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The Concept of Crisis Management by Intervention Model for SMEs

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Crisis identification in SMEs sector requires a specific attention to quantitative and qualitative criteria which describe the performance of SME and its business perspectives. The experience in company crisis solving shows that for SMEs the qualitative indicators like quality of management, personnel, finance management, competitive position and others might have much more severe effect on company's ability to perform and to avoid crisis. Therefore, the crisis identification and intervention solutions in case of SMEs require to take into account more specific factors, which would stress the qualitative characteristics of the business and company. Focusing solely on the quantitative criteria for SMEs will not allow correct identification of company's situation and could lead to a misinterpretation of possible crisis signals. To improve the crisis management for SMEs, in this paper the crisis management by intervention model is presented which define the concept of intervention in SMEs management in case of crisis. The core of the presented model is the set of hard (quantitative) and soft (qualitative) criteria which are relevant for the crisis identification in SMEs and sector, and the multidimensional assessment method, which enables the assessment of the importance of all criteria and selection of relevant criteria in every specific case. In such a way, the identification and management of SMEs crisis can be focused on the root causes of the crisis, including managerial experience and organisation issues of the company, which can be identified by a specific set of quantitative or qualitative criteria. Although the model is based on the research in German SMEs sector, but it can also be adopted in other countries, taking into account the specificities related to business management in each country.

Keywords: *Company Crisis, Crisis Management, SME, Bankruptcy, Company Crisis Forecasting*.

Introduction

Company crisis identification possibilities are investigated by various authors, who tend to design specific models or methods able to alert about the oncoming critical situation in company's performance. Most of those models or methods are oriented towards the analysis of the changes in company's financial situation, however, the ways to identify the material changes and their expected impact on company's ability to perform in the future are very diverse and based on different techniques.

When investigating the possibilities to identify crisis in SMEs sector, the specific need to address a wide spectrum of qualitative criteria appears. This specificity is discussed by Kurschus *et al.* (2015): authors argue that SMEs' financial statements and financial indicators do not necessarily represent the actual situation of the company, because the qualitative indicators like quality of management, personnel, competitive position and others might have much more severe effect on company's ability to perform, and also those indicators might significantly change the financial situation of the SME in a very short time perspective, which is typically not the case for the large companies.

Research problem. Company crisis identification problem is always a relevant target for business managers as well as researchers in economics and business areas. The pre-emptive signals of critical situations might help to intervene timely and to prevent the ending of the business resulting in loses for business owners and counterparties, like suppliers, business partners, clients. Many authors (Sousa, 2013; Skeel, 2014; Depamphilis, 2011; Wellalage, Stuart, 2012; Stoskus, Berzinskiene, *et al.*, 2007; Mathur, 2011; Peat, 2007) tried to identify the causes and consequences of crisis, but only some of them (Wellalage, Stuart, 2012; Skeel, 2014; Peat, 2007) concentrate on SMEs sector, which is recognised as a specific area in terms of crisis identification and management.

The specificity of SMEs crisis management is mostly related to the significant impact of qualitative factors related to the quality of management, business environment, competitiveness, shareholders' role in business and others. Kurschus *et al.* (2015) stress that SME's are usually treated as having lower competences and more specific business

management, which is closely related to limited financial resources, higher impact of external factors and limited possibilities to survive economic recessions with internal resources. For this reason, the SME's crisis management requires more detailed analysis of company's performance to identify the oncoming crisis, and this analysis is supposed to be based not only on financial criteria but also on various qualitative criteria. Being relatively small in financial and human resources terms, SMEs in a lot of cases are unable to form stable organizational structures for every business process, and, therefore, SMEs become much more dependent on the specific person or environmental factor. Though the simple organizational structure allows the flexibility of SMEs, but this also creates higher probability of company's financial crisis.

Therefore, crisis identification and intervention solutions in case of SMEs require to take into account more specific factors, which would stress the qualitative characteristics of the business and company, while the financial situation of the company must also be assessed.

Taking the above into account, the *research problem* is as follows: what set of factors is relevant in determining the crisis in SMEs, so that all important managerial, organisational, environmental and financial aspects of the company is assessed.

The solution of this problem requires the specific concept of SMEs crisis management by intervention, which would be based not only on the traditional crisis management models, but also on the practical experience in SMEs crisis management.

The object of the study is SMEs crisis management.

