SHAPING ALUMNI'S SENSITIVITY TO ISSUES OF SOCIAL LOGISTICS

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Abstract:
Social logistics has lately been frequently subject to research concerning management sciences. The subject matter of this paper is social sensitivity, which gave impetus for broad conversation on sources of social logistics. The authors concentrated on the need to fill the gap in competences of potential social logistics managers. Presented findings of pilot research conducted among teenagers became the vital condition to estimate competences required from young logisticians to work in socially important areas. It also gave valuable insight into relationships between different aspects of social sensitivity, which according to authors is a crucial trait of every social logistics manager.

Keywords: logistics, social logistics, social sensitivity.

1. INTRODUCTION - SUBSTANCE OF SOCIAL LOGISTICS

Logistics as a task supporting economic activity, made its presence felt in Europe after the II World War. It gave an answer to the question nagging manufacturers of how to fend off ever-fiercer competition and address ever-decreasing consumer demand. Moreover, end-customers have become ever-demanding partners, who ceased to care solely about the quality and price. They learned to appreciate other product features, such as availability, time to completion and accompanying conveniences e.g. home deliveries. Logistics had flourished in sixties and seventies of the past century. Its importance to production organisation was undisputed and acknowledged. During eighties and nineties attempts had been made to integrate management of logistics processes beyond organisation - supply chains and networks were created. Pragmatic search for economic benefits coincided with that development, in an attempt to monetise logistics approach put into practice.

Practical implementations - orchestrated by hands-on managers, who sourced their ideas from achievements of military logistics - were closely followed by theoreticians. Their task was to generalise practical experiences, mostly to prepare curricula for educating logisticians - individuals trained in streamlining material flows within so called logistics systems. The work of theoreticians has generated, apart from valuable papers many misconceptions, particularly touching on:
1. nature and essence of logistics, attempts for its original definitions,
2. potential range of applications for logistics, merit (or lack of it) behind propagating logistics to other areas of life,
3. self-sufficiency and independence of logistics from other theoretical and practical fields.
4. connection of business logistics with military logistics,
5. impact of logistics on other branches of science.

In our opinion, search for identity of logistics (Szołtysek, 2011, pp. 278–282), quite intense recently, gives evidence to overall sentiment of sincerity behind finding and distilling the very essence of this branch of science (thoroughly practical), and thereby proving the purity of logistics.

Hence, logistics have long been well-known both in research as well as military and business. Thus it have been widely acknowledged that there is military and business logistics. Those application areas are perceived as classic, and they find no argument trying to neither undermine their existence nor usefulness. However, there are applications of logistics, where the bundle of goals behind management of logistics processes is shaped by strong influence of social interests (sensitivity). Those are: urban logistics, humanitarian logistics, medical logistics (including blood donation), logistics used in sport and leisure, security, tourism and many other areas. Hence, it is necessary to distil third - aside from business logistics and military logistics - social logistics (Szołtysek & Twaróg, 2011, pp. 23–31). This issue have been gaining ground and attracting attention worldwide (Takahashi, 1988, pp. 245–251; Wei, Zhenggang & Zhang, 2009; Tenhunen, 2008, pp. 515–534; Szołtysek & Kołodziejczyk, 2009, pp. 21–24; Szołtysek, 2010, pp. 2–6; Szołtysek, 2011, pp.13–18). Note that as it is with logistics, its practical implementations can preceded theoretical generalisation. The natural consequence is small number of literature delving into the matter as well as misconceptions about the essence of social logistics.

