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Improvement of Warehouse Operations Management by Considering Competencies of Human Resources

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Abstract

Clients generally require logistics services package from organizations engaged in the provision of warehouse logistics services. Successful performance of employees in organizations depend on their ability to adapt to changing environment, where personal competence is an essential factor. The article examines peculiarities of human resources impacts and its employment as a tool to develop organizations providing warehouse logistics services and ensure the quality of such services. The conducted qualitative research enabled to identify problem aspects of human resources, i.e. warehouse employees and managers, and competencies in logistics organizations

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Keywords: human resources of logistics organizations, competencies, warehousing, warehouse worker, manager

1. Introduction

The contemporary business world of logistics is boundless in terms of logistics services, products, modern technologies, high-level of knowledge, geographical zone, thus each logistics company is taking part in a competitive business battle where companies aim to establish their position and remain in business as long as possible. According to [1–5] professionalism, skills, flexibility, reliability, attitude, behaviour, reputation and

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integrity of human resources in logistics companies are particularly important from the client's point of view. Employees are integral part of service creation, provision and consumption process reflecting client expectations and service quality.

On the basis of scientific literature, the article examines peculiarities of human resources impacts and its employment as a tool to develop organizations providing warehousing services and ensure the quality of such services. Management of human resource competencies is provided as research problem analysis by defining concepts, importance and essence of human resource competencies in accordance with theoretical modelling and other methodological aspects.

2. Defining competencies of human resources and warehouse management specialists

According to the Law amending the Law on Education of the Republic of Lithuania [6], competence is defined as a capability to perform a certain activity on the basis of the entirety of acquired knowledge, abilities, skills and values. [7] summarize the existing discussions on differences among human resources and personnel management. It is argued wether the introduction of human resource management was an important shift in managing people or just another development stage in personnel management. Specialist of human resources becomes a representative of employees, who must not only focus on employee demands, but also to prepare employees for the future, take care of administrative efficiency, apply his/her knowledge in improving solutions, results and strengthen confidence in the leadership. [8] state, that internal image of the company is created by employees/human resources working in a team. According to [9], not only is a competence required in professional environment. A person plays a great range of other roles as well, such as being a parent, citizen, learner, housekeeper, etc. This type of definition is attributed to qualification theory [10–12], which states that qualification – is knowledge, abilities, skills attainable through learning process and indicates person's suitability for one or other profession. [13] cites the opinion of Le Deist and Winterton. The authors claim, that the emergence of management competence and its employment in business development is attributed to modern technological changes, demographic and organizational changes as management competence is focused on learning achievements. According to [14], the concept of competence is approached as a holistic expression of individual's potential. The author highlights individual characteristics, values and abilities to implement the accumulated potential and experience through certain activities. [15] states, that if an employee is willing to conduct his work in a qualified manner, he must be characterized by certain functional abilities, i.e., professional competencies. [14] notes that successful activities of employees in globalized organizations depend on the ability to adapt to changing environment, where competence and its development potential become a key factor. Dulewitz cit. [16] states, that 70% of competencies are common to all organizations and 30% to specific organizations, thus it is very important to select suitable model to assess competencies. Competence builds on a foundation of personal competencies or levels of qualifications and accumulated professional experience [15, 17–19] highlight that employee must be characterised by certain functional abilities, i.e., professional competencies to conduct his/her work in a qualified manner. Therefore, in this case, manager of warehouse operations must have skills and abilities in his/her professional area, i.e. competence of the warehouse manager. [20] state, that modern business world of logistics is constantly changing by providing new complex challenges to companies, thus it is important not only to draw attention to personnel/human resources and focus on today's requirements applicable to person's competencies, but also to forecast which competencies determine success in the future. According to the views that competence pertains to professional activities, it is possible to state, that general abilities are linked to professional and methodical competencies depending on the developed profession. Only then professional competencies emerge. In other words, competencies are interrelated and context-dependent. According to [14], professional competence is comprised of methodical competence and competence in a specific area. [21] defines logistics as the process of strategically managing the acquisition, movement and storage of materials, parts and finished products (and the correlated information flows) through the organization and its marketing channels in order to maximize present and future profitability by filling orders at low costs.