The objective of the study is to introduce the concept of crisis management by intervention model to be used for SMEs crisis management.

Limitations of the study. The selection of criteria for SMEs crisis identification requires a lot of experience and knowledge related to the SMEs performance and management, therefore the availability of suitable experts for the research is limited. The expertise of experts who participated in this research is concentrated in the German SMEs sector, therefore the quantification of the research results might give a different outcome in other countries. However, the aim of the research is to present the framework for the SMEs crisis management by intervention, therefore the quantitative results of the research do not impact the general framework.

SMEs Crisis Identification Criteria

Company crisis identification is a relevant topic in academic literature, where the bankruptcy probability, insolvency risk and other aspect of company crisis are analysed. The various viewpoints to bankruptcy probability models of different authors are presented in table 1. The given summary shows that different authors differently interprets the causes of company crisis and the ratios for identification of bankruptcy probability.

Chen, Yang *et al.* (2011) and Skeel (2014) suggest that the main groups of company crisis identification models are linear discriminant analysis models, logistic regression models and artificial intellect or qualitative assessment models; Rugenyte, Menciuniene *et al.* (2010) identifies classic statistical models and artificial intellect models; Rachisan, Berinde *et al.* (2014) suggest to use D. Argenti's model, which is based on the qualitative criteria; Wellalage and Stuart (2012) tend to identify company crisis using neuron networks. In the light of the variety of views, Arieshanti, Purwananto *et al.* (2013) in their study accent the need to analyse a wide spectrum of financial indicators, which allows to have a broad view on the company's financial status and its changes in the near past, and to project those changes in the future.

Table 1

The Comparison of Various Viewpoints to Company Crisis Identification Models

Author	Main ideas
Arieshanti, Purwananto, *et al.* (2013)	To make a comprehensive analysis of company's financial status it is necessary to analyze the wide spectrum of financial indicators which measures various aspects of company's financial performance.
Chen, Yang, *et al.* (2011), Skeel (2014)	Three main groups of company crisis identification models can be identified: linear discriminant analysis models, logistic regression models and artificial intellect or qualitative assessment models
Rugenyte, Menciuniene, *et al.* (2010)	Two main groups of company crisis identification models can be identified: classic statistical models and artificial intellect models
Rachisan, Berinde, *et al.* (2014)	To identify the company's crisis probability, the D. Argenti's A-model should be used which allows identifying of main aspects of company's performance: low quality of management, and inefficient reporting system, company's inability to adopt to constantly changing market situation.
Wellalage and Stuart (2012)	The high quality of company crisis probability assessment might be reach using neuron networks, which guarantees the high reliability of measurement

Taking the variety of crisis identification models and their different expected outcome, it is advisable in the analysis of company's crisis probability to use multiple crisis identification methods and models.

The performed review of models for company crisis identification and bankruptcy probability measurement allows stating that different methods and models are based both on the analysis of company's financial indicators and quantitative analysis of company's performance, considering various internal and external factors, which might impact the functioning of entire company and its separate units.

For the crisis identification in SMEs sector it is suggested to use the mix of quantitative (hard) and qualitative (soft) criteria, which provides the extensive overview of the company's situation taking into account not only the clearly expressed (quantified) financial information, but also the less definite (soft) qualitative

indications, which might even better reflect the performance of the company. The set of hard and soft criteria, proposed by Kurschus, et al. (2015), is formed considering the factors used by Argenti (1976), Fulmer, Moon, et al. (1984), Altman (1986; 2000), Taffler and Tisshaw (1977), Springate (1978), Zavgren (1985), Chesser (1974) Krystek (2007), Hauschildt, Grape, et al. (2006), Seranno and Gutierrez-Nieto (2013), Rachisan, Berinde, et al. (2014), Iancu and Ciubotaru (2013).

The hard criteria consist of purely financial information which might be obtained from the company's financial statements and which can be analysed using the traditional techniques, like trend analysis, peer review, threshold identification, and others. All criteria are suggested to be divided into 10 groups (table 2): adverse (negative) balance, liquidity, net sales and profit, personnel intensity, material intensity, funding ratio, debt ratio, equity ratio, yield key figures and turnover key figures.