Social Logistics (External logistics) is outside the enterprise's logistics activities in general, refers to a one beyond the scope of a community for the community for the purpose of logistics. The logistics community is often highly specialized logistics commitment by the person liable. The scope of logistics is a big social and economic field. The logistics of the process of social reproduction, the ensuing logistics activities, logistics activities of the national economy to study how the formation of services in the community, but also in the social environment for the community to run the logistics, examine the structure and operation of logistics systems, so with a comprehensive survey and extensive. In authors' opinion, presented in previous publications, social logistics *is the art of efficient management of material flows and associated, socially valuable information, in order to create particular space time values (and complementary goods) which are needed by the society and assure its well-being.*

Social logistics deals in general with mutual interdependency between material and information flows and satisfaction of social needs. Formally it explores the extent to which reported social needs are satisfied through logistics management of different flows, especially the perception of life quality. The latter distinguishes social logistics and sets it apart from other types of logistics. The scope of social logistics comprises - according to its thus defined domain - material and information flows, quality of life, social needs and measures to address them through adequately delivered material supplies, evaluation of life quality and social sensitivity. A scope that wide unequivocally requires an interdisciplinary approach. To conclude this section, let us make an assumption that efficient management of logistics processes in social logistics demands from manager to show an adequate dose of social sensitivity. Currently in Poland, logisticians are being educated to excel in military and business logistics, and consequently contents shaping social sensitivity are neglected. Thus investigating exactly how socially sensitive is today's youth became paramount to accurately evaluate usefulness of young logisticians in socially important areas.

2. SOCIAL SENSITIVITY OF YOUTH INVESTIGATED IN PILOT STUDY

Social sensitivity defined in the context of social science characterises with broad spectrum of substantive scope. The complexity of studied subject matter and of finding relevant designates related to economic science were sufficient incentives for researchers to explore properties to studied concept and the structure of qualities which give an account of discussed issues. Consequently, the objectives of research were defined as identification of the concept of social sensitivity connected to management science and determination of qualities characterising social sensitivity. The *diagnostic poll method* was employed in the research. This methodology involves predominantly gathering knowledge about opinions and views held by given community as well as intensity and development trends for particular phenomena. Subject to analysis is an intently selected group of individuals representative of the broad public, among which that phenomena takes place (Pilch, 1977, p. 126). That method is applicable to descriptive, explanatory and exploratory purposes. Fundamental relationships between investigated phenomena and processes were described using *statistical analysis*. A questionnaire was the basic research tool, and listed questions of exploratory and problem-based nature. The questions surveyed respondents on the subject of social sensitivity. The personal information section, which concluded the questionnaire, featured 6 independent variables. The poll was conducted in April and May of 2011. The researcher managed to gather a total of 421 completed questionnaires. Polled were students of Poznan School of Banking, Compus Faculty in Chorzow (199 respondents, 47.28 %), University of Economics

in Katowice (171 respondents, 40.62 %) and pupils of III High School in Complex of John Paul II Comprehensive Schools No. 3 in Ruda Slaska (51 respondents, 12.11 %). A total of 370 students and 51 pupils attending High School (12.11 %) were polled. Structure of respondents segmented by education (*figure 1):*

**Figure 1:** Education of respondents
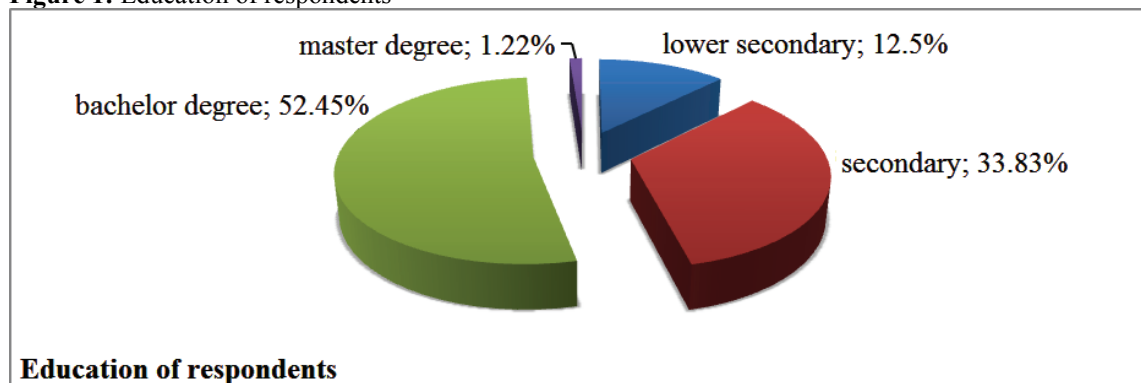
The most dominant group among respondents, were students of logistics (204 persons), management (80 persons) and human resources (23 persons). Respondents also represented: economics, finance and investments, tourism and leisure and transport. Pupils attending High School were segmented into three categories according to their specialisation: linguistics (14 persons), natural science (21 persons) and humanistic science (16 persons). Distribution of respondents by their degree course or specialisation has been illustrated in figure 2.