Modern scientific literature defines warehousing as an integral part of the logistics system that stores products at and between point of origin and point of consumption, and provides managers with information on the status, condition and disposition of items being stored [1]. Moreover, warehouses occupy a special place in the overall

chain of supply chain, which starts at materials' suppliers and finishes at distribution or customer warehouses. [22, 23] claims that interaction between warehouse processes and the supply chain has an impact on the efficiency results. The author emphasizes that each warehouse must have its own individual solutions – only individual solutions coordinated with limitations on product flows and infrastructure can guarantee efficient operations in a warehouse. Lee states that warehousing efficiency is best analysed from the perspective of the causes resulting in inefficiencies rather than from the perspective of competitive advantage [24]. D. Bazaras defines warehousing as a sequence of processes and the term "process" is described as a logical sequence of events that are time-restricted and focused on the object. Also warehousing process is defined as a sequence of separate steps [25]. Management of logistics companies' personnel and implementation of logistics processes are possible by the means of electronic data processing equipment. Such devices are installed in most of the hierarchical structures. Ioma, Bodnar claim that the main objective of the storage process is suitable product distribution [26, 27]. Assert [28] that the main logistics principles to increase warehouse efficiency are as follows: warehouse zoning and process planning; rationality – planning of the goods flows by reducing the amounts of operations; systematic approach – a warehouse and its operations must be designed in the way that incoming and outgoing characteristics of cargo flows, as well as external and internal limitations are considered; efficient use of storage capacity – maximal deployment of the warehouse space; cost-effective; standardization and unification.

According to [27], a great attention should be paid to order picking. As the levels of outgoing transactions are high, it is thus important to maintain fast and accurate order picking for the satisfaction of the needs of clients, which is already an inseparable part of business.

The European Logistics Association (ELA) recognises competences and validates logisticians' experience at 3 different levels: I. EJLog – Junior level (supervisory/operational management level); II. ESLog – Senior level (Senior management level); III. EMLog – Master level (strategic management level). The required knowledge of EJLog – Junior level (supervisory/operational management level) should encompass the following areas: general understanding of the supply chain, main managerial skills, inventory management, production planning, supply, procurement, warehouse operations management. Therefore, the required competencies are as follows:

Warehousing:

1. Assesses warehousing environment;
2. Coordinates objectives of the warehouse activities;
3. Manages the receipt, storage, packaging and shipping of orders;
4. Manages inventory control; maintains warehouse equipment;
5. Deploys IT in warehousing activities;
6. Observes warehouse operations and controls its quality;
7. Ensures that warehouse activities are in line with legal framework;
8. Contributes to plans and processes of reverse logistics development;
9. Contributes to warehousing processes and procedure development [29].

The following are the goals, objectives and competencies for warehouse worker's vocational training programme at Lithuanian Labour Exchange: upon completion of the course, students will be able to assess accounting information, register economic processes, receive and process warehouse stock products, complete diary logs into inventory; understand monetary transactions and tax accounting; learn to use computer and provide information to customers. Students can be awarded the vocational qualifying certificate after completing the vocational training programme and passing of qualification exam. Vocational qualifying certificate grants the students to work for individual, public, budgetary institutions and organizations, public and private companies [30].

To summarize, human resource competencies are linked to abilities to conduct a specific work in the area of transport/logistics. Warehouse worker or manager must have a thorough knowledge on the main warehouse processes.

3. Research on warehouse operations management by considering competencies of human resources

An expert questionnaire method was selected to carry-out the research on competencies of human resources in organizations providing warehousing services. This method enables to collect statistical data to unfold factual reality and its development trends, as well as testing the dependence of one phenomenon on other phenomena. Target

sample group was determined in order for research results to be representative. The survey contains questions with programmed answers to choose. By the means of a questionnaire, skills/competencies of warehouse workers' pertaining to selection of separate warehousing elements and management of technological process design were researched. The survey was conducted on 2016. Executives of logistics companies from Lithuania were selected as respondents. In total, 11 experts filled up the questionnaires.

