

A new approach to determining the development directions for crop insurance organizations: experience from Lithuania

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Abstract: The appropriate organization of the crop insurance process is an essential task for all participants in the insurance system, and the system development is one of the main arguments for its existence. The main problem is that crop insurance companies do not have any instrument for determining the most suitable direction for development as an obligatory strategic solution. This article aims to provide the methodology suitable for insurance companies as participants in the crop insurance system to determine the most appropriate direction for development under the present conditions. In this article, we provide the substantiated multicriteria methodology for determining the most suitable direction for developing the activity performed by insurance companies. Insurance companies' possible business development directions are justified, and appropriate evaluation criteria are specified. The suggested methodology is based on applying the multicriteria assessment method, TOPSIS. This original method proved to be the most suitable one for management solutions. This quantitative methodology was tested under natural conditions, using the example of Lithuania, and the suitability of its application was proved entirely. The suggested methodology can also help crop insurance companies find the best direction for future development.

Keywords: Crop insurance, Directions for development, Multi-criteria assessment, Topsis method.

1. Introduction

In the scientific literature, much attention is paid to the importance of insurance organizations in the crop insurance system. It is indicated in individual documents and studies that crop insurance organizations are liable for the success of the total system. However, when discussing the essence of insurance and the possibilities of development, insurance's economic and social importance is revealed for the direct user and the entire country. [1] The classics of economics and management state that a business's primary goal is profit, but later research revealed that the solution to social problems has a mutual advantage. In this respect, insurance service users' quality of life is improving, and insurance service providers' financial results are improving. Thus, the Importance of insurance can be defined in two aspects: in the social aspect, insurance is crucial as a means of developing the welfare of the country's residents and reducing material differences. This means ensuring the compensation of losses, the welfare of the society and a person, and its preservation. In the economic aspect, insurance is crucial for financial stability, helps protect capital and income, and can be adapted to invest and save.

Conversely, crop insurance is necessary for companies that strive for profit and realize a need for survival or victory in a competitive fight. [2] This aspect can be problematic when analyzing the scientific literature. It is obvious that the directions for developing crop insurance companies' activity must be indicated and substantiated. The main problem with crop insurance organizations' activity is that they need a methodology for determining the appropriate direction for development. The aim of the article is to propose a substantiated methodology based on objective quantitative solutions.

Thus, insurance company development is spontaneous enough and needs systematic substantiation. In the article, we will solve this problem and provide a substantiated methodology for determining the

direction of business development for crop insurance companies, which can be used by every company involved in this activity.

During the analysis of scientific literature, the main development directions were revealed so that insurance organizations could develop them and expand the total crop insurance system. The search for scientific literature related to the development of insurance companies' activity, the development of crop insurance companies, conditions, and possibilities of company development was chosen for the analysis.

2. Materials and Methods

Determining the directions for development is one of the article's main tasks. In this case, scientific substantiation of the determined directions is necessary as an object of research and assessment to find the most appropriate. Table 1 provides the directions for activity development for insurance organizations. Marketing insurance can be defined in two aspects: first, it is a means of competition; second, it is a means of adaptation of services to users. Thus, insurance marketing can be interpreted as a means of competition taking into account everyone's needs [3]; it is a whole of acts performed by the insurer helping to reveal the analysis of needs of a potential customer-insurer, "conquer", retain him or her and satisfy his/her specific needs. Based on these aspects, the tasks of insurance marketing are the following ones: to react to the interests of the insurer and the insured mutually; to intensify the activity of the insurance service sales and advertising; to expand the demand for insurance products; to perform a comprehensive analysis of the insurance market; to increase the insurer's profit; to ensure the image of insurance organizations. [4] Thus, implementing *modern marketing* is one of the directions for developing the activity of the insurance organization, whose application could bring better results in commercial activity to the company.

The insurance sector is inseparable from sales. It is indicated in the scientific literature that insurance services belong to the bag of unsearched services in the attitude of users. For this reason, insurance organizations must develop the processes of sales business and insurance product sales [5,6]. However, attention should be paid that the sale process paradigm is changing, and it is indicated that the insurance sale process is non-linear [7]; the duties of service vendors are also changing and developing and are coordinated with the liabilities of other roles [8], most organization members inside and other interested groups outside are included in the sale business process [5,6], the coordination of the sale business process with other business processes of the organization (damage regulation marketing) and their inseparability are accentuated [2], the searches for new possibilities in new markets are emphasized. Because of the complicity of the insurance sales business process in the organization and a wish to understand the activities and possible directions of the development in a better way, it is necessary to analyze processes separately and look both at the level of the organization and the vendor as well as the user. The *development of the encouragement of sales organizations, sales networks, and channels can also be considered a direction for developing the activity performed by the insurance organization.*

One essential activity in the insurance sector is loss regulation [2,5,6,9-14]. After summarising many conclusions from scientific research, we determined these directions for development (Table 1).