Table 2

List of Hard Criteria

Key criterion	Criterion
H1. Adverse balance, negative balance	(a) Level of depreciation and amortization; (b) Possession of the share capital; (c) Possession of the equity capital
H2. Liquidity	(a) Cash liquidity (1st degree liquidity); (b) Current ratio (2nd degree liquidity); (c) Quick ratio (3rd degree liquidity); (d) Working capital; (e) Measures for securing liquidity
H3. Net sales and profit	(a) Decrease in profit; (b) Decrease in net sales
H4. Personnel intensity	(a) Personnel intensity – personnel costs / operational performance; (b) Personnel costs resulting from wages; (c) Personnel costs resulting from salaries; (d) Personnel costs resulting from social security expenses
H5. Material intensity	(a) Material investment; (b) Material costs; (c) Operating performance
H6. Funding ratio	(a) Funding ratio I; (b) Funding ratio II
H7. Debt ratio	(a) Debt ratio – borrowed capital / equity capital; (b) Statistical debt ratio to perform analysis of the capital structure; (c) Dynamic debt ratio
H8. Equity ratio	(a) Equity ratio; (b) Financial stability of the enterprise; (c) Financial dependence of the enterprise
H9. Yield key figures	(a) Return on equity; (b) Return on total assets; (c) Cash flow
H10. Turnover key figures	(a) Return on sales; (b) Efficiency of plant and equipment, material and manpower; (c) Turnover rate

Source: Kurschus et al. (2015).

The analysis of hard criteria for SMEs might be challenging because of the limited possibilities to identify the thresholds for the "critical" status. Different SMEs might have different business models, different market niches, different personnel competence, and this leads to a very diverse financial statement structures and finance management capabilities in similar situations. Therefore, to be able to identify SMEs crisis it is important to analyse the soft criteria (table 3), which represent the management, staff, external environment situation of the SME. In this regard the eight main groups of criteria are suggested to be used: shareholders and owners, management, personnel, customers, suppliers, competition, finances (in terms of management) and rehabilitation concept.

Table 3

List of Soft Criteria

Key criterion	Criterion
S1. Shareholders / owners	(a) Shareholders are anxious about total loss; (b) Shareholders' capability to generate capital, or a potency to involve new shareholders and to raise equity; (c) Shareholders' capability to make a valuable personal commitment
S2. Management	(a) Experience with crisis situations; (b) Lost confidence; (c) Projects development know-how; (d) Product know-how; (e) Process know-how; (f) Market know-how; (g) Capability to measure the extent of crisis; (h) Capability to communicate to all the groups of interests; (i) Interests conflicts among involved partners; (j) Value of the intangible property; (k) Availability of trustful information; (l) Communication quality; (m) Globalization problem; (n) Technical and technological changes; (o) Dependability from customers; (p) Dependability from suppliers; (q) Political developments; (r) Economic developments; (s) License risk; (t) Patent risk; (u) Development of products
S3. Personnel	(a) Confidence of the depending employees in management; (b) Anxiety about losing the workplace; (c) Anxiety about losing the remuneration; (d) Anxiety of the employees' representatives due to the reduced influence; (e) Management's capability to develop initiatives also during the crisis; (f) Human resources
S4. Customers	(a) Compromising of performance relationships tends to seek for substitution; (b) Compromising of performance relationships leads to extended payment terms; (c) A negative influence of the customers upon the competitive situation
S5. Suppliers	(a) A threat of the bad-debt losses leads to advance payments and eventually to the suspension of deliveries; (b) Product reliability and requirements of the service agreement
S6. Competition	(a) Market pressure; (b) Price pressure; (c) Product pressure
S7. Finances	(a) Third party concern about losing its security and/or collateral; (b) Concern about the value adjustment pressure; (c) Concern about the high pressure to be sold to the third party; (d) Reaction of the credit institutions; (e) Financial resources; (f) Currency related risks; (g) Investment related risks; (h) Risks of borrowing; (i) Adequate coverage of the company assets by insurance; (j) Fire outbreak, energy crises and other emergencies
S8. Rehabilitation concept	(a) Quality of the newly developed concept; (b) Optimal involvement of the remaining potential of the whole enterprise

Source: Kurschus et al. (2015).

The variety of hard and soft criteria leads to a challenge to assess the current situation of the company and to measure the changes. While for the hard criteria the traditional mathematical – statistical techniques can be used, for the soft criteria the specific quantification tools are necessary, which would enable the analysts to identify how the SME's situation has changed taking into account the soft criteria, and also to forecast the future trends of such changes.

