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Logistics Customer Service and Sustainability-Focused Freight Transport Practices of Enterprises: Joint Influence of Organizational Competencies and Competitiveness

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Abstract: The paper presents the results of research on the influence of logistics customer service on sustainability-focused freight transport practices of enterprises. Additionally, the extended perspective of the key relation through the inclusion of the joint effect of selected organizational competencies of the companies and their competitiveness in interaction with logistics customer service was introduced. The adopted research procedure included the use of several different statistical methods with regard to data collected in 275 freight transport enterprises. First, the Kaiser-Meyer-Olkin test and the Bartlett Sphericity test were determined, then a factor analysis was carried out with the intention of performing a reliability analysis and discriminant validity assessment, and finally, correlations and hierarchical multiple regression were determined. The findings of the research suggest a primal concluding explication that sustainability-focused freight transport practices are conditioned by auxiliary logistics processes realized by the enterprise within logistics customer service, joint competencies within the organization's management, as well as peripheral circumstances of competitiveness.

Keywords: Logistics customer service; Sustainability; Freight transport practices; Management; Organizational competence; Competitiveness

1. Introduction

Freight transport enterprises in Poland are in the recognition phase of handling the economic, social and environmental attitudes in their business activities via practices to be recognized as favoured by the customers of logistics service. Concerning the common practical manners, sustainable development of the freight transport enterprises refers to their competitiveness is in the greater extent clarified by economic domain, precedently to environmental and social areas [1, 2]. Simultaneously the findings of the research presented in the literature do not indicate that freight transport enterprises attempt to develop their approach to logistics customer service in support of sustainable competitiveness, also as a result of the appliance of organizational competencies. Concerning the results of the exploration of published research within the problem, identified gap suggested the framework for the investigation introduced in the paper.

The paper's aim is to present the results of research on the influence of logistics customer service on sustainability-focused freight transport practices of enterprises. Additionally, the extended perspective of the key relation through the inclusion of the joint effect of selected organizational competencies of the companies and their competitiveness in interaction with logistics customer service was introduced.

The following chapter presents a basic approach to the crucial terms presented in the literature as the framework for the hypotheses development. Subsequently, a short description of the materials and methods used in the research is indicated, and the results of the examination are noted and discussed. In the last chapter of the paper main concluding remarks and implications are reported.

2. Basic Theoretical Background and Hypotheses

An observable suggestive switch to the service predominant position in the customers' value generation refers certainly to the freight transport sector. As an undeniable outcome of the freight transport service business activity, a demanding competition environment arose with the attempts of enterprises in the stage of attention focused on customers' requirements and searching for advanced sustainable competitiveness. Within the fluctuation of the new freight transport market framework, if only the enterprise's strategic settlements are suitable as for economic effectiveness as to the serviceableness of the society and the environment, enterprises manage to create comprehensive alignment to become crucial market participants [3]. Nevertheless, according to Morioka et al. [4], along with the perceptivity that novelty in services is not satisfactory enough to provide a competitive advantage, freight transport enterprises are struggling by the focal point located in the sustainability assumptions to accomplish their goals.

The idea of sustainability is characterized by WCED [5] as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The compelling attitude of the sustainability concept is unified with enterprises' business concerns and achievements by means of triple-pillar order within the economic performance (e.g. investments in modern technologies, competitive pricing), social performance (e.g. reduction of the gap between the demand and supply of the staff, growth of transparency of social processes) and environmental performance (e.g. reduction of carbon emission, green practices), with the purpose of acquiring a leading competitive position in the market [6]. As remarked by Aliakbari et al. [7, 8] whereas there are numerous confirmations of social and environmental liability exertions which support the economic growth of the companies, sustainable service manner influences, especially forcefully the customers' conduct and presumption. From this perspective also freight transport enterprises are settled as generating greater value in customers' viewpoint in the management process of the competitive extent of economic, social and environmental scope.

For freight transport companies, the concept of sustainable development indicates "an economically justified, socially acceptable and environmentally friendly use of resources in order to sustain its development in the long term" [9, 10]. Management in accordance with the idea of sustainable development in the logistics industry signifies in the use of various concepts and tools to help in the regulation of social and environmental issues, which in turn rearranges into the development of a sustainable supply chain [11-13]. In a sustainable transport chain, there is a process of using environmentally friendly resources and transforming them so that their secondary properties can be improved or recycled in the existing environment without disturbing it [14, 15]. Environmental values include, among others, compliance with legal regulations related to the environmental aspects of doing business. Measurable practices can be implemented within transport chains [16-19] "to measure the amount of greenhouse gases emitted, energy efficiency or the possibility of reprocessing materials". Similarly, among the social values emphasized in sustainable transport, one can distinguish, among others, fair labour practices, generous remuneration of employees, observance of labour law and human rights, adherence of the principles of equality, safety at the workplace, as well as practices focused on cooperation with local communities. The economic values include, among others, practices of fair contract terms, timely payment of receivables, not taking prevalence of economic advantage over business partners, building relationships based on trust, applying fair trade principles, proper distribution of risk and responsibility in sustainable transport.