It is accentuated that although two sales business processes, insurance product, and loss administration in case of an insured event, are extinguished, they must be connected. Most scientists relate the damage regulation process with the closure of the sale business because both processes are connected to a complete insurance service. It is indicated that when insurance sale services are provided to the customer, it is necessary to present the damage assessment and remuneration processes and discuss and present the acts that the customer must first carry out.^[2] *Improving the loss assessment system* is obligatory to ascertain the course of this process better for both service users and insurance institutions and to implement the closure of the insurance process by the insurance agents more simply.

The service of contracts and procedures belongs to the processes related to insurers directly because proper implementation of this activity creates added value through the satisfaction of customers and employees and quick service [9,11,12]. In this case, it is necessary to consider and develop the digitalization processes and remember that contracts and valid legal acts must comply with the present situation in the market. The use of technologies and digitalization of the total process are among the

most critical topics in the insurance business and development possibilities in this period ^[15,16], which help improve the service of contracts and procedures. It is indicated that insurance organizations must initiate changes and install technologies in the insurance activity, which foresee the automation and optimization of processes of the interaction with customers, use of the internet as a new prospective sale channel, use of technologies for the sale of modern mass insurance product and automation of insurance accounting processes. The service of contracts and procedures belongs to the processes related directly to insurers because suitable implementation of this activity creates added value through the satisfaction of customers and employees and quick service. ^[17] World investments in the insurance sector are proliferating. Hence, the digitalization processes greatly influence the insurance value chain and impact the accessibility of insurance services, price building, and damage assessment processes ^[18,19]. It is accentuated that most insurance business processes can be transformed into digital ones ^[9]. Integrating these processes would increase the technological development-related costs for insurance organizations in the short term. Still, it would help decrease the costs significantly in the long term. Thus, improving the service of contracts and procedures should also be considered a direction for developing the activity performed by insurance institutions, which can cause better commercial results.

Business communication can be defined as a process in which both the leaders of organizations and employees share information with others and outside the organization. Communication and cooperation with the employees and customers inside the company are essential in the insurance sector. It is indicated as a direction of business development because it involves communication of a few levels among the organization's employees and communication with customers.^[20] Communication with customers and employees through their experiences, claims, or requests helps to find the fields of process improvement. It ensures that the customers and employees know how to solve critical issues. Unless communication with employees and customers is effective, it reduces the trust and loyalty to the services offered by the insurance organization.^[21] For these reasons, Kalogiannidis ^[22] states that most organizations cannot reach their goals.

To summarize the scientists' insights, the five main processes of the activity performed by the insurance organization are extinguished (table 1). Different employees, subunits, and departments of insurance organizations are liable for individual activity processes. To sum up the scientists' insights and after performing the systematic analysis of scientific literature, the directions of the development of the activity performed by insurance organizations and its contents are presented in Table 1. The contents of the direction of the development are presented with scientific substantiation. It was revealed that the most important directions of the activity were related to marketing and its improvement in the activity performed by insurance organizations, organization of sales, expansion of new possibilities of the development, assessment of losses, and improvement of this process, service, and improvement of contracts and procedures and management of the business process by organizing the development through the inclusion of employees. The present market-working organizations can check if all the directions of the activity development can be implemented and which must be supplemented or reduced with little significant activities. The insurance company can decide on its discretion in the areas of development to be evaluated.

Table 1.
Directions for the development of the insurance organizations activity.