4. Research of competencies that are important

Experts were asked to assess which criteria (level of importance: 1 – extremely important, 16 – not at all important) are the most important for organizations providing warehousing services. Questionnaires' data are provided in Table 1.

Table 1. Rankings table of the most important theoretical criteria of senior warehouse managers (Source: developed by the authors).

Respondent. Nr.	Factor encryption symbol (m = 16)*															
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
Expert 1	15	9	1	2	3	4	10	11	12	5	16	6	7	13	8	14
Expert 2	1	2	5	3	6	9	11	8	12	7	10	13	4	16	15	14
Expert 3	14	8	9	1	7	13	6	10	16	2	5	4	11	12	3	15
Expert 4	16	9	15	1	10	11	13	5	6	14	2	3	4	12	7	8
Expert 5	16	2	4	3	1	7	5	6	8	12	14	13	15	10	11	9
Expert 6	1	2	5	3	6	11	10	8	12	7	9	13	4	16	15	14
Expert 7	1	9	15	16	8	11	13	3	6	14	2	5	4	12	7	10
Expert 8	10	5	11	3	1	7	2	6	8	12	14	13	15	16	4	9
Expert 9	2	10	15	16	8	11	5	3	6	14	1	13	4	12	7	9
Expert 10	5	6	11	3	1	7	2	10	8	12	14	13	15	9	4	16
Expert 11	9	15	16	11	10	1	13	5	2	14	6	3	4	12	7	8
$\sum_{i=1}^{n} R_{ij}$	90	77	107	62	61	92	90	75	96	113	93	99	87	140	88	126
$\bar{R}_j = \frac{\sum_{i=1}^{n} R_{ij}}{n}$	8.18	7	9.73	5.64	5.55	8.36	8.18	6.82	8.73	10.27	8.45	9	7.91	12.73	8	11.45
$\sum_{i=1}^{n} R_{ij} - -\frac{1}{2} n(m+1)$	−3.5	−16.5	13.5	−31.5	−32.5	−1.5	−3.5	−18.5	2.5	19.5	−0.5	5.5	−6.5	46.5	−5.5	32.5
$\left[\sum_{i=1}^{n} R_{ij} - -\frac{1}{2} n(m+1)\right]^2$	12.25	272.25	182.25	992.25	1056.25	2.25	12.25	342.25	6.25	380.25	0.25	30.25	42.25	2162.25	30.25	1056.25

Criteria coding*: a) classify characteristics of demand elements; b) assess characteristics of demand and seasonality; c) determine secure levels of inventory and orders; d) examine and control inventory levels; e) apply IT systems to facilitate inventory management; f) update, analyse, assess and coordinate inventory documentation; g) observe chemical and physical properties of inventory; h) contribute to inventory supply, operations'

activities and quality control; i) contribute to eco-friendly development plans and procedures; j) assess warehousing environment; k) coordinate objectives of warehousing activities; l) manage the receipt, storage, packaging, assembling and dispatching of orders; m) manage inventory control and warehouse equipment; n) observe warehousing operations and control its quality; o) ensure that warehousing operations are in line with company's internal policies and provisions; p) contribute to warehousing processes, deployment and development of procedures.

The concordance correlation coefficient was calculated in accordance with (1) formula [31], when there are no associated ranks.

$$W = \frac{12S}{n^2\left(m^3 - m\right)} = \frac{12 \times 6580}{11^2\left(16^3 - 16\right)} 0.1599 . \quad (1)$$

Competencies that are important to senior warehouse managers, numeral $m > 7$. Then, concordance correlation coefficient is calculated on the basis of (2) formula and random variable is obtained.

$$\chi^2 = n(m-1)W = \frac{12S}{nm(m+1)} = \frac{12 \cdot 6580}{11 \times 16(16+1)} = 26.3904 . \quad (2)$$

χ^2 calculated value 26.3904 turned out higher than the critical χ^2_{kr} (equal to 24.9958) value, thus respondents' opinions are considered to be in agreement and average ranks indicate general opinion of experts. The lowest value of concordance correlation coefficient $W_{\min}$ was calculated using (3) formula which states that opinions of all 11 respondents on 16 competence criteria for senior warehouse managers are still considered to be in concordance.

$$W_{\min} = \frac{\chi^2_{v,\alpha}}{n(m-1)} = \frac{24.9958}{11(16-1)} = 0.1515 < 0.1599 . \quad (3)$$

The calculations have shown that 11 respondents' opinions on 16 competencies that are important to senior warehouse managers are in concordance. Relevance indicators Q_j of competence criteria that are important to senior warehouse managers are calculated. The obtained data are provided in Table 2.