In the model approach of sustainable development for the freight transport industry, proper service is the basis on which such foundations as pre-transactional, transactional, and post-transactional elements of logistics processes offered for the customers are built. The future of freight transport companies and the ability to gain an advantage over competitors often depends on the established business strategy, in which the customer and his proper service are key elements of success [20]. Logistics customer service as interpreted by La Londe [21] concerns logistics forms of activity serving to meet customer needs. Basically, customer service can be defined according to Daugherty et al. [22] as an appropriate ability to operate in the area of the logistics system of a company, which strives to meet the logistics needs of recipients with high efficiency of actions taken and a sufficiently high level of communication with the customer. In operational terms, logistics service determines the need to introduce specific standards and use of technologies that allow for the flows of both physical and information nature [23]. Currently, logistics customer service understood in this way is an important source of competitiveness for enterprises, enabling the formation of long-term and positive relationships with customers, which often transforms into satisfaction with the quality of services provided, and in turn into profits. The competitive advantage of freight transport enterprises today is determined, among others, by customer satisfaction with the course of the transaction.

The competitiveness term in the interpretation by Saha et al. [24] is an organizational effectiveness that is determined by managerial and operational growth of an organization that satisfies to fulfil the organizational performance development requirements." Gorynia [25] considers competitiveness through the prism of the skills competition, which means the survival and operation of the company in a competitive environment. More and more freight transport enterprises concentrate on expanding their potential in the fundamental spheres such as advancement and quality of technical solutions of the services offered to the customers, which can diversify their activity and signalize it efficiently in the market by expanding particular advantages [26]. In agreement with modifying market fluctuation within technological changes, enterprises undertake the strategic direction for a significant position in competitiveness and simultaneously for obtaining market dominance concerning the sustainability rules [27]. Within joint assumptions, the idea of sustainability which changes the customers from a consuming group to an attentive society, stimulates the enterprises to embrace an array of connections with environmental handling, social liability and economic compound to evolve into potent competitors.

Along with the withdrawal of enterprises from "the traditional model of cooperation functioning within formal and hierarchical structures, new models of cooperation are created based on changing relationships between companies, consumers and markets [28]." Prahalad and Ramasvamy [29] recognized that this model of cooperation is associated with a new approach to value creation, based on co-creation by customers and companies. In turn, researchers [30] argue that a new model of cooperation between organizations and stakeholders is emerging, which leads to a change in the way companies and societies use knowledge and capabilities to create value. The above issues focus on the concept of organizational competence. A comprehensive concept of organizational competence was proposed by Prahalad and Hamel [31], presenting the idea of the key competencies of the company "core competence, which they understood as the collective knowledge and learning in the organization, signified in the ability to provide customers with additional benefits." The definition of the key competencies of an organization is co-created by the concepts such as skills and resources. Resources are understood as assets, both tangible and intangible, which for the purposes of key competencies are appraised in relation to the company's goals and strategy, competition, and applicable economic and financial standards. Skills are specific abilities, relationships, organizational knowledge, and reputation. Using the idea of key competencies, the specific capabilities of the organization are indicated - the strengths of the company, "which may be related to the ability to accumulate knowledge in the field of coordinating various activities and skills, as well as integrating technology streams. Importantly, competencies are not single skills or experiences, but a combination of complementary knowledge of groups of employees [32, 33]." They are shaped by the synergy effect of the company's tangible, intangible and, above all, human resources [34].

Organizational competencies of freight transport enterprises include numerous indications, among others information transfer, flexible organizational culture or effective measurements. First mentioned information transfer is understood as the alteration of incentive determined in one system which is influenced by another system and their relationship share a given environment [35, 36]; it may stimulate improvement in contact and communication with the customers within the logistics service. Another organizational competence important for freight transport companies seems to be flexible organizational culture, defined as a set of assets, values and premises shared by representatives of the organization, focused on the enterprise's creativity, receptivity and progress [37, 38]; within such orientation, enterprises may be more open for the customers' requirements and needs, respond more proactively in service offer, including logistics customer service. Effective measurements as organizational competencies are introduced as means of quantifying the effectiveness and efficiency of activities and operations in the management processes of enterprises [39, 40]; as support for control area in the companies also within the standards and meters of logistics customer service are suggested as alignment which results in benefits for the recipients of logistics service.

The basic theoretical data only signalized above have been significantly deepened and analyzed in terms of the identified relationships between terms and constructs that have been noted in the literature.