Directions for the development	Contents	Authors who reasoned the possible directions
	Improvement of the market analysis: performance of studies, segmentation, and positioning according to their results	[2,3,13,23,24,25,26]
	Improvement of the determination of directions of the activity in the market	[1,2,3,13,27]
Implementation of modern marketing	Increase the development and adaptation of new insurance products (services)	[13,25,26,27,28]
	Improvement of the formation and management of the insurance products sales system	[20,21,22,24,25,26]
	Improvement of the implementation of means for the encouragement of insurance products	[12,13,25,26,28]
	Increase the awareness of the insurance organization	[2,3,4,23,28]
	Improvement of the sales organization process	[5,6,12,20,22,26]
Encouragement of sales organization, development of sales networks and channels	Improvement of the insurance product sale process	[5,12,20,22,25,26]
	Search for new markets.	[5,12,22,26,27,29,30]
	Improvement of the creation and support of relations with customers	[20,21,22,23,26,29]
	Increase the support of relations with partners	[21,22,23,26,29]
Improvement of the loss assessment system	Improvement of the organization of the loss assessment process	[2,5,12,13,14]
	Improvement of the loss assessment methodology	[9,10,11,12,14,25]
	Increase the development of new technologies and use of means	[2,12,14,25,28,31]
	Improvement of the presentation of the loss assessment process to society	[2,5,6,14]
	Improvement of the compliance of contracts and valid rules	[9,11,12,16,17]
Improvement of the service of contracts and procedures	Increase of the implementation of digitalization processes	[9,15,16,25,30,32]
	Acceleration of the technological service	[17,18,19,25]
Organization and improvement of the business management by organizing the development through the cooperation with employees	Improvement of the search for employees	[25,34]
	Increase of the employees' motivation	[21,22,33]
	Improvement of the organization of the employees' competence training	[11,25,34]
	Improvement of the employees' career planning	[11,25,34]

The next step is to set the criteria once we have the objects to be evaluated. This ranking corresponds to the classical methodology of multicriteria evaluation. According to scientific literature, the Topsis method is the best for responsible solutions [33–36]. Determining assessment criteria is always one of the most responsible actions in the whole assessment process. We found that 12 criteria can best express the assessment of directions for development. We also looked for a scientific justification for selecting criteria, and the results are presented in Table 2.

Table 2.

Criteria and indexes of the assessment of the most suitable direction of the development under the present conditions.

	Criteria	Assessment indexes	Authors confirming the suitability of the assessment criteria
Impact on cultivators	Possibility to adapt to climate change	The possibility is measured with qualitative indexes (in points determined in the expert assessment).	[35]
	Better economic state	A suitable economic state grants more freedom of choice and can be a possibility of development (in points determined in the expert assessment).	[36]
	Resistance in the agricultural sector	Ability to prepare for unexpected climate changes and stay competitive (in points which are determined in the expert assessment).	[37]
	Freedom to make decisions about further acts	Further actions can be taken by considering the available financial resources (in points determined in the expert assessment).	[2,38]
Impact on insurance agents	Increase in the number of customers and employees, level of satisfaction of their needs	The number of users will directly influence the insurance organization's activity and enable it to satisfy its customers better (in points determined in the expert assessment).	[1,13,39]
Impact on insurance organizations	Financial results and a better image of the organization in the sector	This criterion can be expressed with financial indexes, but the company's image can be influenced by earned money (in points determined in the expert assessment).	[2,40]
	Harmonious financial results and better indemnification	It means more effective use of the labor force, energetic resources, and raw materials (in points determined in the expert assessment).	[12,41]
	Growth of the number of qualified specialists	It means a need for qualified specialists. A more significant demand is related to higher insurance organization costs (in points determined in the expert assessment).	[28,42]
	Improvement of the country's image in the internal and	Better results from developing the insurance system will reduce the need for extra benefits to cultivators,	[43]

Impact on state institutions	external markets	increase their satisfaction, and improve the country's image as the cultivators' problems will be adequately solved (in points determined in the expert assessment).	
	Lower impact of the financial risk and economic growth through fiscal contributions	If state institutions are presumed to have losses, a lower risk would be a better result. This index must show the potential for economic growth (in points determined in the expert assessment).	[21,44]
	Assurance of the stability of food prices and accessibility of safe products	This criterion expresses the influence of the solution on possible price changes of agricultural products (in points determined in the expert assessment).	[23,45]
	Assured possibilities of business development and new investments	This criterion refers to the possible taxes collected in the state budget (in points determined in the expert assessment).	[21,46]

Drejeris [47] called the Topsis method the most suitable method for determining the direction of the institution's development. Determining how to develop is one of the most significant solutions in the insurance companies' activity. This method was indicated as easily adaptable for assessing social phenomena and the most suitable one for strategic management solutions.