Figure 2: Degree course / specialisation of respondents
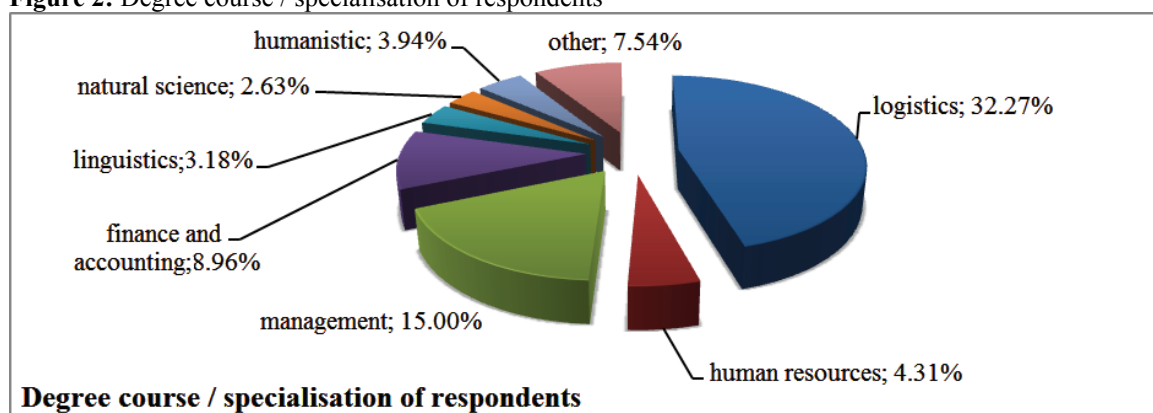
Women were the dominant group (225 respondents, 56.11 %), whereas men count of 176 amounted to 43.89 %. The majority of respondents (214 persons, 51.32 %) reside in big cities (above 70.000 citizens), and 125 respondents i.e. 29.98 % live in medium-size cities (20.000 to 70.000 citizens). 37 respondents (8.87 %) live in small cities (up to 20.000 citizens), whereas 40 persons reside in villages (9.59 %). The questionnaire did also include a question about age. There were 50 respondents aged up to 19 years, 148 persons aged between 20 and 23, 108 respondents aged between 24 and 25 and 115 students aged over 25 years of age. Distribution of respondents by age has been illustrated in *figure 3*.

Figure 3: Age of respondents
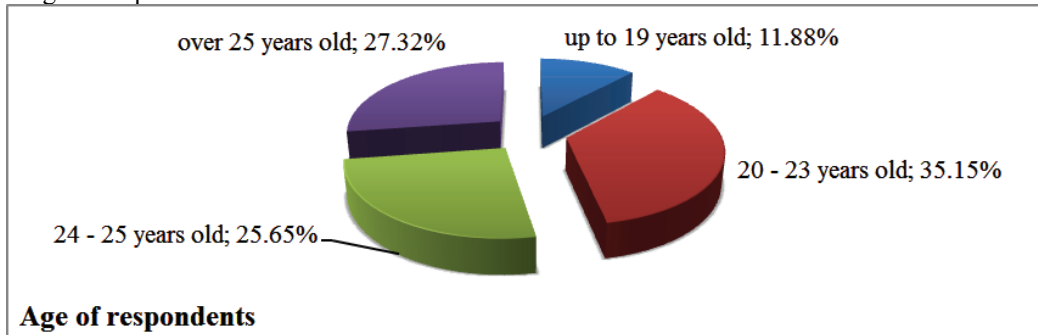
The preliminary stage of research involved capturing the relationship between variables determining designates of social sensitivity and independent variables, listed in personal information section of the questionnaire. Respondents gave their opinion on the subject matter using a five-point Likert scale, which scales the following phenomena: homelessness, unemployment, alcoholism, crime rate, incapacity and old age. Each time, mark of 1 represented the lowest intensity of given phenomena, whereas a mark of 5 indicated an exacerbated value. Values of basic descriptive statistics depicting investigated variables have been illustrated in table 1.