Based on the analyzes carried out, the following research hypotheses were indicated in accordance with the conceptual framework presented in Figure 1:

H1: Logistics customer service is positively associated with sustainability-focused freight transport practices;

H2: When organizational competencies are higher, the positive relationship between logistics customer service and sustainability-focused freight transport practices is stronger;

H2a: When information transfer is higher, the positive relationship between logistics customer service and sustainability-focused freight transport practices is stronger;

H2b: When flexible organizational culture is higher, the positive relationship between logistics customer service and sustainability-focused freight transport practices is stronger;

H2c: When the measurement is higher, the positive relationship between logistics customer service and sustainability-focused freight transport practices is stronger;

H3: When the level of competitiveness is high, the relationship between logistics customer service and sustainability-focused freight transport practices is stronger for enterprises with strong organizational competencies than for enterprises with weak organizational competencies;

H3a: When the level of competitiveness is high, the relationship between logistics customer service and sustainability-focused freight transport practices is stronger for enterprises with strong information transfer than for enterprises with weak information transfer;

H3b: When the level of competitiveness is high, the relationship between logistics customer service and sustainability-focused freight transport practices is stronger for enterprises with strong flexible organizational culture than for enterprises with weak flexible organizational culture;

H3c: When the level of competitiveness is high, the relationship between logistics customer service and sustainability-focused freight transport practices is stronger for enterprises with strong measurement than for enterprises with weak measurement.

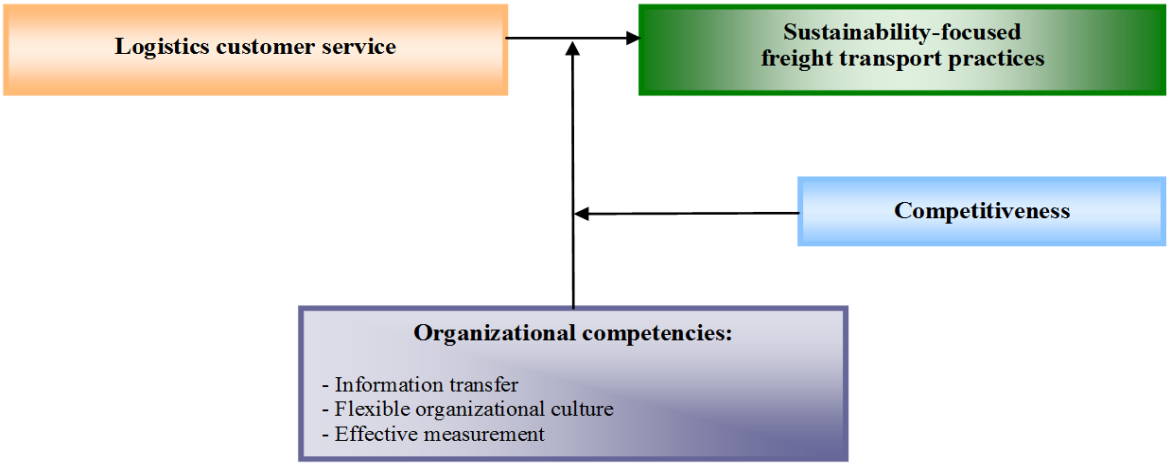

Figure 1. Conceptual framework

3. Materials and Methods

The material necessary to perform the research was collected through the use of a survey questionnaire. In the first stage, the research tool was verified by seven executives of the transport companies in terms of the correctness and clarity of the proposed statements defining the measurement elements. After introducing appropriate changes, the questionnaire was used in a pilot study in 14 enterprises to further verify the measures. The conclusive research tool was distributed in the form of online surveys to the managerial staff of transport companies located in Poland. In the period March-October 2021, over 600 attempts were made to contact representatives of transport companies asking for permission to participate in the research, but only 275 managers or directors of the enterprises made it possible to collect complete and reliable data.

The structure of the survey form was based on two pillars. The first one was the characteristics of the responding companies, including the size of the enterprises, area of business activity, region of business activity, and age of business activity. The second pillar of the survey form consisted of statements relating to the measurement of the following elements: sustainability-focused freight transport practices, logistics customer service, competitiveness, supply chain planning competence, resources and organizational competencies including information transfer, flexible organizational culture and effective measurements. The final version of the statements accepted for the second pillar of the questionnaire form is indicated in Table 2. A seven-point Likert scale was adopted to evaluate the statements, where 1 means "I completely disagree" and 7 means "I completely agree".

In the measurement procedure, most of the variables were determined by the items proposed in the relevant literature sources. In the circumstances of the identified lack of necessary data in the available publications, defining items were proposed, consulted with seven executives of the transport companies. Finally, accepted was for the dependent variable which is sustainability-focused freight transport practices representation of three measurement elements chosen within the analysis of the results of studies published by the researchers [41-47], with emphasis on optimization methods of the transportation routines, green logistics services and environmentally friendly technologies used to diminish energy loss and prevent pollution.

