypes ***) of goods from the basic assortment ($Tgb + T_sgb$) of the group (subgroup) in question,

$$l = \frac{T_{ga}+T_{sga}}{T_{gb}+T_{sgb}} \quad (4)$$ (in the case of the group of goods) or

$$l = \frac{T_{gsa}+T_{sgsa}}{T_{gsb}+T_{sgsb}} \quad (5)$$ (in the case of the subgroup of goods).

Depending on the length, the commercial assortment of the goods group (subgroup) is *long*, if the group (subgroup) includes more than 4 types or over 8 subtypes of consumer goods, *relatively long*, if it includes 3-4 types or 5-8 subtypes of consumer goods, and *short*, if it is composed of 1-2 types without or with 1-2 subtypes of consumer goods, and depending on the *coefficient of length*, the commercial assortment of consumer goods analyzed has the *corresponding length*, when $l \geq 1$, *satisfactory*, when l = 0.7– 0.99 and *unsatisfactory*, when l<0.7;

- **thickness (u)** - number of subtypes (T_s) of the type of goods in the commercial goods assortment. The degree (level) of thickness of the commercial assortment of the type of goods is expressed by the *coefficient of thickness* (u), which is calculated by reporting the number of subtype of goods of the type of goods examined (T_sa) in the assortment analyzed to the number of subtypes of goods of the type of goods given in the basic commercial assortment (T_sb) of goods,

$$u = \frac{Tsa}{Tsb}. \quad (6)$$

Depending on the thickness, the commercial assortment of goods type is *thick*, if the type includes over 5 subtypes of consumer goods, *relatively thick*, if it includes 3-5 subtypes of consumer goods and *thin*, if it is constituted by a type without or with 2 subtypes of consumer goods and depending on the *coefficient of thickness*, the commercial assortment of consumer goods analyzed has the *corresponding thickness*, when $u \geq 1$, *satisfactory*, when u =0.7– 0.99 and *unsatisfactory*, when u < 0.7;

- **breadth (m)** - total number (sum) of the types, and in the case of division of type into subtypes- total number (sum) of types, which do not divide into subtypes, and subtypes of the other types in all subgroups of the goods group. The degree (level) of breadth of the assortment of the group of goods analyzed is expressed by the *coefficient of breadth* (m), which is calculated by reporting the total number (sum) of types ($\sum Tg_sa$),which do not divide into subtypes, plus the total number (sum) of subtypes from other types ($\sum T_sg_sa$) (number of types and subtypes***) of all the subgroups of the commodity group analyzed ($\sum Tg_sa + \sum T_sg_sa$) to the total number (sum) of types of the basic assortment ($\sum Tg_sb$),which do not divide into subtypes, plus the total (sum) number of subtypes of other types ($\sum T_sg_sb$) (number of types and subtypes ***) in all subgroups of the respective goods group ($\sum Tg_sb + \sum T_sg_sb$),

$$m = \frac{\Sigma T_{gsa}+\Sigma T_{sgsa}}{\Sigma T_{gsb}+\Sigma T_{sgsb}}. \quad (7)$$

Depending on the breadth, the commercial assortment of the group of goods is *broad*, if the group includes over 12 types or more than 20 subtypes of consumer goods, *relatively broad*, if it includes 8-12 types or 15-20 subtypes of consumer goods, and *narrow* , if it is composed of 1-7 types without or with 1-2 subtypes of consumer goods, and depending on the *coefficient of breadth*, the commercial assortment of consumer goods analyzed has the *corresponding breadth*, when m ≥1, *satisfactory*, when m = 0.7– 0.99 and *unsatisfactory*, when m < 0.7;

- **profoundness** (depth) **(h)** - number of varieties within the type (subtype) of goods. The degree (level) of depth is expressed by the *coefficient of profoundness (depth)* (h), which is calculated by reporting the number of varieties of goods within the analyzed type (subtype) of the goods (*Vta* or Vt_sa) to the number of varieties of goods within the respective basic type (subtype) of goods (*Vtb or* Vt_sb),

$$h_t = \frac{V_{ta}}{V_{tb}} \quad (8) \quad \text{or} \quad h_{ts} = \frac{V_{tsa}}{V_{tsb}} \quad (9).$$

Depending on the profoundness, the commercial assortment of the goods type (subtype) is *profound (deep),* if the type (subtype) includes over 6 varieties of consumer goods, *relatively profound*, if it includes 3-6 varieties of consumer goods, and *superficial (not profound, not deep),* if it is made up of 1-2 varieties of consumer goods, and depending on the *coefficient of profoundness (depth)*, the commercial assortment of consumer goods analyzed has the *corresponding depth*, when h ≥1, *satisfactory*, when h = 0.7– 0.99 and *unsatisfactory*, when h < 0.7;