One of the ways to analyze the mix of hard and soft criteria, suggested by Podvezko (2008) and Podvezko and Ginevicius (2008), is multidimensional assessment. Multidimensional assessment allows both multidimensional perception and a possible derivative of a relative perceived situation (Podvezko, Ginevicius, 2008). The multidimensional estimate, based on the expert view, allows a two-level result comparison. Firstly, the determined criteria and sub-criteria are given weights. Therefore, the criteria and sub-criteria can be ranked according to their relevance or impact during a crisis management in a SME. Secondly, the expert insights about the importance of the criteria allow full overview of the possibilities of the successful crisis management.

The specifics of multidimensional assessment is widely analyzed by Podvezko (2007; 2008) and Podvezko and Ginevicius (2006; 2008) with the purpose to identify the possible solutions to assess and compare various qualitative criteria-based objects. Podvezko (2008) and Podvezko and Ginevicius (2008) state that mathematically the construction of multidimensional assessment in general can be described as the matrix containing the criteria of an object, statistical data or experts' estimates:

$$R = \|r_{ij}\| \quad (1)$$

if: i = 1, …, m; j = 1, …, n

where

r_{ij} – the criteria value,

m – the number of the criteria,

n – number of the compared objects.

For the analysis of the efficiency of construction enterprises performance Podvezko and Ginevicius (2006) used seven multidimensional assessment methods:

- The sum of all criteria ranks (SR), when the final assessment index is calculated as the sum of the values of all criteria, while the values of criteria are defined as the ranks (comparing all analysed object to each other). Podvezko and Ginevicius (2006) accent that this method is the simplest and may be used only for preliminary evaluation.
- Simple additive weighting (SAW) method, when the final assessment index is calculated using the standard formula of weighted mean with the weights provided for every criterion.
- Geometric mean (GM) method, when the final assessment index is calculated using the formula of geometric mean omitting the criteria weights.
- Complex proportional evaluation method (COPRAS), when the normalization of weighted means is performed depending on maximum and minimum sums of weighted values.
- A simplified version of the proportional evaluation method (SKPM), which idea is the same as COPRAS, but the normalization formula is simplified.
- Technique for order preference by similarity to an ideal solution (TOPSIS), which is based on the principle that the object which is at the shortest distance from the best alternatives and at the longest distance from the worst option is chosen.
- A compromise approach (VIKOR), which allows the stability intervals of the criteria weights to be established.

The summarization of Podvezko (2007; 2008) and Podvezko and Ginevicius (2006; 2008) research on multidimensional assessment methods and peculiarities allows stating that multidimensional assessment requires several key stages, which create the framework to perform the comparison of several objects using complex of criteria:

- Identification of assessment criteria;
- Formation of database for assessment criteria values;
- Identification of assessment criterions' groups;
- Expert assessment of assessment criterions' significance;
- Calculation of assessment criterions' groups' significance;
- The formation of assessment index formula;
- The calculation of research objects' assessment index;
- The comparison of calculated assessment indexes.

The multidimensional assessment concept was adopted to identify the importance of each hard and soft criterion in the context of crisis identification and management for SMEs.

The Method to Assess the Importance of SMEs Crisis Identification Criteria

Based on the concept of multidimensional assessment, the preliminary analysis of hard and soft criteria for the crisis identification of SMEs is performed using experts' evaluation. To assess the importance of the criteria for SMEs crisis identification, the experts working in the companies' crisis management area were surveyed. The interviewed experts were insolvency administrators, employees of rescue divisions of credit institutions, court officials for insolvency and rescue managers. Rescue experts, dealing with crises, possess the knowledge for crisis situation assessment. Expert statements permit to estimate the importance of the individual criteria for the crisis situation assessment. They allow ranking of restructuring criteria from extremely relevant criteria down to negligible ones.

Twenty experts were surveyed asking them to assess the importance of each hard and soft criterion using the 100 per cent scale in following steps:

1. to distribute the 100 per cent amongst hard key criteria;
2. to distribute the 100 per cent amongst hard criteria in each key criterion group;
3. to repeat steps 1 and 2 for soft criteria.