When applying the Topsis method, the solution matrix is first made of n alternatives described with m indexes. [47,48]. The solution matrix is formed according to the formula (1) in this way:

$$F = \begin{bmatrix} f_{11} & f_{12} & \cdots & f_{1m} \\ f_{21} & f_{22} & \cdots & f_{2m} \\ \dots & \dots & \dots & \dots \\ f_{n1} & f_{n2} & \cdots & f_{nm} \end{bmatrix} \quad (1)$$

Then, determining the criteria is a usual and classical next step of multicriteria assessment [47,48]. Therefore, to make the assessment clearer, a 100-point scale is proposed for the experts to distribute all criteria, and cumulative estimates are calculated as follows [48]:

$$W_i = \sum_{k=1}^n W_{ik}, \quad (2)$$

where W_{ik} is an estimate of the i th criterion by the k th expert; n is the number of experts; and W_i is the sum of i criterion estimates by every k th expert.

The significance of the criteria q_i is determined according to the classical formula of multicriteria assessment [47,48]:

$$q_i = \frac{W_i}{\sum_{i=1}^m W_i}, \quad (3)$$

where m is the number of criteria.

The sum of the significances of the criteria will always be equal to one [47,48]:

$$\sum_{i=1}^m q_i = 1 \quad (4)$$

The following formula should be applied for the ranking of valued objects ^[48]:

$$g_{ij} = K_{ij} q_i \quad (5)$$

The vector normalization is applied for the normalization of dimensional indexes from dimensional indexes to non-dimensional ones:

$$r_{ij} = \frac{f_{ij}}{\sqrt{\sum_{i=1}^m f_{ij}^2}} \quad (6)$$

where r_{ij} – the normalized value of the i th index of the j th object, f_{ij} – value of the j th index of the i th alternative.

In the next stage, the weight normalized value of the indexes of solution elements is calculated. It is performed by multiplying each normalized element of the matrix by the significance of the previously calculated index (according to formula 7):

$$v_{ij} = q_i * r_{ij}, i = 1, \dots, m, \quad (7)$$

here q_i – the relative importance of criteria; r_{ij} – the normalized value of the i th index of the j th object,

Compilation of the total weight matrix from individual indexes of normalized solution elements using the weights of indexes $v_j, j = 1, \dots, n$.

$$V = \begin{bmatrix} v_{11} & v_{12} & \dots & v_{1m} \\ v_{21} & v_{22} & \dots & v_{2m} \\ \dots & \dots & \dots & \dots \\ v_{n1} & v_{n2} & \dots & v_{nm} \end{bmatrix} \quad (8)$$

In the next stage, the variants are determined, which are classified as ideal (A^+) and negative ideal (A^-) variants. The best solution (construct of the development), A^+ , and the worst solution, A^- , are calculated according to the provided formulas ^[48,49]:

$$A^+ = \{(\max_{i=1}^{v_{ij}} | j \in J), (\min_{i=1}^{v_{ij}} | j \in J'), i = 1, 2, 3, \dots, n\} = \{v_1^-, v_2^-, \dots, v_m^-\}; \quad (9)$$

here $J = \{j = 1, 2, 3, \dots, m\}$ – set of values of maximized indexes;

here $J' = \{j = 1, 2, 3, \dots, m\}$ – set of values of minimized indexes.

$$A^- = \{(\min_{i=1}^{v_{ij}} | j \in J), (\max_{i=1}^{v_{ij}} | j \in J'), i = 1, 2, 3, \dots, n\} = \{v_1^-, v_2^-, \dots, v_m^-\}; \quad (10)$$

In the next stage, the distance of each category of development directions to the ideal variant is calculated. This distance is calculated in the n -matic Euclid space. The total distance of each variant of comparison S_i^+ to the best (most suitable) solutions is calculated according to the formula:

$$S_i^+ = \sqrt{\sum_{j=1}^m (v_{ij} - v_j^+)^2}, i = 1, 2, 3, \dots, n. \quad (11)$$

In the next stage, the distance of each category of development directions to the negative ideal variant is calculated. The total distance of each variant of comparison to the worst (least significant) solutions is calculated according to the formula (12):

$$S_i^- = \sqrt{\sum_{j=1}^m (v_{ij} - v_j^-)^2}, i = 1, 2, 3, \dots, n. \quad (12)$$

In the last stage, the distance of each category of development directions to the ideal variant is determined. The criterion of the TOPSIS method C_j^* is calculated according to the formula (13):

$$C_i^+ = \frac{S_i^-}{S_i^+ + S_i^-}, i = 1, 2, 3, \dots, n, \quad (13)$$

The value of criterion C_j^* must range from 0 to 1 ($0 \leq C_j^* \leq 1$). The best variant complies with the most significant value of criterion C_j^* .