- **plenitude** (fullness) **(p)** - total number (sum) of varieties of goods in the assortment of class (∑Vc) or subclass ($\sum Vc_s$), or group ($\sum Vg$) of consumer goods analyzed. Degree (level) of the plenitude of the assortment of the class (subclass or group) of goods analyzed is expressed by the *coefficient of plenitude* (p), which is calculated by reporting the total number (sum) of varieties of goods within the class (of all subclasses, groups, subgroups, types and subtypes of the respective class) or of subclass (of all groups, subgroups, types and subtypes of the respective subclass), or of group (of all subgroups, types and subtypes of the respective group) of goods in the assortment analyzed ($\sum Vca$ or $\sum Vc_sa$, or $\sum Vga$) to the total number (sum) of goods varieties within the class or subclass, or respective group of goods in the basic assortment ($\sum Vcb$ or $\sum Vc_sb$, or $\sum Vgb$),

in the case of class analysis: $p_c = \frac{\Sigma V_{ca}}{\Sigma V_{cb}}$, (10) or in the case of the analysis of the subclass:

$$p_{cs} = \frac{\Sigma V_{csa}}{\Sigma V_{csb}}, \quad (11) \quad \text{or} \quad \text{in the analysis of the group of goods:} \quad p_g = \frac{\Sigma V_{ga}}{\Sigma V_{gb}} \quad (12).$$

Depending on the plenitude, the commercial assortment of the class or subclass, or of the group of goods is *full (complete*), when p≥1 and *incomplete (reduced, partial),* when p<1. The *incomplete (reduced, partial)* assortment can be qualified as *rich,* when p=0.81–0.99, *satisfactory,* when p=0.5–0.8 and *poor*, when p<0.5.

In the analogue mode it can be calculated the coefficients of the fullness of the whole assortment, or subgroup, of the type or subtype of goods analyzed;

- **complexity (k)** - the correspondence of the nomenclature of types (subtypes) of goods from the assortment analyzed to the nomenclature of the types (subtypes) of goods from the complex assortment (complex of goods) envisaged for satisfying the needs of certain groups of consumers (for youth, tourists, newborns, women, etc.), or for meeting the complex of related needs (for home, kitchen, garden, orchard, motor vehicles, etc.).The degree (level) of complexity is expressed by the *coefficient of complexity* (k), which is calculated by reporting the number of types (*Tka*), which do not divide into subtypes, plus the number of subtypes from the other types ($T_s ka$) (number of types and subtypes ***^{j}) of goods within the complex assortment of approved (basic), present in the assortment analyzed (*a*) to the number of types (*Tkb*), which do not divide into subtypes, plus the number of subtypes of the other types ($T_s kb$) (number of types and subtypes ***^{j}) of goods within the respective basic complex assortment (*b*),

$$k = \frac{T_{ka} + T_{ska}}{T_{kb} + T_{skb}}. \qquad (13)$$

The complexity of the commercial assortment of consumer goods is *corresponding*, when the *complexity coefficient* k ≥1, *satisfactory*, when k= 0.7–0.99 and *unsatisfactory*, when k < 0.7;

- **novelty (n)** - number of varieties of goods, presented on the consumer market as new and upgraded (*Vn*), included in the assortment analyzed over the determined period of time. The degree (level) of novelty assortment is expressed by the *coefficient of the novelty* (n), which is calculated by reporting the number of varieties of goods, present on the consumer market as new and upgraded (*Vn*), included in the assortment analyzed (*Vna*) over the determined period of time (90 or 180days), to the number of varieties in the assortment analyzed (*Va*),

$$n = \frac{V_{na}}{V_a}. \qquad (14)$$

Depending on the novelty, the commercial goods assortment is *innovative*, when the *coefficient of novelty* n>0.l, *relatively innovative*, when n = 0.03 – 0.1 and *conservative*, when n < 0.03;

- **optimality (o)** - the correspondence to the nomenclature of the varieties of goods from the assortment analyzed to the nomenclature of varieties of goods in the optimal assortment. The degree (level) of optimality assortment is expressed by the *coefficient of the optimality* (o), which is calculated by reporting the number of varieties of goods from the assortment of optimal, presented in the assortment analyzed (*Voa*), to the number of varieties of goods established in the optimal basic assortment (*Vob*),

$$o = \frac{V_{oa}}{V_{ob}}. \qquad (15)$$

Depending on optimality, the commercial goods assortment is *optimal*, when the *coefficient of optimality* o = l, *sufficiently optimal*, when o = 0.7– 0.99 and *non-optimal*, when o < 0.7;

- **structure (s)** - the composition of assortments of groups (subgroups), types (subtypes), varieties, etc. of goods and the respective weight of each group (subgroup), of each type (subtype) and of each varieties in total volume of the analyzed assortment expressed in value (w) or physical quantity (f), or numerical (q). Quantitatively the structure of the goods assortment is expressed by the *coefficients of weight* (s) of each component in the total volume of the assortment analyzed:

• coefficient of weight in the total *value* volume (S_w) is calculated by reporting the value of the group (G_{iw}) or the subgroup (G_{siw}), type (T_{iw}) or subtype (T_{siw}), variety (V_{iw}) respective to the total assortment analyzed ($\sum G_{wa}$, $\sum G_{swa}$, $\sum T_{wa}$, $\sum T_{rswa}$, $\sum V_{wa}$),

$$s_w g_i = \frac{G_{iw}}{\sum G_{wa}} \text{ (16) or } s_w g_{si} = \frac{G_{siw}}{\sum G_{swa}} \text{ (17);}$$

$$s_w t_i = \frac{T_{iw}}{\sum T_{wa}} \text{ (18) or } s_w t_{si} = \frac{T_{siw}}{\sum T_{swa}} \text{ (19); } s_w v_i = \frac{V_{iw}}{\sum V_{wa}} \text{ (20);}$$

• weight coefficient in the total volume expressed in the *physical* (S_f) or *numerical* (S_q) quantity is calculated by reporting the physical (mass, surface, volume, etc.) or numerical (units etc.) quantity of the group (G_{if}, G_{iq}) or subgroup (G_{sif}, G_{siq}), type (T_{if}, T_{iq}) or subtype (T_{sif}, T_{siq}), variety (V_{if}, V_{iq}) respectively to the total physical or numerical quantity (volume) of the analyzed assortment (respectively, $\sum G_{fa}$, $\sum G_{sfa}$, $\sum T_{fa}$, $\sum T_{sfa}$, $\sum V_{fa}$, or $\sum G_{qa}$, $\sum G_{sqa}$, $\sum T_{qa}$, $\sum T_{sqa}$, $\sum V_{qa}$),

$$s_f g_i = \frac{G_{if}}{\sum G_{fa}} \text{ (21) or } s_f g_{si} = \frac{G_{sif}}{\sum G_{sfa}} \text{ (22); } s_f t_i = \frac{T_{if}}{\sum T_{fa}} \text{ (23) or } s_f t_{si} = \frac{T_{sif}}{\sum T_{sfa}} \text{ (24); } s_f v_i = \frac{V_{if}}{\sum V_{fa}} \text{ (25)}$$

or

$$s_q g_i = \frac{G_{iq}}{\sum G_{qa}} \text{ (26) or } s_q g_{si} = \frac{G_{siq}}{\sum G_{sqa}} \text{ (27); } s_q t_i = \frac{T_{iq}}{\sum T_{qa}} \text{ (28) or } s_q t_{si} = \frac{T_{siq}}{\sum T_{sqa}} \text{ (29); } s_q v_i = \frac{V_{iq}}{\sum V_{qa}} \text{ (30).}$$

In the analogue mode are calculated and the weighting coefficients of the respective structural components of the base assortment.

Analysis and assessment of the quality of the structure of consumer goods assortment are carried out by comparing the weighting coefficients volumes values or quantity (physical, numerical) of groups (subgroups), types (subtypes), varieties, etc., of goods from the assortment of goods analyzed with the respective coefficients of the weighting respective groups (subgroups), types (subtypes), varieties of goods within the assortment of basic and calculating the *coefficients of structural deviations* **(φ)**, in case of existence, as the difference between the coefficients of the weighting of the structural components of the assortment of goods analyzed (S_{wa}, S_{fa}, S_{qa}) and the weighting coefficients of the respectively structural components of the assortment of goods of the base (S_{wb}, S_{fb}, S_{qb}), expressed as a percentage ***(φ,%)*** by the latter (S_{wb}, S_{fb}, S_{qb}),

$$\varphi_w\% = (S_{wa} - S_{wb}) / S_{wb} \times 100 \text{ (31) or } \varphi_f,\% = (S_{fa} - S_{fb}) / S_{fb} \times 100 \text{ (32),}$$

$$\text{or } \varphi_q,\% = (S_{qa} - S_{qb}) / S_{qb} \times 100 \text{ (33),}$$

for example: the coefficient of the weighting of the goods J group value in the basic assortment constitutes 0.1 ($S_w g_{jb}$= 0,1), but in the assortment analyzed constitutes 0.11 ($S_w g_{ja}$= 0,11),

$$\varphi_{w g_j}\% = (S_w g_{ja} - S_w g_{jb}) / S_w g_{jb} \times 100 \ (34) = (0{,}11 - 0{,}1) / 0{,}1 \times 100 = 10\%.$$

The structure of the assortment of goods to be analyzed is considered *corresponding*, if the *coefficients of structural deviations* φ,% = 0, *satisfactory*, if φ, % = –5% ÷ +5%, *acceptable,* if φ,% = ± 5,01% ÷ ± 10% and *unsatisfactory*, if φ,% < –10% or φ,%>10%.