Table 2. The most important theoretical criteria of senior warehouse managers (Rankings table) (Source: developed by the authors).

Indicator mark	Factor encryption symbol (m = 16)*																Sum
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	
qj	0.0602	0.0515	0.0715	0.0414	0.0408	0.0615	0.0602	0.0501	0.0642	0.0755	0.0622	0.0662	0.0582	0.0936	0.0588	0.0842	1
dj	0.9398	0.9485	0.9285	0.9586	0.9592	0.9385	0.9398	0.9499	0.9358	0.9245	0.9378	0.9338	0.9418	0.9064	0.9412	0.9158	15
Qj	0.0627	0.0632	0.0619	0.0639	0.0639	0.0626	0.0627	0.0633	0.0624	0.0616	0.0625	0.0623	0.0628	0.0604	0.0627	0.0916	1
Qj'	0.0648	0.0735	0.0535	0.0836	0.0842	0.0635	0.0648	0.0749	0.0608	0.0495	0.0628	0.0588	0.0668	0.0314	0.0662	0.0040	1
Factor sited	9	5	14	2	3	10	8	4	12	15	11	13	6	16	7	1	

Criteria coding*: a) Classify characteristics of demand elements; b) Assess characteristics of demand and seasonality; c) Determine secure levels of inventory and orders; d) Examine and control inventory levels; e) Apply IT systems to facilitate inventory management; f) Update, analyse, assess and coordinate inventory documentation; g) Observe chemical and physical properties of inventory; h) Contribute to inventory supply, operations' activities and quality control; i) Contribute to eco-friendly development plans and procedures; j) Assess warehousing environment; k) Coordinate objectives of warehousing activities; l) Manage the receipt, storage, packaging, assembling and dispatching of orders; m) Manage inventory control and warehouse equipment; n) Observe warehousing operations and control its quality; o) Ensure that warehousing operations are in line with company's internal policies and provisions; p) Contribute to warehousing processes, deployment and development of procedures.

Table 2 provides all competence criteria and is arranged from "extremely important" to "not at all important".

In accordance with expert opinions and calculations, the list of competencies that are important to senior warehouse managers should be arranged in the following order (5 main competencies are provided):

1. Contribute to warehousing processes, deployment and development of procedures;

2. Examine and control inventory levels;
3. Apply IT systems to facilitate inventory management;
4. Contribute to inventory supply, operations' activities and quality control;
5. Assess characteristics of demand and seasonality.

Warehouse manager. The concordance correlation coefficient was established in accordance with (1) formula, when there are no associated ranks $W = 0.2703$. Competencies that are important to warehouse managers, numeral $m > 7$. Then, concordance correlation coefficient is calculated on the basis of (2) formula and random variable is obtained. χ^2 Calculated value 44.6070 turned out higher than the critical χ^2_{kr} (equal to 24.9958) value, thus respondents' opinions are considered to be in agreement and average ranks indicate general opinion of experts. The lowest value of concordance correlation coefficient $W_{\min}$ was calculated by (3) formula which states that opinions' of all 11 respondents on 16 competence criteria for warehouse managers are still considered to be in concordance $W_{\min} = 0.1515 < 0.2703$.

The calculations have shown that respondents' opinions on 16 competencies that are important to warehouse managers are in concordance. Relevance indicators Q_j of competence criteria that are important to warehouse managers are calculated. The obtained data are provided in Table 3.

Table 3. The most important theoretical criteria of warehouse managers (Rankings table) (Source: developed by the authors).