The assessment conditions can be expressed as follows:

- Assessment of key criteria (KC) for each key criterion group (i):

KC_i = 1 to 100, while $\Sigma KC_i = 100$ (2)

- Assessment of each criterion (C) within the key criterion group (KCi):

C_i = 1 to 100, while $\Sigma C_i = 100$ (3)

Additionally, after the distribution of assessment, the re-calculation of each criterion value was performed taken into account the assessment of key criterion, which allowed the comparison of criteria from different key criteria groups:

$$C_{i\ adjusted} = C_i \times KC_i / 100 \quad (4)$$

This adjustment led to the weighting of each criterion, which is the primary input into the multidimensional analysis for the calculation of the assessment indexes and identification of significant criteria in specific situations.

The Assessment of SMEs Crisis Identification Criteria

The analysis of the results of the assessment of criteria are presented further. Figure 1 shows the distribution of hard key criteria assessment. Most of experts agreed that hard key criteria H2 (Liquidity) is the most significant: the average weight of this criterion is 43.8%, where the total range of weighting by different experts varies between 17 and 60%, inter-quartile (range between first quartile and third quartile, where all values are covered except the 25 % lowest and 25 % highest values.) is between 37 % and 52.3 %.

Figure 2 shows the distribution of the assessment of soft key criteria. In this case there are 4 dominant criteria: S2 (Management), S4 (Customers), S5 (Suppliers) and S7 (Finances), although the differences are not very material for all key criteria except S8 (Rehabilitation concept) which appears to be seen of the lowest significance by most of experts.

The same logic is also used to analyse the results of the assessment of each criterion for both hard and soft key criteria universes, using the adjusted weighting of criteria. Figure 3 reveals that the most important criteria (based on the interquartile and average weighting) are H6a (Funding ratio I), H9c (Cash flow) and H10a (Return on sales). However, the latter one has a very large distribution range varying between 10 % and nearly 100 %. It is worth noticing that key criteria H6 (Funding ratio), H9 (Yield key figures) and H10 (Turnover key figures) are not the most significant criteria amongst the key criteria. This leads to the presumption that although key criteria seem to be less important, but the single criterion within the key criteria might have a significant impact on the identification of crisis for SME.

Amongst the soft criteria (figure 4) the highest weightings were assigned to S1a (Shareholders are anxious about total loss), S5a (A threat of the bad-debt losses leads to advance payments and eventually to the suspension of deliveries), S6b (Price pressure), S8a (Quality of the newly developed concept) and S8b (Optimal involvement of the remaining potential of the whole enterprise).