Analysis and assessment of the quality of the consumption goods assortment structure may be carried out on the basis of calculation of the *standard deviation* (deviation of the mean squared) **(σ,%)** of the differences between the coefficients of the weights of the structural components of the assortment analyzed (S_{wa}, S_{fa}, S_{qa}) and the coefficients of the weighting of the structural components of the assortments of the base (S_{wb}, S_{fb}, S_{qb}), expressed as a percentage (φ,%) by the latter (S_{wb}, S_{fb}, S_{qb}). For example, φ,% for the group of goods A is – 4% (φ,% = – 4%), for the group of goods J is 10% (φ,% = 10%), for the group of goods B is – 6 % (φ,% = – 6%) and by calculation get as the standard deviation (σ,%) is 8.72% (σ,% = 8.72%).

The structure of the assortment of goods analyzed is considered *corresponding*, if the *standard deviation* of coefficients of structural deviations σ,% = 0, *satisfactory*, if σ,% <5%, *acceptable*, if σ,% = 5–10% and *unsatisfactory*, if σ,% > 10%;

- **stability (c)** - expresses the permanence of the presence in the supply of goods of the commercial enterprise for a specified period, but not less than 20 calendar days, of the set of varieties of goods from the analyzed group or the assortment of goods examined. The degree (level) of stability is expressed by the *coefficient of stability* (c), which is calculated by reporting the sum of the numbers of varieties of goods, which were recorded as present in all controls carried out with periodicity (interval) 10 days, of the assortment of the respective group analyzed (*ΣVcga*) or of the assortment of goods examined (*ΣVca*), to the sum of the numbers of all varieties registered with all assortment controls of the respective group analyzed (*ΣVga*) or of the assortment of goods examined (*ΣVa*),

$$c_g = \frac{\Sigma V_{cga}}{\Sigma V_{ga}} \ (35) \quad \text{or} \quad c_a = \frac{\Sigma V_{ca}}{\Sigma V_a} \ (36).$$

It is established that controls will be performed with periodicity (intervals) 10-day, and the duration of a monitoring period will not exceed one quarter. Thus, in the case of the 20-day period, there will be carried out 3 checks, in the case of a one-month period, 4 checks will be carried out, in the case of the 2-month period – 7 checks, and in the case of one quarter – 10 checks. The annual coefficient of the assortment stability shall be calculated as the average of the quarterly coefficients.

Depending on the stability, commercial goods assortment is *stable*, when the *coefficient of stability* c=1.0, *sufficiently stable*, when c=0.7– 0.99 and *unstable*, when, c <0.7;

- **replacement** (substitution) **(z)** - denotes the possibility of replacing some varieties or types (subtypes) of goods with other varieties or types (subtypes) of goods to meet the needs of buyers (consumers). The degree (level) of the possibility of this reciprocal goods replacement is expressed by the *coefficient of replacement (substitution)* (z: for varieties -z_v; for types - z_t; for subtypes - z_{ts}), which is calculated by reporting the number of varieties (*V*) or types (*T*), or subtypes (T_s) of goods liable to be replaced from the analyzed assortment of goods (*Vza* or *Tza*, or T_s*za*) or the analyzed group of goods (*Vzga* or *Tzga*, or T_s*zga*), to the total number of varieties or respectively types (subtypes) of goods from the assortment analyzed (*Va* respectively *Ta* or T_s*a*) or basic (*Vb* respectively *Tb* or T_s*b*) or respectively from the assortment of goods analyzed or basic of the analyzed group of goods (*Vga* or *Vgb* respectively *Tga* or *Tgb*, or T_s*ga* or T_s*gb*), as follows:

- in the case of the analysis of the total assortment of goods,

$$z_{va} = \frac{V_{za}}{V_a} \text{ (37) or } \frac{V_{za}}{V_b} \text{ (38),}$$

$$\text{respectively } z_{ta} = \frac{T_{za}}{T_a} \text{ (39) or } \frac{T_{za}}{T_b} \text{ (40), } z_{tsa} = \frac{T_{sza}}{T_{sa}} \text{ (41) or } \frac{T_{sz\,a}}{T_{sb}} \text{ (42), and}$$

- in the case of the analysis of the group of goods,

$$z_{vg} = \frac{V_{zga}}{V_{ga}} \text{.(43) or } \frac{V_{zga}}{V_{gb}} \text{ (44),}$$

$$\text{respectively } z_{tg} = \frac{T_{zga}}{T_{ga}} \text{ (45) or } \frac{T_{zga}}{T_{gb}} \text{ (46), or } z_{tsg} = \frac{T_{szga}}{T_{sga}} \text{ (47) or } \frac{T_{szga}}{T_{sgb}} \text{ (48).}$$

Capacity of the reciprocal replacement (substitution) of varieties of goods in the analyzed commercial assortment of goods is *high*, if $z_v > 0.3$, *average*, if $z_v = 0.05–0.3$ and *low*, if $z_v<0.05$, and the degree of replacement of the types (subtypes) of goods in the commercial assortment is *high*, if z_t or $z_{ts} > 0.2$, *average*, if z_t or $z_{ts} = 0.05 – 0.2$ and *low*, if z_t or $z_{ts}< 0.05$;