Within the independent variable, which is logistics customer service, own proposals of six measurements elements were constructed, as modified recommendations indicated by the researchers [21, 22, 48-51], referred to the communication and relationship with the customers, policy of logistics service offered, its standards with a concern of the priorities of sustainable development and green reputation of freight transport services due to the customers' requirements. Based on studies of the researchers [52-61], selected organizational competencies as independent variable was determined using fourteen measurement elements, including information transfer

(focused on the changes in freight transport services realized with concern of the priorities of sustainable development, the strategies, and positive and negative experiences in freight transport services realization with concern of the priorities of sustainable development), flexible organizational culture (focused on development of services offered and innovation acquisition with concern of the priorities of sustainable development, as well as progress as a consequence of new ideas expansion with concern of the priorities of sustainable development), and effective measurements (focused on control system and procedures with concern of the priorities of sustainable development as support for the decisive processes management, as well as on efficiency, profits and stability of the activities with concern of the priorities of sustainable development, metrics and indicators of environmentally friendly technologies use, and numerical results of incomes and expenditures including environmentally friendly activities). The last independent variable was competitiveness, with four measurement elements selected within an analysis of the inquiries presented by the researchers [52, 53, 62] and adopted for the paper's aim, including services offered with a concern of the priorities of sustainable development, following the strategies of price competition commonly, and intense changes between enterprises in the transport branch.

The research procedure was also extended to involve control variables, including: Supply chain planning competence, resources, area of enterprises activity, age of enterprises activity and size of enterprises. Based on the results of research presented by the researchers [58, 63, 64], supply chain planning competence was determined through four measurement items including searching for promising partners by freight transport enterprises with a concern of the priorities of sustainable development by means of diversified channels, assessment of the level of reliability within priorities of sustainable development of probable partners in the supply chain, the types of relations necessary to support with a concern of the priorities of sustainable development, and notifications if probable partnership interrupts the cooperation within priorities of sustainable development with other partners in the supply chain. Another control variable was resources, with four measurement elements selected within the analysis of the inquiries presented by the researchers [65-68] and adopted for the paper's aim, including consideration if the resources offered by the partners in the supply chain are beneficial within priorities of sustainable development, possibilities of obtaining the resources concerning of the priorities of sustainable development, proper means to receive the resources, as well as kinds of resources offered by the partners in the supply chain, concerning of the priorities of sustainable development. The last three control variables, so the area of enterprises activity, age of enterprises activity and size of enterprises, were indicated in the first part of the questionnaire form, so as typical characteristics of the responding companies.

The adopted research procedure included the use of several different statistical methods using the SPSS10 software. First, the Kaiser-Meyer-Olkin test and the Bartlett Sphericity test were determined, then a factor analysis was carried out with the intention of performing a reliability analysis and discriminant validity assessment. The last stages of the research procedure included the determination of correlations and hierarchical multiple regression.

4. Results and Discussion

The analysis of the answers to the questions of the first part of the survey questionnaire, presented to representatives of the management staff of 275 freight transport enterprises, provided data characterizing the research sample. Regarding the size of the freight transport enterprises which participated in the survey, only 8% (22 enterprises) were micro-enterprises with less than 10 employees, over 72% (198 enterprises) of the small enterprises with a number of employees between 9 and 50 formed the research sample, in near 12% (33 enterprises) of the medium-sized enterprises with a number of employees between 50 and 249 contributed to the survey, and 22 entities (8%) were classified as the large enterprises with 250 employees or more. Their fundamental business activities were transportation (72% of the responses; 198 enterprises), to a significantly lesser extent shipping (20% of the responses; 55 enterprises) and third-party logistics (8% of the responses; 22 enterprises), which were realized on the international scale by 68% of enterprises (187 entities), nationally by 12% of the entities (33 companies) and regionally by 20% of the research sample (55 companies). According to the declared age of business activity by the representatives of the freight transport companies, almost 21% of enterprises (58 companies) have been present in the market for more than 20 years, near 24% (66 companies) - between 10 and 20 years, while about 22% of respondents (61 companies) indicated between 5 and 10 years, and representatives of 33% of the companies (90 entities) determined their status as a beginner in this area with less than 5 years of business experience. All the survey statements were indicated by the managerial staff of the freight transport enterprises: managers (75% of responses), directors (20% of responses) or presidents (5% of responses).

In the next stage of the fundamental analysis of the collected data, it was undertaken to check if the variables are properly qualified for the exploratory factor analysis. For this purpose, the Kaiser-Meyer-Olkin test and Bartlett Sphericity test were used, obtaining the results presented in Table 1. According to the indicated data, within the Kaiser-Meyer-Olkin test, the values of the variables exceeded 0.5, while within the Bartlett Sphericity test the value of 0.000 was obtained of significant probability. In regard to the results of both tests based on the implication by Hair et al. [69], it was found that the analyzed variables are acceptable for the exploratory factor analysis.