Based on the obtained results (C_j^+ values), the stages of constructs of the development of elements of state institutions and insurance organizations are formed (Q_1, Q_2, \dots, Q_{1n}). The aim and the most critical stage of the development process have the most significant value of C_j^+ . This method is applied if many indexes are challenging to interconnect. Systemizing these indexes with the TOPSIS method and setting the priority sequence is possible^[48]

3. Results

The above-mentioned possible directions for the development of the activity for crop insurance organizations are defined as follows:

- Increase the development and adaptation of new insurance products (services)
- Increase the notoriety of the insurance organization
- Improvement of the creation and support of relations with customers
- Improvement of the formation and management of the insurance products sales system
- Improvement of the insurance product sale process
- Improvement of the market analysis: performance of studies, segmentation, and positioning according to their results
- Improvement of the productivity of the employees' activity
- Improvement of the determination of directions of the activity in the market
- Improvement of the implementation of means for the encouragement of insurance products
- Improvement of the organization of the loss assessment process
- Increase of the implementation of digitalization processes
- Improvement of the compliance of contracts and valid rules
- Increase of the employees' motivation
- Improvement of the organization of the employees' competence training
- Acceleration of the technological service
- Increase of the development of new technologies and use of means
- Increase of the search for new markets
- Strengthening of the support of relations with partners
- Improvement of the loss assessment methodology
- Improvement of the employees' career planning.

Then, it is necessary to calculate the significance of the provided criteria based on the requirements for applying the Topsis method. It is also purposeful to apply the expert method to determine the significance of criteria. We used the suggested methodology in the crop insurance company Compensa Huge Life. Even eight experts were invited to take part in the experts' assessment session:

- E1- commercial director of the Compensa Huge Life insurance company;
- E2- director of the VH Lietuva VEREINIGTE HAGEL;
- E2, E3, E4 - sales managers of insurance services in the Compensa Huge Life insurance company,
- E5 – farmer of the Kaunas district,
- E6, E7 -independent insurance brokers;
- E8 - representative of the insurance activity supervisory authority.

The following formulas were applied for the calculation of the significance of criteria: (1), (2), (3), (4). The results are provided in table (3).

Table 3.
Determination of the significance of the criteria.

Experts Criteria	E1	E2	E3	E4	E5	E6	E7	E8	Total	Significance
Possibility to adapt to the climate change	12	9	10	12	12	12	11	10	88	0,14
Resistance in the agricultural sector	8	8	8	9	10	10	8	11	72	0,12
Better economic state	5	6	6	7	6	4	7	9	50	0,08
Freedom to make decisions about further acts (possibilities of choice)	11	7	7	6	9	6	4	4	54	0,09
Number of customers and employees, increase of the level of satisfaction of their needs	10	12	11	10	11	8	9	12	83	0,13
Financial results and better image of the organization in the sector	9	10	9	11	7	9	10	6	71	0,11
Harmonious financial results and better indemnification	6	11	12	8	8	11	12	8	76	0,12
Growth of the number of qualified specialists	3	5	4	1	5	7	3	3	31	0,05
Improvement of the country's image in the internal and external markets	1	4	2	2	1	2	1	1	14	0,02
Economic growth through tax contributions	4	2	1	3	2	1	2	2	17	0,03
Assurance of the stability of food prices and accessibility of safe products	7	3	3	5	4	3	5	7	37	0,06
Assured possibilities of the business development and new investments	2	1	5	4	3	5	7	5	32	0,05
Total:									624	1,0

To identify priority development directions for insurance organizations, the importance of various developments was ranked based on the current situation. This assessment utilized Formula (5) for the calculations, and the results are presented in Table 4. Additionally, experts were invited to provide an initial evaluation, rating each business development direction on a 10-point scale.

Table 4.
Determination of the priority directions of the development for insurance organizations.