- **renewal (î)** - number of varieties of goods (V_i), including new ones, included in the assortment of goods analyzed during the time of reporting (determined) period. The degree (level) of renewal of the assortment is expressed by the *coefficient of renewal* (î), which is calculated by reporting the number of varieties of goods (*Vî*), including new ones, included in the assortment analyzed (*Vîa*) during the period of time determined (30 days), to the number of varieties of goods in the assortment analyzed (*Va*), established at the end of the period by the report,

$$\hat{i} = \frac{V_{ia}}{V_a} . \qquad (49)$$

The commercial goods assortment is *essentially renewed,* when the *coefficient of renewal* $\hat{i} > 0.5$, *sufficiently renewed*, when $\hat{i} = 0.1– 0.5$ and *slightly renewed,* when $\hat{i} < 0.01$;

- **expanding (*dy*)** - increase the number of classes, including new ones, and in the case of division of the class into subclasses – increase the number of classes, including new ones, which

do not divide into subclasses, and subclasses, including new ones, from the other classes in the period of time determined by the report (360 days) within the commercial goods assortment analyzed. The degree (level) of expanding of the assortment is expressed by the *coefficient of expanding* (*dy*), which is calculated by reporting the difference between the number of classes (*Cda*), including new ones, which do not divide into subclasses, plus the number of subclasses, including new ones, from the other classes($C_s da$) (number of classes and subclasses*) of goods included ($Cda + C_s da$) in and minus the number of those excluded ($Cxa + C_s xa$) from the assortment analyzed in the period of time determined by the report (360 days), to the number of classes from the analyzed assortment (*Ca*), which does not divide into subclasses, plus the number of subclasses in the other classes ($C_s a$) (number of classes and subclasses*) of goods in the analyzed assortment ($Ca + C_s a$) at the beginning of the reporting period,

$$dy = \frac{(C_{da}+C_{sda})-(C_{xa}+C_{sxa})}{C_a+C_{sa}}. \qquad (50)$$

Depending on the expanding, the commercial goods assortment has been *substantially expanded,* when *dy* >0.15, has *sufficiently expanded,* when *dy* = 0.05–0.15, *slightly expanded,* when *dy* <0.05 →0 and *restricted,* if *dy* <0;

- **widening (*de*)** - increasing the number of groups, including new ones, and in case of division of the group into subgroups - increasing the number of groups, including new ones, which do not divide into subgroups, and subgroups, including new ones, from the other groups of goods, during the time period determined by the report (180 days) within the commercial goods assortment analyzed. The degree (level) of widening the assortment is expressed by the *coefficient of widening* (*de*), which is calculated by reporting the difference between the number of groups (*Gda*), including new ones, which do not divide into subgroups, plus the number of subgroups, including new, from the other groups (*Gsda*) (number of groups and subgroups**) of goods included ($Gda + G_s da$) in and minus the number of those excluded ($Gxa + G_s xa$) from the assortment analyzed in the period of time determined by the report (180 days), to the number of groups from the analyzed assortment (*Ga*), which does not divide into subgroups, plus the number of subgroups in the other groups ($G_s a$) (number of groups and subgroups**) of goods in the analyzed assortment ($Ga + G_s a$) at the beginning of the reporting period,

$$de = \frac{(G_{da}+G_{sda})-(G_{xa}+G_{sxa})}{G_a + G_{sa}}. \qquad (51)$$

The commercial goods assortment has been *essentially widened,* when the *coefficient of widening de >0.25, sufficiently widened,* when *de* = 0.1– 0.25, *slightly widened,* when *de* <0.1→0 and *shrunk,* if *de* <0;

- **stretching (*dr*)** - increasing the number of subgroups, including new ones, within the group of goods analyzed in the commercial goods assortment analyzed in the period of time determined by the report (180 days). The degree (level) of stretching of the commercial assortment of goods group is expressed by the *coefficient of stretching* (*dr*), which is calculated by reporting

the difference between the number of subgroups, including new ones, included ($G_s da$) in and minus the number of those excluded ($G_s xa$) from the assortment of goods of group analyzed in the period of time determined by the report (180 days), to the number of subgroups of goods of group data in the analyzed assortment ($G_s a$), established at the beginning of the reporting period,

$$dr = \frac{G_{sda} - G_{sxa}}{G_{sa}}. \qquad (52)$$

Depending on the stretching, the commercial assortment of the group of goods has been *essentially stretched,* if the *coefficient of stretching dr* >0.25, *sufficiently stretched*, if *dr* = 0.1–0.25, *slightly stretched*, if *dr* < 0.1→0 and has been *cut off*, if *dr* <0;