In the first phase of reliability analysis with regard to the determination of data relevance, the ratio was

sufficiently purified. Then an assessment of the internal consistency of the data using Cronbach's alpha coefficient [70] was undertaken. As the results obtained were higher than recommended 0.7 for Cronbach's alpha coefficient with a value of 0.814, the satisfactory internal consistency of the data was confirmed. Subsequently, the internal consistency of the constructs and items was validated including sustainability-focused freight transport practices, logistics customer service, organizational competencies and competitiveness. As presented in Table 2, the results of Cronbach's alpha coefficient exceeded 0.7 for each composite construct which indicated correct internal consistency.

Table 1. Results of the Kaiser-Meyer-Olkin test and the Bartlett Sphericity test

Kaiser-Meyer-Olkin test and Bartlett Sphericity test	Sustainability-focused freight transport practices	Logistics customer service	Organizational competencies	Competitiveness	Supply chain planning competence	Resources
Approximate chi-square distribution	0.850	0.877	0.903	0.720	0.738	0.780
Freedom	1320.060	787.206	2457.485	220.65	361.204	428.15
Significance probability	27.000	14.000	77.000	5.000	5.000	5.000

Source: Own elaboration

Within validity analysis, first, the factor loading of each measurement element, presented in Table 2, was evaluated. The values obtained were higher than 0.7, and the average variance extraction of the variables surpassed the value of 0.5 indicated by Bagozzi et al. [71]. Inclusively attained data suggested that the measures had proper convergence validity. Moreover, adaptation of principal component analysis proved that the factors extracted within the variables were coherent with the factors on the initial ratio phase, as well as that the aggregate variance explained (%) exceeded 50%. In consideration of the hypothetical factor arrangement, the results of the analysis affirmed appropriateness and correct structural validity.

Table 2. Results of reliability and validity

	Measurement elements	Factor loading	Variance (% explained)
SP	Sustainability-focused freight transport practices ($\alpha = 0.802$; AVE = 0.685; CR = 0.861)		70.708
	1. Our enterprise has developed optimization methods of transportation routines to decrease pollution.	0.888	
	2. Our enterprise enhances processes improvement to offer green logistics services.	0.766	
	3. Our enterprise exploits environmentally friendly technologies to diminish energy loss and prevent pollution.	0.811	
LCS	Logistics customer service ($\alpha = 0.855$; AVE = 0.604; CR = 0.904)		50.624
	1. Our enterprise stimulates tight contact with our customers referred to freight transport services realized with the concern of the priorities of sustainable development.	0.648	
	2. Our enterprise communicates systematically with our customers about their freight transport services realized with the concern of the priorities of sustainable development.	0.772	
	3. Our enterprise has the capability to develop a solid relationship with our customers.	0.817	
	4. Our enterprise has performed a policy of logistics service offered, realized with the concern of the priorities of sustainable development.	0.810	
	5. Our enterprise has advanced the standards of freight transport services realized with the concern of the priorities of sustainable development.	0.808	
	6. Our enterprise has improved the green reputation of freight transport services due to the customers' requirements.	0.780	
OC	Organizational competencies ($\alpha = 0.915$; AVE = 0.7007; CR = 0.960)		71.407
IT	Information transfer ($\alpha = 0.901$; AVE = 0.686; CR = 0.937)		
	1. Our enterprise transfers important information about freight transport services realization with the concern of the priorities of sustainable development, to the	0.880	