Indicator mark	Factor encryption symbol ($m = 16$)*																Sum
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	
qj	0.0728	0.0748	0.0715	0.0445	0.0411	0.0378	0.0843	0.0620	0.0937	0.0627	0.0863	0.0405	0.0600	0.0701	0.0351	0.0627	1
dj	0.9272	0.9252	0.9285	0.9555	0.9589	0.9622	0.9157	0.9380	0.9063	0.9373	0.9137	0.9595	0.9400	0.9299	0.9649	0.9373	15
Qj	0.0618	0.0617	0.0619	0.0637	0.0639	0.0641	0.0610	0.0625	0.0604	0.0625	0.0609	0.0640	0.0627	0.0620	0.0643	0.0937	1
Qj'	0.0533	0.0512	0.0546	0.0816	0.0850	0.0883	0.0418	0.0641	0.0324	0.0634	0.0398	0.0856	0.0661	0.0560	0.0910	0.0263	1
Factor sited	12	13	11	6	4	2	14	9	15	8	16	3	7	10	1	5	

Criteria coding*: a) classify characteristics of demand elements; b) assess characteristics of demand and seasonality; c) determine secure levels of inventory and orders; d) examine and control inventory levels; e) apply IT systems to facilitate inventory management; f) update, analyse, assess and coordinate inventory documentation; g) observe chemical and physical properties of inventory; h) contribute to inventory supply, operations' activities and quality control; i) contribute to eco-friendly development plans and procedures; j) assess warehousing environment; k) coordinate objectives of warehousing activities; l) manage the receipt, storage, packaging, assembling and dispatching of orders; m) manage inventory control and warehouse equipment; n) observe warehousing operations and control its quality; o) ensure that warehousing operations are in line with company's internal policies and provisions; p) contribute to warehousing processes, deployment and development of procedures.

Table 3 provides all factors and is arranged from "extremely important" to "not at all important".

In accordance with expert opinions and calculations, the list of competencies that are important to warehouse managers should be arranged in the following order (5 main competencies are provided):

1. Ensure that warehousing operations are in line with company's internal policies and provisions;
2. Update, analyse, assess and coordinate inventory documentation;
3. Manage the receipt, storage, packaging, assembling and dispatching of orders;
4. Apply IT systems to facilitate inventory management;
5. Contribute to warehousing processes, deployment and development of procedures.

5. Competencies that are mastered in practice

Senior warehouse managers. The concordance correlation coefficient was established in accordance with (1) formula, when there are no associated ranks $W = 0.1562$. Competencies that are mastered in practice by senior warehouse managers, numeral $m > 7$. Then, concordance correlation coefficient is calculated on the basis of (2) formula and random variable is obtained. χ^2 Calculated value 25.7727 turned out higher than the critical χ^2_{kr} (equal to 24.9958) value, thus respondents' opinions are considered to be in agreement and average ranks indicate general opinion of experts. The lowest value of concordance correlation coefficient $W_{\min}$ was calculated by (3) formula

which states that opinions' of all 11 respondents on 16 competences that are mastered in practice by senior warehouse managers are still considered to be in concordance $W_{min} = 0.1515 < 0.1562$.

The calculations have shown that respondents' opinions on 16 competencies that are mastered in practice by senior warehouse managers are in concordance. Relevance indicators Q_j of competencies that are mastered by senior warehouse managers in practice are calculated. The obtained data are provided in Table 4.
Table 4 provides all factors and is arranged from "extremely important" to "not at all important".

In accordance with expert opinions and calculations, the list of competencies that are mastered by senior warehouse managers should be arranged in the following order (5 main competencies are provided):

1. Contribute to warehousing processes, deployment and development of procedures;
2. Contribute to inventory supply, operations' activities and quality control;
3. Assess warehousing environment; k) Coordinate objectives of warehousing activities;
4. Classify characteristics of demand elements;
5. Ensure that warehousing operations are in line with company's internal policies and provisions.

Table 4. The most important theoretical criteria of senior warehouse managers (Rankings table) (Source: developed by the authors).