- **elongation (*dl*)** - increasing the number of types, including new ones, and in case of division of type into subtypes - increasing the number of types, including new ones, which do not divide into subtypes, and subtypes, including new ones, from the other types of goods within the assortment of the group (subgroup) of goods analyzed over the period determined (by the report) (90 days). The degree (level) of elongation of the group (subgroup) of goods analyzed is expressed by the *coefficient of elongation* (*dl*), which is calculated by reporting the difference between the number of types (*Tdga* or $Tdg_s a$), including new ones, which do not divide into subtypes, plus the number of subtypes, including new ones, from the other types ($T_s dga$ or $T_s dg_s a$) (number of types and subtypes***) of the analyzed group (subgroup) of goods from the commercial assortment analyzed, included ($Tdga + T_s dga$ or $Tdg_s a + T_s dg_s a$) in and minus the number of those excluded ($Txga + T_s xga$ or $Txg_s a + T_s xg_s a$) from the assortment of group (subgroup) of goods analyzed in the period of time by the report (determined) (90 days), to the number of types from the assortment of group (subgroup) analyzed, which is not divided into subtypes (*Tga or* $Tg_s a$), plus the number of subtypes of the other types ($T_s ga$ *or* $T_s g_s a$) (number of types and subtypes ***) of the respectively group (subgroup) of goods in the analyzed assortment ($Tga + T_s ga$ or $Tg_s a + T_s g_s a$) at the beginning of the reporting period,

$$dl = \frac{(T_{dga} + T_{sdga}) - (T_{xga} + T_{sxga})}{T_{ga} + T_{sga}} \quad (53) \quad \text{(in the case of the group of goods) or}$$

$$dl = \frac{(T_{dgsa} + T_{sdgsa}) - (T_{xgsa} + T_{sxgsa})}{T_{gsa} + T_{sgsa}} \quad (54) \quad \text{(in the case of the subgroup of goods).}$$

The commercial goods assortment has been *essentially elongated,* if the *coefficient of elongation dl* > 0.3, is *sufficiently elongated*, if *dl* = 0.1–0.3, *slightly elongated*, when *dl* < 0.1→0 and *shortened*, if *dl* < 0;

- **thickening (*du*)** - increasing the number of subtypes (T_s), including new ones, of the type of goods from the commercial assortment of goods in the time of report period (determined) (90 days). The degree (level) of thickening of the commercial assortment of the type of goods is expressed by the *coefficient of thickening* (*du*), which is calculated by reporting the difference

between the number of subtypes, including new ones, included (T_sda) in and minus the number of those excluded (T_sxa) from the assortment of the type goods analyzed in the period of time determined by the report (90 days), to the number of subtypes of goods of type data in the analyzed assortment (T_sa), established at the beginning of the reporting period,

$$du = \frac{T_{sda} - T_{sxa}}{T_{sa}}. \qquad (55)$$

Depending on the thickness, the commercial assortment of the type of goods has been *substantially thickened,* if the *coefficient of thickening du* > 0.3, is *sufficiently thickened,* if *du* = 0.1–0.3, *slightly thickened,* when *du* < 0.1→0 and *thinned*, if *du* < 0;

- **expansion (*dm*)** - increasing the total number (sum) of types (*T*), including new ones, and in the case of division of types in subtypes - increasing the total number (sum) of types, including new ones, which do not divide into subtypes, and subtypes (T_s), including new ones, from the other types of goods from all subgroups of group of goods, which are part of the analyzed group of goods, during the reporting period (determined) (60 days).The degree (level) of the widening of the assortment group of goods examined is expressed by the *coefficient of expansion* (*dm*), which is calculated by reporting the difference between the total (sum) number of types, including new ones, which do not divide into subtypes (ΣTdg_sa), plus the total (sum) number of subtypes, including new ones, from the other types ($\Sigma T_s dg_s a$) (number of types and subtypes***) of all subgroups of the goods group analyzed included ($\sum Tdg_sa + \sum T_s dg_s a$) in and minus the number of those excluded ($\Sigma Txg_s a + \Sigma T_s xg_s a$) from the assortment of group or subgroups of goods group analyzed in the period of time by the report (determined) (60 days), to the total (sum) number of types, which do not divide into subtypes ($\Sigma Tg_s a$), plus the total (sum) number of subtypes of the other types ($\sum T_s g_s a$) (number of types and subtypes ***) of goods in the assortment of all analyzed subgroups of the group of goods ($\Sigma Tg_s a + \Sigma T_s g_s a$) at the beginning of the reporting period,

$$dm = \frac{(\sum T_{dgsa} + \sum T_{sdgsa}) - (\sum T_{xgsa} + \sum T_{sxgsa})}{\sum T_{gsa} + \sum T_{sgsa}}. \qquad (56)$$

The commercial goods assortment has been *essentially expanded,* when the *coefficient of expansion dm* > 0.3, *sufficiently expanded,* when *dm* = 0.1–0.3, *slightly expanded,* when *dm* < 0.1→0 and *narrowed,* if *dm* < 0;