	customers.		
	2. Our enterprise transfers important information about the changes in freight transport services realized with the concern of the priorities of sustainable development, to the customers.	0.902	
	3. Our enterprise transfers important information about the strategies for freight transport services realized with the concern of the priorities of sustainable development, to the customers.	0.885	
	4. Our enterprise transfers important information about positive and negative experiences in freight transport services realization with the concern of the priorities of sustainable development, to the customers.	0.857	
FOC	Flexible organizational culture ($\alpha = 0.878$; AVE = 0.808; CR = 0.921)		
	1. Our enterprise is a very active, ambitious and cooperative organization with the concern of the priorities of sustainable development.	0.906	
	2. Our enterprise is engaged in the development of services offered and innovation acquisition with the concern of the priorities of sustainable development.	0.923	
	3. Our enterprise highlights progress as a consequence of new ideas expansion with the concern of the priorities of sustainable development.	0.852	
M	Effective measurements ($\alpha = 0.861$; AVE = 0.602; CR = 0.904)		
	1. Our enterprise has developed a control system and procedures with the concern of the priorities of sustainable development which hold up decisive processes management.	0.760	
	2. Our enterprise highlights efficiency, profits and stability of the activities with the concern of the priorities of sustainable development.	0.800	
	3. Our enterprise control the metrics and indicators of transportation routines.	0.783	
	4. Our enterprise control the metrics and indicators of green logistics services.	0.718	
	5. Our enterprise control the metrics and indicators of environmentally friendly technologies use.	0.742	
	6. Our enterprise presents numerical results of incomes and expenditures including environmentally friendly activities.	0.826	
C	Competitiveness ($\alpha = 0.711$; AVE = 0.5383; CR = 0.820)		53.843
	1. Other freight transport enterprises in the market propose comparable services to ours, realized with the concern of the priorities of sustainable development.	0.735	
	2. In the freight transport branch services offered with the concern of the priorities of sustainable development evolves very quickly.	0.687	
	3. In the freight transport branch the entrepreneurs usually follow the strategies of price competition.	0.737	
	4. In the freight transport branch the competition between enterprises is very intense.	0.760	
SCPC	Supply chain planning competence ($\alpha = 0.785$; AVE = 0.615; CR = 0.860)		61.508
	1. Our enterprise is searching for promising partners with the concern of the priorities of sustainable development by means of diversified channels.	0.781	
	2. Our enterprise assesses the level of reliability within priorities of sustainable development of probable partners in the supply chain.	0.832	
	3. Our enterprise apprises if a probable partnership interrupts the cooperation within priorities of sustainable development with other partners in the supply chain.	0.758	
	4. Our enterprise perceives the types of relations necessary to support with the concern of the priorities of sustainable development.	0.747	
R	Resources ($\alpha = 0.817$; AVE = 0.650; CR = 0.875)		65.070
	1. Our enterprise considers if the resources offered by the partners in the supply chain are beneficial within the priorities of sustainable development.	0.782	
	2. Our enterprise has the proper means to receive the resources concerning of the priorities of sustainable development.	0.857	
	3. Our enterprise identifies the possibilities of obtaining the resources concerning of the priorities of sustainable development.	0.814	
	4. Our enterprise perceives the kinds of resources offered by the partners in the supply chain, concerning of the priorities of sustainable development.	0.751	

Source: Own elaboration

In the next stage of the adopted research procedure, construct correlations were conformed. The results of the correlation matrix are presented in Table 3, as well as the results of descriptive statistics. Within the relation

between organizational competencies and logistics customer service remarkably positive correlation was noted. Similarly, competitiveness and logistics customer service proved a conclusive correlation. Finally three crucial constructs of the research, so logistics customer service, organizational competencies and competitiveness, had positive results of correlations with sustainability-focused freight transport practices.

Table 3. Correlations

		SP	LCS	IT	FOC	M	C	AR	AG	S	SCPC	R
Sustainability-focused freight transport practices (SP)		0.685										
Logistics customer service (LCS)		0.304 **	0.604									
Organizational competencies (OC)	**Information transfer (IT)**	0.121 *	0.184 **	0.686								
	Flexible organizational culture (FOC)	0.111 *	0.244 **	0.654 **	0.808							
	Effective measurements (M)	0.301	0.172 **	0.583 **	0.646 **	0.602						
Competitiveness (C)		0.325 **	0.270 **	0.13 *	0.020	0.11 *	0.538					
Controls	**Area of enterprise's activity (AR)**	0.068	-0.048	-0.01	0.016	0.013	-0.013	1				
	Age of enterprise's activity (AG)	-0.026	-0.003	0.135 *	0.026	0.030	0.068	-0.142 **	1			
	Size of enterprise (S)	-0.083	-0.016	-0.073	-0.027	0.000	-0.144 **	0.260 **	-0.235 **	1		
	Supply chain planning competence (SCPC)	0.108	0.511 **	0.094	0.104 *	0.074	0.124 *	0.001	-0.121 *	0.056	0.615	
	Resources (R)	0.244 **	0.658 **	0.068	0.108 *	0.120 *	0.165 **	0.071	-0.078	0.027	0.526 **	0.650
Mean		5.002	5.726	5.200	5.015	5.205	5.250	10.200	1.560	3.370	5.674	5.561
Standard deviation		1.100	0.9003	1.101	1.101	1.075	0.970	5.740	0.780	1.000	1.034	1.024

Notes: "* - significant value at 0.05; ** - significant value at 0.01; *** - significant value at 0.001"
Source: Own elaboration

In reference to the requirements of hierarchical multiple regression, following proceeding was approved as prescribed by Carte and Russell [72]. First, for all the variables the average values were determined and unified in the model form, with regard to excluding the difficulties with collinearity. Next, testing of principal effects on the dependent variable was performed. Moreover, a testing of the side effects of interaction variables on the dependent variable was accomplished. Conclusively the testing was advanced to indicate the considerable diversity within R2 in two equating. The results of the proceeding realization are presented in Table 4.