Directions of the development for insurance organizations	Total assessment points	Importance
Increase the development and adaptation of new insurance products (services)	82.18	1
Increase the notoriety of the insurance organization	63.22	2
Improvement of the creation and support of relations with customers	59.47	3
Improvement of the formation and management of the insurance products sales system	57.69	4
Improvement of the insurance product sale process	56.82	5
Improvement of the market analysis: performance of studies, segmentation and positioning according to their results	55.00	6
Improvement of the productivity of the employees' activity	53.99	7
Improvement of the determination of directions of the activity in the market	53.33	8
Improvement of the implementation of means for the encouragement of insurance products	52.86	9
Improvement of the organization of the loss assessment process	51.32	10
Increase of the implementation of digitalization processes	51.10	11
Improvement of the compliance of contracts and valid rules	50.59	12
Increase of the employees' motivation	49.12	13
Improvement of the organization of the employees' competence training	48.23	14
Acceleration of the technological service	47.86	15
Increase of the development of new technologies and use of means	47.31	16
Increase of the search for new markets	45.20	17
Strengthening of the support of relations with partners	44.84	18
Improvement of the loss assessment methodology	44.45	19
Improvement of the employees' career planning	43.14	20

Data normalization is performed using formulas (6) and (7). The results are provided in Table 5.

Table 5.

Statistical data of the qualitative criteria, vectors normalization and significance of the criteria.

Criteria \ Directs of the development	Measure	q_i	Implementat ion and improvement of modern marketing		Improvement of the service of contracts and procedures		Improvement of the loss assessment system		Encouragement of the sales organization. development of sales networks and channels		Improvement of the business management by organizing the development through the inclusion of employees	
			x_{ij}^2	r_{ij}	x_{ij}^2	r_{ij}	x_{ij}^2	r_{ij}	x_{ij}^2	r_{ij}	x_{ij}^2	r_{ij}
Possibility to adapt to climate change	Points	0.14	88	0.3294	92	0.3444	126	0.4717	134	0.5016	146	0.5466
Number of customers and employees. increase of the level of satisfaction of their needs	Points	0.12	102	0.3648	128	0.4578	114	0.4078	126	0.4507	150	0.5365
Harmonious financial results and better indemnification	points	0.08	122	0.4246	124	0.4316	134	0.4664	128	0.4455	134	0.4664
Resistance in the agricultural sector	points	0.09	88	0.3274	142	0.5283	122	0.4539	102	0.3795	138	0.5134
Financial results and better image of the organization in the sector	points	0.13	94	0.3945	82	0.3442	112	0.4701	106	0.4449	132	0.5540
Better economic state	points	0.11	86	0.3484	86	0.3484	114	0.4618	114	0.4618	142	0.5752
Freedom to make decisions about further acts (possibilities of choice)	points	0.12	82	0.3317	122	0.4935	118	0.4773	118	0.4473	108	0.4368
Assurance of the stability of food prices and accessibility of safe products	points	0.05	78	0.3068	104	0.4091	128	0.5035	132	0.5192	118	0.4641
Growth of the number of qualified specialists	points	0.02	84	0.3222	114	0.4372	112	0.4296	134	0.5140	132	0.5063
Assurance of possibilities of the business development and new investments	points	0.03	92	0.3710	78	0.3145	128	0.5161	142	0.5726	102	0.4113
Economic growth through tax contributions	points	0.06	94	0.3749	82	0.3270	128	0.5105	146	0.5823	98	0.3909
Improvement of the country's image in the internal and external markets	points	0.05	110	0.4694	74	0.3158	126	0.5377	92	0.3926	114	0.4865

Table 6.

Grouping of compounds of the assessment criteria into ideal A^+ and negative ideal A^- variants.