- **deepening (*dh*)** - increasing the number of varieties (V), including new ones, of goods within the assortment of the type (subtype) of goods analyzed from the commercial goods assortment during the time of the report (determined) (30 days). The degree (level) of deepening the type (subtype) of goods analyzed is expressed by the *coefficient of deepening* (*dh*), which is calculated by reporting the difference between the number of varieties, including new ones, of goods included (*Vdta or* $Vdt_s a$) in and minus the number of those excluded (*Vxta or* $Vxt_s a$) from the assortment of type (subtype) of goods analyzed in the period of time determined by the report (30 days), to the number of varieties of goods within of the type (subtype) of goods from commercial assortment analyzed (Vta or $Vt_s a$), found at the beginning of the reporting period,

$dh = \frac{V_{dta} - V_{xta}}{V_{ta}}$ (57) (for the type) $dh = \frac{V_{dtsa} - V_{xtsa}}{V_{tsa}}$ (58) (for the subtype) of goods.

The commercial assortment of the type (subtype) of goods has been es*sentially deepened*, if the *coefficient of deepening dh* > 0.4, *sufficiently deepened*, if *dh* = 0.1–0.4, *slightly deepened*, when *dh*< 0,1→0 and *cut in depth*, if *dh*<0;

- filling (*dp*) - increasing the total (sum) number of varieties (V), including new ones, of all types, subtypes and subgroups of goods, which are part of the commercial assortment of the analyzed group of goods, during the reporting (determined) period (30 days).The degree (level) of the filling is expressed by the *coefficient of filling* (*dp*), which is calculated by reporting the difference between the number of varieties, including new ones, of goods included (*Vdga* or $\Sigma Vdg_s a$) in and minus the number of those excluded (*Vxga* or $\Sigma Vxg_s a$) from the commercial assortment of group (subgroups of group) of goods analyzed during the period of time determined by the report (30 days), to the total (sum) number of varieties of goods in the assortment of group (*Vga*) or of all subgroups of the group (ΣVgsa) of goods analyzed in the commercial assortment of goods examined, found at the beginning of the reporting period,

$$dp = \frac{V_{dga} - V_{xga}}{V_{ga}} \text{ (59)} \qquad or \qquad dp = \frac{\sum V_{dgsa} - \sum V_{xgsa}}{\sum V_{gsa}} \text{ (60).}$$

The commercial goods assortment has been *essentially filled (enriched),* if the *coefficient of filling dp* > 0.3, is *sufficiently filled,* if *dp*= 0.1–0.3, *slightly filled when dp* < 0.1→0 and is *emptied (impoverished*), if *dp* < 0.

In the continuation of those presented, the extended complex of properties (characteristics) and indicators (indices) of the commercial assortment of consumer goods can be perfected and supplemented with new characteristics and indices and derivatives thereof, for example: with the averages quarterly (annual) of the coefficients of span, stretch, length, thickness, breadth, depth, fullness, widening, elongation, expansion, deepening etc. and other averages of indices of commercial goods assortment properties.

4. Conclusions

Commercial assortment of goods underlying meet the needs of consumers and buyers demand, predetermines to a great extent the efficiency of the commercial activity of the trade enterprise. Qualitative and timely formation and improvement of the goods assortment are primary objectives of the commercial activity of the retail trade enterprise. Both the constitution as well as the systematic improvement of the commercial goods assortment presuppose its multilateral and objective analysis, which requires the highlighting and research of the properties of the commercial assortment of goods, the elaboration of the indices of its characteristics, which could be estimated quantitatively, but the nomenclature of these characteristics (properties) is at the stage of elaboration.

On the basis of the studied specialized literature and the investigations carried out, the use of the levels of the hierarchical classification of goods an extended complex of properties (characteristics) of commercial goods assortment are highlighted, nominated, distinctly symbolized and defined (in specified edition or for the first time) and the qualitative and quantitative indices (indicators) of the nominated properties, as well as the modes of calculating the quantitative indicators of the properties (characteristics) of commercial goods assortment are developed and symbolized distinct.

The extended complex of property (features) of the commercial goods assortment proposed in this paper includes the following 23 properties (characteristics): coverage (y), span (width, latitude) (e), stretch (r), length (longitude) (l), thickness (u), breadth (m), profoundness (depth) (h), plenitude (fullness) (p), complexity (k), novelty (n), optimality (o), structure (s), stability (c), replacement (substitution) (z), renewal (î), expanding (*dy*), widening (*de*), stretching (*dr*), elongation (*dl*), thickening (*du*), expansion (*dm*), deepening (*dh*), filling (*dp*).

The presentation of each of the listed properties includes: the nomination and the distinct symbol, the definition (in the specified edition or for the first time), as well as the quantitative index of the respective property: the nomination and distinct symbol, the mode and formula of the calculation, the estimation of the index values.