Indicator mark	Factor encryption symbol ($m = 16$)*																Sum
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	
qj	0.0493	0.0566	0.0599	0.0763	0.0579	0.0645	0.0618	0.0336	0.0632	0.0480	0.0658	0.0743	0.0882	0.0816	0.0526	0.0664	1
dj	0.9507	0.9434	0.9401	0.9237	0.9421	0.9355	0.9382	0.9664	0.9368	0.9520	0.9342	0.9257	0.9118	0.9184	0.9474	0.9336	15
Qj	0.0634	0.0629	0.0627	0.0616	0.0628	0.0624	0.0625	0.0644	0.0625	0.0635	0.0623	0.0617	0.0608	0.0612	0.0632	0.0934	1
Qj'	0.0737	0.0664	0.0632	0.0467	0.0651	0.0586	0.0612	0.0895	0.0599	0.0750	0.0572	0.0487	0.0349	0.0414	0.0704	0.0204	1
Factor sited	4	6	8	14	7	11	9	2	10	3	12	13	16	15	5	1	

Criteria coding*: a) Classify characteristics of demand elements; b) Assess characteristics of demand and seasonality; c) Determine secure levels of inventory and orders; d) Examine and control inventory levels; e) Apply IT systems to facilitate inventory management; f) Update, analyse, assess and coordinate inventory documentation; g) Observe chemical and physical properties of inventory; h) Contribute to inventory supply, operations' activities and quality control; i) Contribute to eco-friendly development plans and procedures; j) Assess warehousing environment; k) Coordinate objectives of warehousing activities; l) Manage the receipt, storage, packaging, assembling and dispatching of orders; m) Manage inventory control and warehouse equipment; n) Observe warehousing operations and control its quality; o) Ensure that warehousing operations are in line with company's internal policies and provisions; p) Contribute to warehousing processes, deployment and development of procedures.

Warehouse managers. The concordance correlation coefficient was established in accordance with (2) formula, when there are no associated ranks $W = 0.1894$. Competencies that are mastered in practice by warehouse managers, numeral $m > 7$. Then, concordance correlation coefficient is calculated on the basis of (2) formula and random variable is obtained. χ^2 calculated value 31.2433 turned out higher than the critical χ^2_{kr} (equal to 24.9958) value, thus respondents' opinions are considered to be in agreement and average ranks indicate general opinion of experts. The lowest value of concordance correlation coefficient W_{min} was calculated by (3) formula which states that opinions' of all 11 respondents on 16 competencies that are mastered in practice by warehouse managers are still considered to be in concordance $W_{min} = 0.1515 < 0.1894$.

Calculations have shown that respondents' opinions on 16 competencies that are mastered in practice by warehouse managers are in concordance. Relevance indicators Q_j of competencies that are mastered in practice by warehouse managers are calculated. In accordance with expert opinions and calculations, the list of competencies that are mastered in practice by warehouse managers should be arranged in the following order (5 main competencies are provided):

1. Contribute to warehousing processes, deployment and development of procedures;
2. Manage inventory control and warehouse equipment;
3. Determine secure levels of inventory and orders;
4. Ensure that warehousing operations are in line with company's internal policies and provisions;
5. Observe warehousing operations and control its quality.

Existing competence that must have warehouse managers and competence which should have according to experts, are provided in Table 5.

Table 5. Provided example.