Table 1: Descriptive statistics of social sensitivity aspects

No. of variable	Definition of variable	Measures		
		N	$\overline{X}$	σ
X_1	Homelessness	421	1.97	0.84
X_2	Unemployment	420	3.07	0.94
X_3	Alcoholism	420	2.80	0.96
X_4	Crime rate	420	2.49	0.99
X_5	Incapacity	419	1.98	0.89
X_6	Old age	414	2.61	0.95

Analysis of presented table concludes that investigated group was most sensitive towards unemployment (X_2). The variables X_3 (alcoholism), X_6 (old age) and X_4 (crime rate) did also average high results. Lower arithmetic means were recorded for variables X_5 (incapacity) and X_1 (homelessness). Then, correlative relationships between dependent variables and aspects of social sensitivity were determined. Results of exploration have been illustrated in table 2.

Table 2: Correlative relationship between dependent variables and aspects of social sensitivity

| Independent variables / Aspects of sensitivity		Education	University /school	Degree course /class	Gender	Age	City
X_1	Homelessness	0,121*	-0.019	-0.084	0.034	0.027	0,145*
X_2	Unemployment	0,153*	-0,165*	-0,143*	0,113*	0,125*	-0.097
X_3	Alcoholism	-0.070	0.032	0.045	0.019	-0.070	-0,109*
X_4	crime rate	0.031	0.081	0.021	-0.019	0.016	0.089
X_5	Incapacity	0,110*	0.037	-0.051	0.037	0,110*	0.018
X_6	old age	0,133*	0.002	-0.006	0.019	0.067	-0.008

*Note: * correlation matters provided statistical significance s. s. $\leq 0,05$.*

Spearman's rank correlation coefficient was used to evaluate relationships between investigated variables. Correlation table gives grounds for interesting conclusions concerning

relationship between investigated aspects of social sensitivity correlating with independent variables from the questionnaire. Statistically significant correlative relationships pertain to unemployment (X_2), and exclusive of city population, concern the remaining independent variables. Statistical significance of homelessness (X_1) was confirmed by correlative relationships with independent variables of city population and education. The last independent variable, apart from age of respondents, is strongly correlated with incapacity (X_5). The only aspect of social sensitivity which is not strongly correlated with investigated dependent variables is crime rate (X_4). Important for analysis of social sensitivity in the context of planned independent variables is the fact that education is the best variable in terms of giving a reliable picture of given phenomenon. City population is one of independent variables significant from the point of view of social sensitivity characteristic.

Statistical exploration was based on cluster analysis. It basically boils down to arranging investigated variables groups relative to chosen attributes. One of cluster analysis methods, namely agglomeration was employed in the research. The hierarchy of clusters built based on the cluster analysis have been represented as dendrogram, thus enabling an objective evaluation of indicators constituting given group, regardless of scale applied to particular phenomenon. The similarity of investigated clusters is measured by the Euclidean distance i.e. the shortest distance within an n-dimensional space (n - the number of attributes) between investigated objects. Distances between clusters were estimated using the Ward's method, which boils down to minimising the total within-cluster variance, regardless of the stage of analysis. This is an effective method, however it tends to generate small clusters (Grzelak, 2006, p.181; Orłowski, 2001). Figure 4 illustrates cluster analysis of relationships describing aspects of social sensitivity relative to grouping variable - the age of respondents.