The promotion and use in the commercial practice of the proposed complex of properties and indicators of the commercial goods assortment will contribute to the understanding of the notions and their unambiguous perception and uniform symbolization, to the multilateral analysis, objective estimation and development of the extensive feature the commercial goods assortment in different cases, to the development of assortment policies, requirements and the establishment of limits on the properties (indices) of the commercial goods assortment, including the optimal assortment, as well as performing efficient management of the commercial goods assortment.

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Rezumat

Analiza și estimarea sistematică, perfecționarea oportună a sortimentului comercial de mărfuri sunt importante componente ale activității comerciale, direcționate spre formarea și menținerea sortimentului optimal de mărfuri în oferta întreprinderii de comerț en-detail. Optimalitatea sortimentului comercial de mărfuri este o proprietate complexă, care îmbină mai multe proprietăți ale sortimentului comercial de mărfuri, nomenclatorul cărora este încă în curs de elaborare. Este important ca proprietățile sortimentului de mărfuri să fie distinct nominalizate, definite și uniform utilizate în practica comercială.

În această lucrare sunt evidențiate, nominalizate, simbolizate distinct și definite (în redacție precizată sau în premieră) un complex extins de proprietăți (caracteristici) ale sortimentului comercial de mărfuri și sunt elaborați, simbolizați distinct și prezentați indicii calitativi și cantitativi ai proprietăților nominalizate, precum și modurile și formulele de calcul și estimare a valorii indicilor cantitativi ai proprietăților (caracteristicilor) sortimentului comercial de mărfuri. Complexul include următoarele 23 de proprietăți (caracteristici): cuprinderea (y), anvergura (lărgimea, latitudinea) (e), întinsoarea (r), lungimea (l), grosimea (u), lățimea (m), profunzimea (adâncimea) (h), plenitudinea (plinătatea) (p), complexitatea (k), noutatea (n), optimalitatea (o), structura (s), stabilitatea (c), înlocuirea (înlocuitatea) (z), înnoirea (î), extinderea (dy), lărgirea (de), întinderea (dr), alungirea (dl), îngroșarea (du), lățirea (dm), adâncirea (dh), umplerea (dp).

Complexul propus va contribui la înțelegerea și perceperea univocă și simbolizarea uniformă a proprietăților și indicilor sortimentului comercial de mărfuri.

***Cuvinte-cheie**: sortimentul comercial de mărfuri; proprietățile sortimentului comercial de mărfuri: cuprinderea, anvergura (lărgimea, latitudinea), întinsoarea, lungimea, grosimea, lățimea, profunzimea (adâncimea), plenitudinea (plinătatea), complexitatea, noutatea, optimalitatea, structura, stabilitatea, înlocuirea (înlocuitatea), înnoirea, extinderea, lărgirea, întinderea, alungirea, îngroșarea, lățirea, adâncirea, umplerea; indicii cantitativi ai proprietăților sortimentului de mărfuri*

Аннотация

Систематический анализ и оценка, своевременное совершенствование торгового ассортимента товаров являются важными составляющими коммерческой деятельности, направленные на формирование и поддержание оптимального ассортимента товаров в предложении розничного торгового предприятия. Оптимальность торгового ассортимента товаров является комплексным свойством, которое сочетает несколько свойств торгового ассортимента товаров, перечень которых находятся все еще в стадии разработки. Важно, чтобы свойства ассортимента товаров были обособленно названы (наименованы), определены и однозначно использованы в коммерческой практике.

В этой работе выделены, обособленно названы, отличительно символизированы и даны определения (в уточнённой редакции или в премьере) расширенному перечню (комплексу) свойств (характеристик) торгового ассортимента товаров и разработаны, отличительно символизированы и представлены

качественные и количественные показатели названных свойств, а также и способы и формулы вычисления и оценки значений количественных показателей свойств (характеристик) торгового ассортимента товаров. Перечень включает следующие 23 свойства (характеристики): охват (y), широта (размах) (e), растянутость (r), длина (l), толщина (u), ширина (m), глубина (h), полнота (p), комплексность (k), новизна (n), оптимальность (o), структура (s), устойчивость (стабильность) (c), заменяемость (взаимозаменяемость) (z), обновление (î), охватывание (dy), размахивание (обширение) (de), растяжение (dr), удлинение (dl), утолщение (du), расширение (dm), углубление (dh), пополнение (dp).

Предложенный комплекс будет способствовать пониманию, однозначному восприятию и одинаковой символизации свойств и показателей торгового ассортимента товаров.

Ключевые слова: *торговый (коммерческий) ассортимент товаров; свойства торгового ассортимента товаров, охват, широта (размах), растянутость, длина, толщина, ширина, глубина, полнота, комплексность, новизна, оптимальность, структура, устойчивость (стабильность), заменяемость (взаимозаменяемость), обновление, охватывание, размахивание (обширение), растяжение, удлинение, утолщение, расширение, углубление, пополнение; количественные показатели свойств ассортимента товаров*

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