Based on the final results of the data analysis presented in Table 4, starting from model B, the logistics customer service is positively associated with sustainability-focused freight transport practices ($\beta = 0.361$; $p < 0.001$), which confirms that hypothesis 1 is supported. The obtained outcome is harmonious with the general trend presented in the literature within the results of the previous research, published among others by the researchers [73-76]. Especially the higher level of logistics service offered to the customers by enterprises is a significant determinant in favour of extending the offer of standard freight transport practices with services that meet the need to participate in building sustainable development by searching not only for economically beneficial solutions, but also for pro-environmental and pro-social activities. Such possibilities also facilitate the enterprise to gain eligible resources indispensable for the partners in the supply chain, accordingly, developing and improving the potential of sustainability-focused freight transport practices for the enterprise's performance growth and increase of competitive advantage.

For the models C, D and E, the coefficient for the relation of logistics customer service and information transfer is not significant ($\beta = -0.047$; $p > 0.1$). Moreover, the coefficient for the relation of logistics customer service and flexible organizational culture is significant but negative ($\beta = -0.082$; $p < 0.05$), and similarly the coefficient for

the relation of logistics customer service and effective measurements is significant but negative (β = - 0.08; p < 0.05). The results provide support for hypotheses 2b and 2c, but suggest no support for hypothesis 2a. Such effects suggest that interactions of the double extent of organizational competencies (flexible organizational culture and effective measurements) decline the positive influence of logistics customer service on sustainability-focused freight transport practices. Comparative analysis with other literature sources, does not lead to the results of similar studies, only indirect and deductive links can be invoked. In the case of flexible organizational culture, the obtained results seem to be contrary to those found in the literature. For example, research conducted by the researchers [77-79] concludes that the flexibility orientation of the enterprise's culture is focused on the innovation development and growth through new services which may suggest that also novelty within logistics customer service supporting sustainability will enhance the growth of sustainability-focused freight transport practices. Measurements area within logistics customer service, in accordance with the indications of [ballou], on the other hand, pays attention to the profitability of projects and cost reduction, which converts rather into a justification for adopting restrictions in the field of pro-social and pro-environmental activities and actions. According to the Nobel Prize winner J.K. Galbraith, activities related to environmental protection "by their very nature are in conflict with the motivational force of the market economy [80]." Therefore, enterprises implement the concepts of lean management in order to eliminate the waste of space, production resources or time of production and delivery to the final customer.

Table 4. Results of hierarchical multiple regression

Variables	Sustainability-focused freight transport practices							
Model	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Area of enterprise's activity (AR)	0.014	0.01 *	0.010 *	0.018 *	0.018 *	0.020 *	0.017	0.020 *
Age of enterprise's activity (AG)	- 0.037	- 0.051	- 0.060	- 0.054	- 0.054	- 0.082	- 0.068	- 0.061
Size of enterprise (S)	- 0.106	- 0.104 *	- 0.105 **	- 0.106 **	- 0.106 **	- 0.083	- 0.078	- 0.08
Supply chain planning competence (SCPC)	- 0.020	- 0.098	- 0.100	- 0.100	- 0.110 *	-0.101	-0.104 *	-0.102 *
Resources (R)	0.275 ***	0.102	0.107	0.106	0.108	0.107	0.118	0.114
Logistics customer service (LCS)		0.361 ***	0.322 **	0.328 ***	0.346 ***	0.207 **	0.223 **	0.212 **
Information transfer (IT)			0.055			0.012		
Flexible organizational culture (FOC)				-0.007			0.005	
Effective measurements (M)					-0.026			-0.06
Competitiveness (C)						0.245 ***	0.266 ***	0.260 ***
LCS * IT			-0.047			-0.041		
LCS * FOC				-0.082 **			-0.081 **	
LCS * M					-0.08 **			-0.103 **
LCS * IT * C						0.086 **		
LCS * FOC * C							0.044	
LCS * M * C								0.107 **
F	5.076 ***	7.072 ***	5.662 ***	5.828 ***	5.710 ***	7.388 ***	7.234 ***	7.580 ***
R	0.272	0.346	0.360	0.365	0.362	0.444	0.440	0.45
R^2	0.1	0.116	0.127	0.130	0.128	0.206	0.208	0.201
ΔR^2	0.1	0.108	0.103	0.106	0.104	0.171	0.165	0.173

Notes: "* - significant value at 0.05; ** - significant value at 0.01; *** - significant value at 0.001"
Source: Own elaboration