Figure 4: Cluster analysis of aspects of social sensitivity in age groups
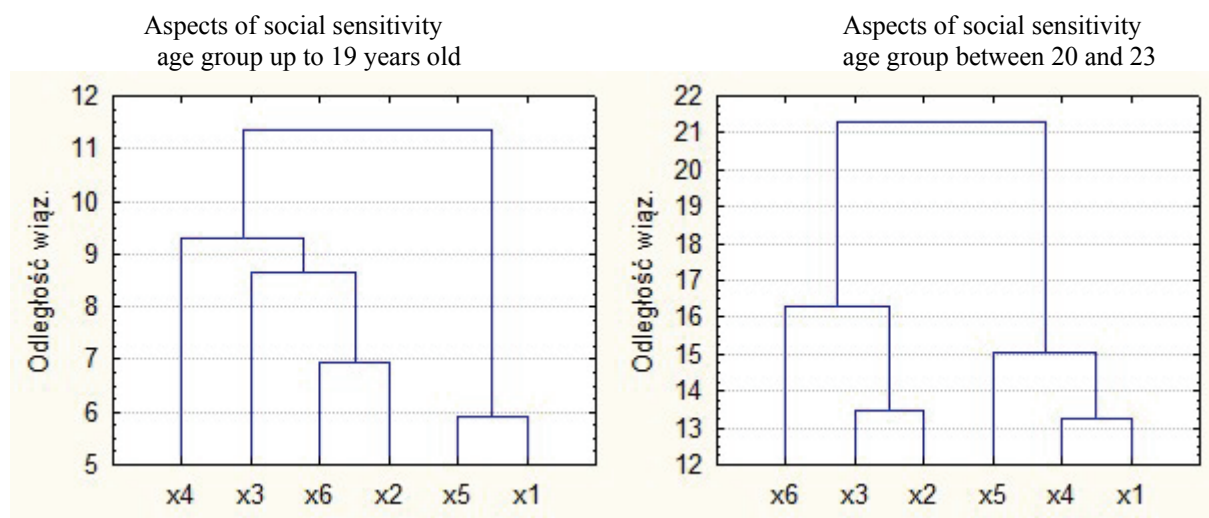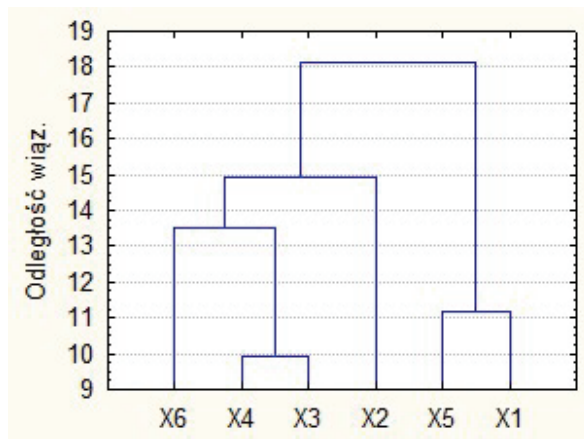
Aspects of social sensitivity
age group between 24 and 25
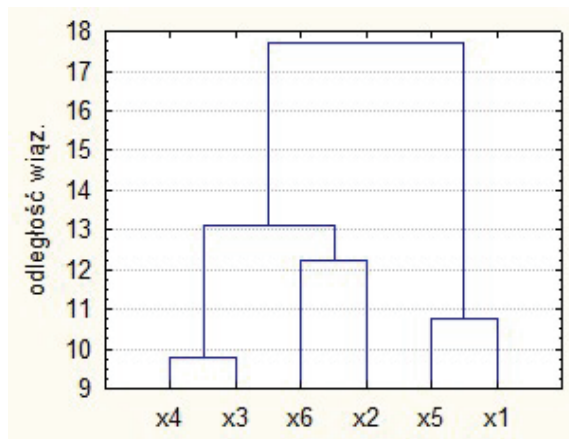
Aspects of social sensitivity
age group over 25s