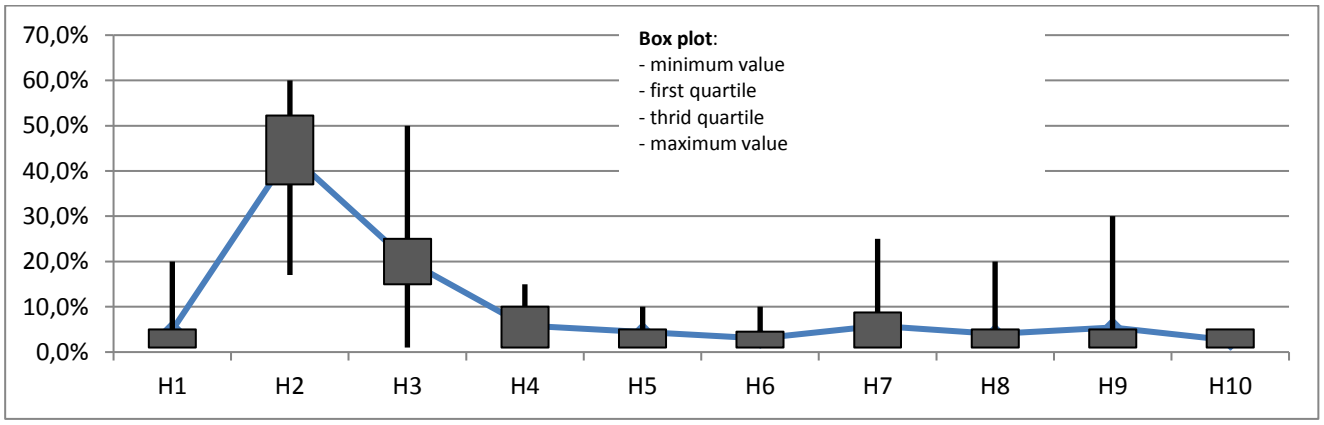

Figure 1. Distribution of Weighting of Hard Key Criteria

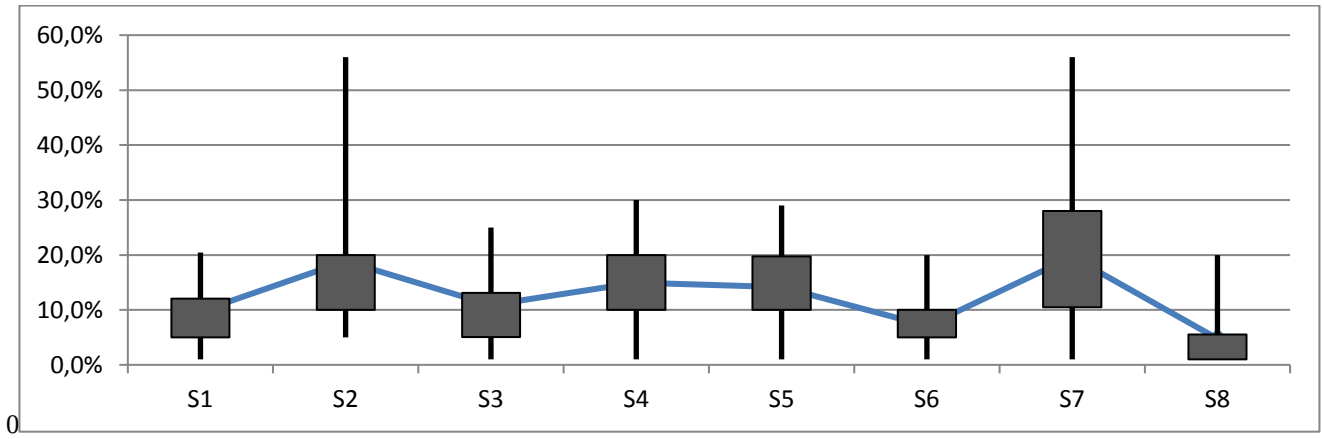

Figure 2. Distribution of Weighting of Soft Key Criteria

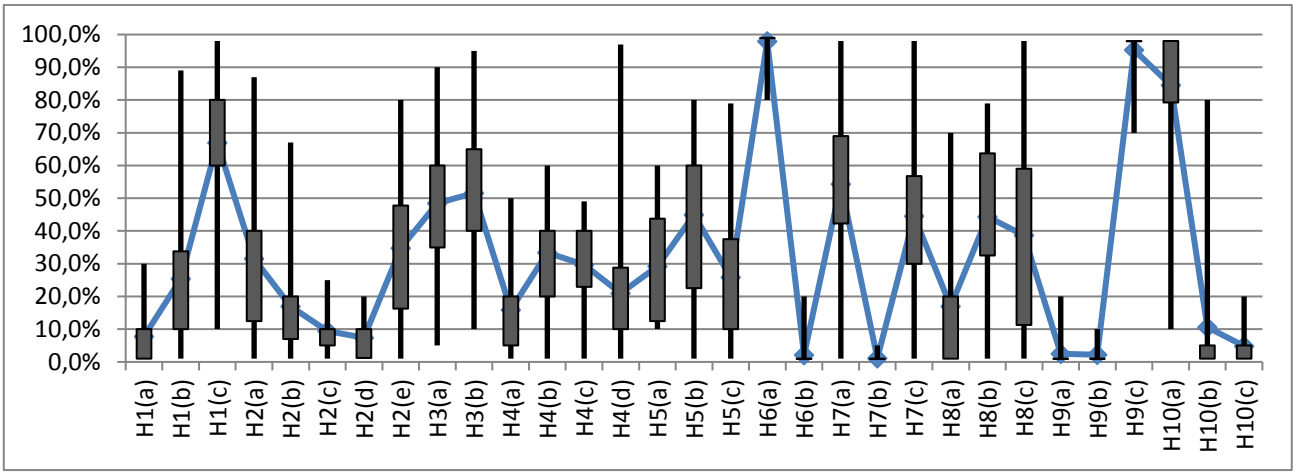

Figure 3. Distribution of Weighting of Hard Sub-Criteria

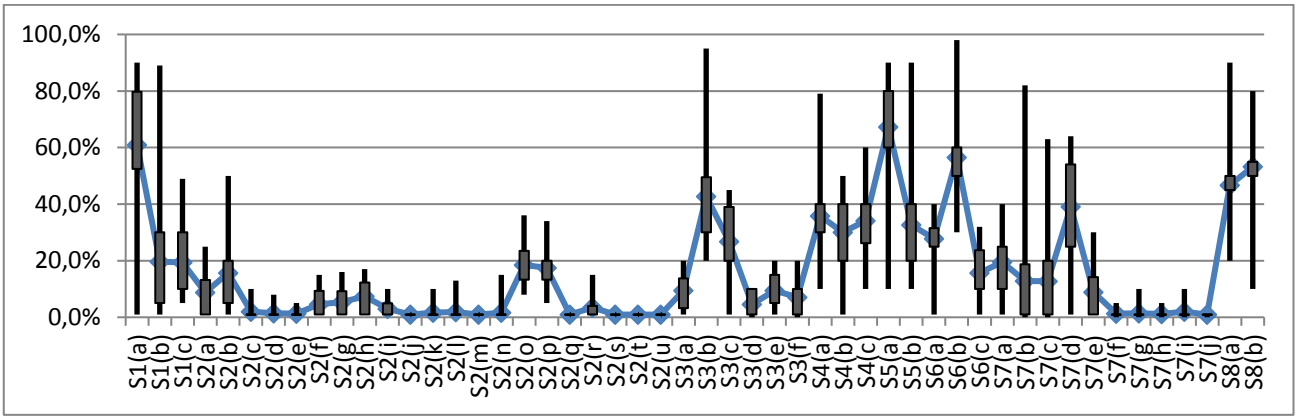

Figure 4. Distribution of Weighting of Hard Sub-Criteria

The presented overview of the experts' assessment reveals the characteristics of the initial input for the multidimensional analysis, which would result in the set of hard and soft criteria which must be taken into account when identifying crisis situation for the SME. The entire universe of hard and soft criteria might express the preliminary view on the importance of each single criterion, but the specific analysis, based on the ranking and significance cross-relations helps to reveal the subset of criteria which are really important taking into account the given characteristics of environment. Based on this concept, the model for the crisis management by intervention for SMEs is formed.

The Crisis Management by Intervention Model for SMEs

The principal structure of the crisis management by intervention model for SMEs is presented in Figure 5 and Figure 6. The model consists of two main steps:

- Step 1 – the measurement of crisis probability. In this step the measurement of crisis probability level is performed, which allows to quantify the crisis probability taking into account both hard and soft criteria and their respective weights.
- Step 2 – the assessment of crisis level. In this step the crisis probability level is compared with thresholds, which are identified using the same hard and soft criteria, based on experts' experience in SMEs sector. Subject to the crisis probability level relation to crisis level threshold, the conclusions are made: if the crisis level probability exceeds the threshold the beginning of crisis is identified; if at the later stage the crisis level probability falls below the threshold the conclusion is made that crisis is solved successfully.

The measurement of crisis probability is based on the full set of hard and soft criteria, which is assessed using the multidimensional assessment method. The multidimensional assessment would lead to the criteria weighting before the crisis of the SME, which allows identifying if the SME is facing the crisis situation, and criteria weighting after the crisis management period of the SME, which would allow identifying if the crisis is solved.