Criteria	q_i	Implementa- tion and improvement of modern marketing	Improvement of the service of contracts and procedures	Improvement of the loss assessment system	Encouragement of the sales organization. development of sales networks and channels	Improvement of the business management by organizing the development through the inclusion of employees	A^+	A^-
Possibility to adapt to the climate change	0.14	0.0461	0.0482	0.0660	0.0702	0.0765	0.076	0.046
Number of customers and employees. increase of the level of satisfaction of their needs	0.12	0.0438	0.0549	0.0489	0.0541	0.0644	0.064	0.044
Harmonious financial results and better indemnification	0.08	0.0340	0.0345	0.0373	0.0356	0.0373	0.037	0.034
Resistance in the agricultural sector	0.09	0.0295	0.0475	0.0409	0.0342	0.0462	0.047	0.029
Financial results and better image of the organization in the sector	0.13	0.0513	0.0447	0.0611	0.0578	0.0720	0.072	0.045
Better economic state	0.11	0.0383	0.0383	0.0508	0.0508	0.0633	0.063	0.038
Freedom to make decisions about further acts (possibilities of choice)	0.12	0.0398	0.0592	0.0573	0.0573	0.0524	0.059	0.04
Assurance of the stability of food prices and accessibility of safe products	0.05	0.0153	0.0205	0.0252	0.0260	0.0232	0.026	0.015
Growth of the number of qualified specialists	0.02	0.0064	0.0087	0.0086	0.0103	0.0101	0.010	0.006
Assurance of possibilities of the business development and new investments	0.03	0.0111	0.0094	0.0155	0.0172	0.0123	0.017	0.009
Economic growth through tax contributions	0.06	0.0225	0.0196	0.0306	0.0349	0.0235	0.035	0.02
Improvement of the country's image in the internal and external markets	0.05	0.0235	0.0158	0.0269	0.0196	0.0243	0.027	0.016

When continuing to apply (8), (9), (10), and (11) and the formulas, it is not difficult to calculate the grouped ideal and negative ideal variants of solutions also according to requirements of the Topsis method (Table 6).

The final results can be obtained by calculating the distance to the ideal variant of the solution (Table 7) according to the formulas (12,13).

Table 7.
Relative distance of each variant of the development from the ideal result.

Criteria	S_i^+	S_i^-	C_i^+	Ranks
Directs of the development				
Implementation and improvement of modern marketing	0.0587	0.0106	0.15	5
Improvement of the service of contracts and procedures	0.0576	0.0294	0.34	4
Improvement of the loss assessment system	0.0264	0.0409	0.62	2
Encouragement of the sales organization. development of sale networks and channels	0.0272	0.0422	0.61	3
Improvement of the business management by organizing the development through the inclusion of employees	0.0147	0.0578	0.80	1

Thus, after ranking the obtained results, improving business management through the inclusion of employees would be the most suitable direction for developing insurance companies' crop insurance activity.

4. Discussion

The development process must be constant in insurance organizations, so it is searched for new possibilities of development at the end of every direction of the activity; the assessment of alternative results is started after passing all the directions of the activity. We have mentioned only the main directions for development, which were found in scientific literature. Insurance companies can also try to independently look for other innovative, original directions for development and include them in a list. This assessment fully considers the potential outcomes or changes resulting from new development opportunities. It is then decided whether these activities must be included and whether adaptation of new development possibilities must be started. [41] The revelation of these activities is essential for new insurance organizations and those working in the crop insurance sector presently. New insurance organizations can start applying these directions of the activity in the market more quickly. [42] They will likely suffer fewer losses and know the segment of the crop insurance market. It is indicated in the scientific literature that insurance marketing is one of the most important fields of activity in the insurance sector and is quite a new philosophy in the insurance business. [2] According to the actual situation, it was found that the improvement of business management by organizing development involving all employees is the best way for business development in existing conditions for crop insurance companies. Reliable calculations have proved this result and are clearly the best. Further actions for crop insurance organizations should be related to implementing the determined business development direction. Although the Topsis method is considered the most appropriate for such evaluations, our further direction of research would be related to testing other evaluation methods and comparing the obtained results. In addition, we intend to specify the necessary actions for each identified direction of business development. Then, the required development path for each insurance organization will be even more precise. We have suggested an original methodology based on quantitative judgments. The proposed methodology's criteria are chosen scientifically and adequately adapted to the crop insurance field, thus increasing the methodology's originality.

5. Conclusions

In the article, we solved the set problem and reached the set goal: we presented the substantiated methodology for determining the most suitable direction of crop insurance development for insurance organizations. The suggested instrument is based on the application of the multicriterial Topsis method. The article proved that this method was the most suitable for making an important management solution for business development. The Topsis method is based on the multicriterial assessment, so applying mathematical methods increases the objectivity of solutions.

The suggested instrument was tested with the example of Lithuanian agriculture, and its suitability was proved completely. The most suitable direction for activity development for crop insurance organizations was determined and named management improvement by including employees in the cooperation. The choice of this direction for the development of the activity will ensure the best results for commercial activity under the present conditions in Lithuania. This original instrument is also suitable for application in other countries with different business conditions, so the results would likely differ. Our further studies are related to research on implementing of possible development directions.

Funding:

This research received no external funding. VMU scientists created a smart computer program on a volunteer basis.

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