Cluster assignment part of cluster analysis leads to interesting conclusions. An observation was made, that two aspects describing social sensitivity did evidently distinguish themselves across all age groups. Apart from one age range (20–23 years old), the degree of differentiation for variables X_1 (homelessness) and X_5 (incapacity) is similar. Thus, it can be deduced that said factors, members of the same cluster are significantly interconnected due to age of respondents. Homelessness and incapacity are also variables, which within particular groups have low degree of differentiation, shown by low intra-cluster distances. Certain relationship between variables X_3 (crime rate) and X_4 (alcoholism) are also evident for the age group of over 24s. Discussed interconnection between the aforementioned variables was not registered for other groups. Diverse range of opinions on variable X_2 (unemployment) gives grounds for a conservative ascertainment that age groups up to 19 years old and 24s to 25s show the same degree of differentiation for that aspect of social sensitivity as for variable X_6 (old age). Note that social sensitivity towards unemployment showed different differentiation than compared to variables X_1 (homelessness) and X_5 (incapacity). Hence in the last two cases variables influencing social sensitivity are different in character than in case of unemployment.

Some aspects of social sensitivity were subject to detailed analysis in the context of personal situation of people affected by phenomena in question. The questionnaire asked about problems experienced by unemployed, disabled and elderly. The researcher quizzed each time respondents on how significant could be the hardship affecting residents of his/her community. Cafeteria-style questions listed 5 to 9 closed items and 1 open item. Respondents could choose a maximum of three answers. Unemployment was analysed first. In respondents' view, the most common issue stumbled across by unemployed is little job offers (34.29 %) and limited access to professional qualifications in line with current labour market pull (22.14 %). In terms of numbers, similar results were obtained for two identified problems: inability to provide for dependants (children, elderly) (17.14 % answers) and limited access to child care (pre-school education and nursery schools) and eldercare (e.g. day-care home, seniors club etc.) (17.04 % answers). The lowest percentage of respondents (9.39 % answers) perceived limited mobility, particularly travelling between neighbouring cities as an issue. Other problems experienced by unemployed were seldom referred to: unwillingness to seek employment, inability to effectively seek employment and inadequate education.

Problems experienced by disabled were the second analysed aspect of social sensitivity. Most popular answers among respondents were: no disabled access (27.34 % answers) and no job offers for job seekers (18.48 % answers). Often referred to were: unadapted means of transport (16.49 % answers), and lack of social acceptance from local community (11.76 % answers). Rarely touched on were: social isolation (6.21 %), lack of organised pass-times (5.47 % answers). Equally often respondents mentioned: limited access to health care premises and mental issues from which disabled suffer (4.97 % answers). The list of answers given closes with limited access to care services (4.31 % answers). Single individuals pointed towards inability to access drugs from the National Reimbursement Drug List and underdeveloped volunteering.

Less diversified results were obtained for issues experienced by elderly. Most often respondents referred to: social isolation (solitude) (19.57 %) and inability to unassisted existence (16.30 % answers). Relatively high percentage of answers was attributed to: low social sensitivity (15.51 % answers) and limited access to 24h care facilities (13.37 %). Among less frequent recognised issues were: insufficient and incomprehensive in-home care services, both medical and non-medical care provided by competent parties (11.69 % answers) and lack of organised group activities (10.54 %). The least popular was limited access to public facilities due to poor adaptation for disabled access (5.31 % answers).

3. SOCIAL SENSITIVITY AS A QUALITY NECESSARY FOR SOCIAL LOGISTICS MANAGER

Given that logistics flows are shaped by individual qualities of a decision maker, social sensitivity should be developed with due diligence, similar when students explore technical, organisational and economic underpinning of logistics systems. The aforementioned areas are shaped by courses delivered under programmes nowadays constituting educational canon in secondary, higher and even post-graduate education. Students of universities and technical universities, according to rules governing assessment of achieved learning outcomes, gradually improve their competences in areas which predispose for managerial posts in business or (rarely) military. In the meantime, market pull for logistics managers is ever-stronger, particularly for socially savvy professionals and here, authors can see a gap in philosophy of designing intended learning outcomes. Social sensitivity as a desirable competence, could not be shaped through education. It requires adequate, sociologically and psychologically rich individual development. Hence the authors would like to make the case for bridging that gaping hole in competences of future social logistics managers.

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