For the models F, G and H, the coefficient for the relation of logistics customer service, information transfer and competitiveness are significant and positive (β = 0.086; p < 0.05). Moreover, the coefficient for the relation of logistics customer service, flexible organizational culture and competitiveness is not significant (β = 0.044; p > 0.1), and similarly the coefficient for the relation of logistics customer service, effective measurements and

competitiveness are also not significant ($\beta = 0.107$; $p < 0.05$). The results provide support for hypotheses 3a and 3c, but suggest no support for hypothesis 3b. Such effects suggest that selected organizational competencies (information transfer and effective measurements) and competitiveness may have a combined impact on sustainability-focused freight transport practices on enterprises involved in the advancement of logistics customer service area. On the one hand, organizational competencies lessen the influence of logistics customer service due to their related concern. When competitiveness intensifies, enterprises should strengthen possible competencies to react promptly against the impasse and interrogation of competition. Accordingly, preeminent priority should be assigned to both logistics customer service and organizational competencies in stable sustainability-focused freight transport practices for preferable performance. From another perspective, logistics customer service and organizational competencies sometimes accomplish extra resources which may incline an adverse interaction result at a lower stage of the competition. Nevertheless, within immensely competitive conditions more resources are required to handle market challenges. Hence additional resources may also emerge in profoundly efficient effects, not cordially in loss and inefficiency internally with sustainability-focused freight transport practices.

5. Conclusions

The findings of the research suggest a primal concluding explication that sustainability-focused freight transport practices are conditioned by auxiliary logistics processes realized by the enterprise within logistics customer service, joint competencies within the organization's management, as well as peripheral circumstances of competitiveness. Analysis of the final inquiry data obtained determines the perceptivity of moderating effects of selected organizational competencies on sustainability-focused freight transport practices. Also, the study introduces an empirical endeavour to explore the three-direction interaction influence of logistics customer service, selected organizational competencies and competitiveness on sustainability-focused freight transport practices of the enterprises. The presented results of the research support the apparent framework of recognition of how selected organizational competencies and competitiveness intimately influence sustainability-focused freight transport practices of the analysed entities. Both auxiliary logistics processes realized by the enterprise within logistics customer service and joint competencies within the organization's management are exceptionally pivotal in behalf of common deficiencies of extraneous resources especially within pro-environmental and pro-social context of demands of freight transport service, particularly in an exhaustive competitive market. Irrevocably the study attempts to scrutinize the thorough effect of logistics customer service, the sufficiency of joint competencies within the organization's management and peripheral circumstances of competitiveness, as the entrance to the future severe penetration of sustainability-focused freight transport practices of the enterprises.

Presumed implications of the research for the practice notably signify the importance of the logistics customer service sphere for sustainability-focused freight transport practices of the enterprises. They directly suggest that the companies should more preferably comply with logistics customer service, specifically stimulate tight contacts with the customers' referred to freight transport services realized with the concern of the priorities of sustainable development, communicate systematically with the customers about their freight transport services and develop a solid relationship with the customers, as well as perform policy of logistics service offered and advance the standards of freight transport services realized with the concern of the priorities of sustainable development.

Moreover, the entrepreneurs should accomplish the moderating effect of selected organizational competencies as negatively significant in some measure. It implies that selected organizational competencies to some extent decline the constructive influence of logistics customer service in a consequence of coinciding or the need for extra resources. Therefore, ultimately entrepreneurs should maintain logistics customer service rather than organizational competencies in a modest competitive environment.

Subsequently, competitiveness expands a positive and decisive effect in three-direction interaction on sustainability-focused freight transport practices of the enterprises. Accordingly, crucial indication for the executive staff of the companies refers to the foundation for the development of both logistics customer service and selected organizational competencies as the attitude which may contribute to the access to the imperative resources of the partners in the supply chain. From such a perspective, the companies are able to employ the resources within sustainability-focused freight transport practices in the feedback for the market requirement.

Introducing sole limitations of the research presented in the paper, several restraints can be indicated, resulting mainly from the proposed questionnaire form and the research sample. Starting from the presented study narrowed to the aspects that do not take into account the financial performance of the enterprises, future research may additionally include economic accomplishment and efficiency of sustainability-focused freight transport practices. Within organizational competencies in the research were taken into the consideration chosen three areas, whereas the list may be extended or changed. Furthermore, the size of the research sample can be enlarged, as well as the country or region under study.

Author Contributions

Conceptualization, M.K., E.T., G.G.N. and M.C.; methodology, M.K., E.T., G.G.N. and M.C.; software, M.K.,

E.T., G.G.N. and M.C.; validation, M.K., E.T., G.G.N. and M.C.; formal analysis, M.K., E.T., G.G.N. and M.C.; investigation, M.K., E.T., G.G.N. and M.C.; resources, M.K., E.T., G.G.N. and M.C.; data curation, M.K., E.T., G.G.N. and M.C.; writing—original draft preparation, M.K., E.T., G.G.N. and M.C.; visualization, M.K., E.T., G.G.N. and M.C.; supervision, M.K., E.T., G.G.N. and M.C. All authors have read and agreed to the published version of the manuscript.

Data Availability

The data supporting our research results may be provided by the authors upon request.

Conflicts of Interest

The authors declare no conflict of interest.

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