Competencies that are important			Competencies that are mastered in practice	
	Warehouse manager	Senior warehouse manager	Warehouse manager	Senior warehouse manager
1.	Ensure that warehousing operations are in line with company's internal policies and provisions.	Contribute to warehousing processes, deployment and development of procedures.	Contribute to warehousing processes, deployment and development of procedures.	Contribute to warehousing processes, deployment and development of procedures.
2.	Update, analyse, assess and coordinate inventory documentation.	Examine and control inventory levels.	Manage inventory control and warehouse equipment.	Contribute to inventory supply, operations' activities and quality control.
3.	Manage the receipt, storage, packaging, assembling and dispatching of orders.	Apply IT systems to facilitate inventory management.	Determine secure levels of inventory and orders.	Assess warehousing environment. Coordinate objectives of warehouse activities;
4.	Apply IT systems to facilitate inventory management.	Contribute to inventory supply, operations' activities and quality control.	Ensure that warehousing operations are in line with company's internal policies and provisions.	Classify characteristics of demand elements.
5.	Contribute to warehousing processes, deployment and development of procedures.	Assess characteristics of demand and seasonality.	Contribute to inventory supply, operations' activities and quality control.	Ensure that warehousing operations are in line with company's internal policies and provisions.
6.	Examine and control inventory levels.	Manage inventory control and warehouse equipment.	Coordinate objectives of warehouse activities;	Assess characteristics of demand and seasonality.
7.	Manage inventory control and warehouse equipment.	Ensure that warehousing operations are in line with company's internal policies and provisions.	Classify characteristics of demand elements.	Apply IT systems to facilitate inventory management.
8.	Assess warehousing environment.	Observe chemical and physical properties of inventory.	Assess characteristics of demand and seasonality.	Determine secure levels of inventory and orders.
9.	Contribute to inventory supply, operations' activities and quality control.	Classify characteristics of demand elements.	Examine and control inventory levels.	Observe chemical and physical properties of inventory.
10.	Observe warehousing operations and control its quality.	Update, analyse, assess and coordinate inventory documentation.	Apply IT systems to facilitate inventory management.	Contribute to eco-friendly development plans and procedures.
11.	Determine secure levels of inventory and orders.	Coordinate objectives of warehouse activities.	Update, analyse, assess and coordinate inventory documentation.	Update, analyse, assess and coordinate inventory documentation.
12.	Classify inventory in accordance with its value and economic turnover.	Contribute to eco-friendly development plans and procedures.	Observe chemical and physical properties of inventory.	Coordinate objectives of warehouse activities.
13.	Assess characteristics of demand and seasonality.	Manage the receipt, storage, packaging, assembling and dispatching of orders.	Contribute to eco-friendly development plans and procedures.	Manage the receipt, storage, packaging, assembling and dispatching of orders.
14.	Observe chemical and physical properties of inventory.	Determine secure levels of inventory and orders.	Manage the receipt, storage, packaging, assembling and dispatching of orders.	Examine and control inventory levels.
15.	Contribute to eco-friendly development plans and procedures.	Assess warehousing environment.	Contribute to inventory supply, operations' activities and quality control.	Observe warehousing operations and control its quality.
16.	Coordinate objectives of warehouse activities.	Observe warehousing operations and control its quality.	Assess warehousing environment.	Manage inventory control; maintain warehouse equipment.

In summary, the research has shown, that the most important competence of senior warehouse managers is "Contribute to warehousing processes, deployment and development of procedures". The competence "Ensure that warehousing operations are in line with company's internal policies and provisions" was ranked 1st from theoretical perspective and 4th from practical perspective. In accordance with research results assessment, it is possible to claim that competencies of warehouse managers and senior warehouse managers must be developed.

6. Conclusions

1. Modern world of logistics business is rapidly changing, thus it is important to draw attention not only to employee competence, but also to forecast of competencies will guarantee success in the future.
2. The analysis on competencies of senior warehouse managers has shown that the most important competence from theoretical and practical perspectives is "contribute to warehousing processes, deployment and development of procedures". Among 5 main competencies, "contribute to inventory supply, operations' activities and quality control" coincided on theoretical and practical levels. However, on the basis of ranking method this competence was estimated to be 3rd from theoretical perspective and 2nd from practical perspective. This suggests that these competences are of equal theoretical and practical importance.
3. The analysis on competencies of warehouse managers has shown that 2 out of 5 competencies coincided on practical and theoretical levels. However, the obtained sequence differs. For instance, "ensure that warehousing operations are in line with company's internal policies and provisions" is ranked 1st from theoretical perspective and 4th from practical perspective. The competence "Contribute to warehousing processes, deployment and development of procedures" is ranked 5th from theoretical perspective and 1st from practical perspective. This suggests that theoretical and practical considerations partially differ.
   In future research will be detail view of market and modern innovations in warehousing activities of international logistics companies demands.

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