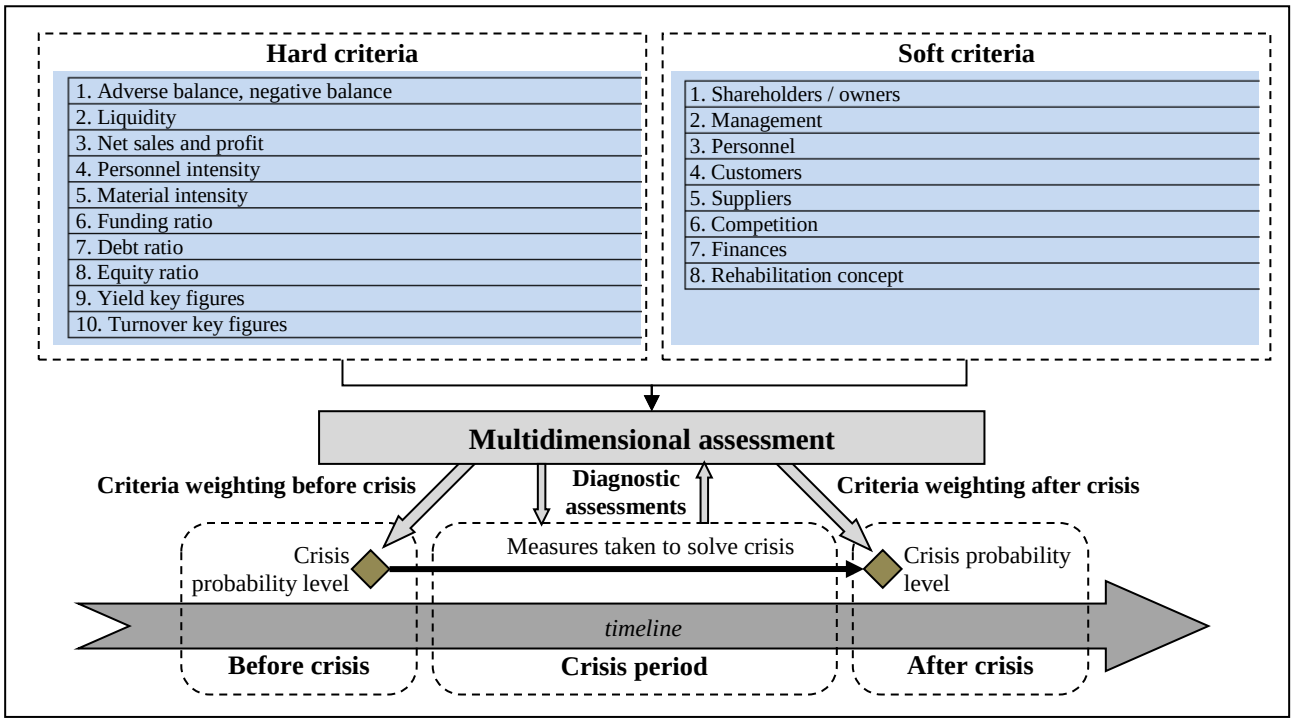

Figure 5. The Crisis Management by Intervention Model for SMEs: Step 1 – the Measurement of Crisis Probability

The assessment of the crisis situation is based on the comparison of the hard and soft criteria valuation after the multidimensional analysis with the thresholds for crisis situation is performed. This comparison leads to the second step of the crisis management by intervention model for SMEs – the identification of the crisis intensity and the selection of possible reactions.

Firstly, the crisis probability level is identified as the outcome of the multidimensional analysis, which then is compared with the crisis level threshold and the crisis situation is identified:

- if crisis probability level is higher than the crisis level threshold, the crisis situation is declared;
- if crisis probability level is lower than the crisis level threshold, the conclusion is made that SME is not in the crisis and no further actions in crisis management are needed.

Secondly, if the multidimensional assessment reveals that SME is in crisis situation, then the assessment of the further actions can be performed:

- the crisis management activities by company's management can be started if expectations of the timely recovery are positive;
- the intervention for crisis management by experts can be started if there are signs that intervention might lead to the recovery of the SME;
- no crisis management actions can be taken if it is not expected to recover the activity of the company, which would lead to the liquidation or bankruptcy of the SME.

If first or second option is chosen, the multidimensional assessment would be performed regularly for the diagnostic purposes – to identify the changes of the crisis situation. The major re-assessment of the situation would be performed after the standard period of crisis management period (e.g. 6 months is the dominant practise in Western European countries) to identify if the crisis management was successful. In this case once again the crisis probability level is identified using the multidimensional assessment method, and this crisis probability level is compared with the crisis level threshold:

- if crisis probability level is lower than the crisis level threshold, the crisis management is declared as succeeded;
- if crisis probability level is higher than the crisis level threshold, the crisis management is declared as failed.

If crisis management is declared as succeeded, this means that the SME is capable to function further without special crisis management activities. In such case, if the crisis was solved using the intervention, the intervention is cancelled and the management of the company is given back to the old or new (subject to the intervention measures taken during the crisis management) management team. If the crisis was solved without the intervention, the further actions depends solely on the company's management, which might decide to maintain the current activities further, to be sure that crisis will not return, or to re-think the strategy of the company and change the company's activity into the growth-oriented performance.

If crisis management is declared as failed, the additional assessment might be performed to decide if there are any signs that the continuation of the crisis management might still result in the positive outcome in a future. If the crisis management was performed without intervention, at this stage the intervention measures might be considered. In case the additional assessment reveals that the positive solving of the crisis is not possible, the economic existence of the company might be terminated in the form of liquidation or bankruptcy.

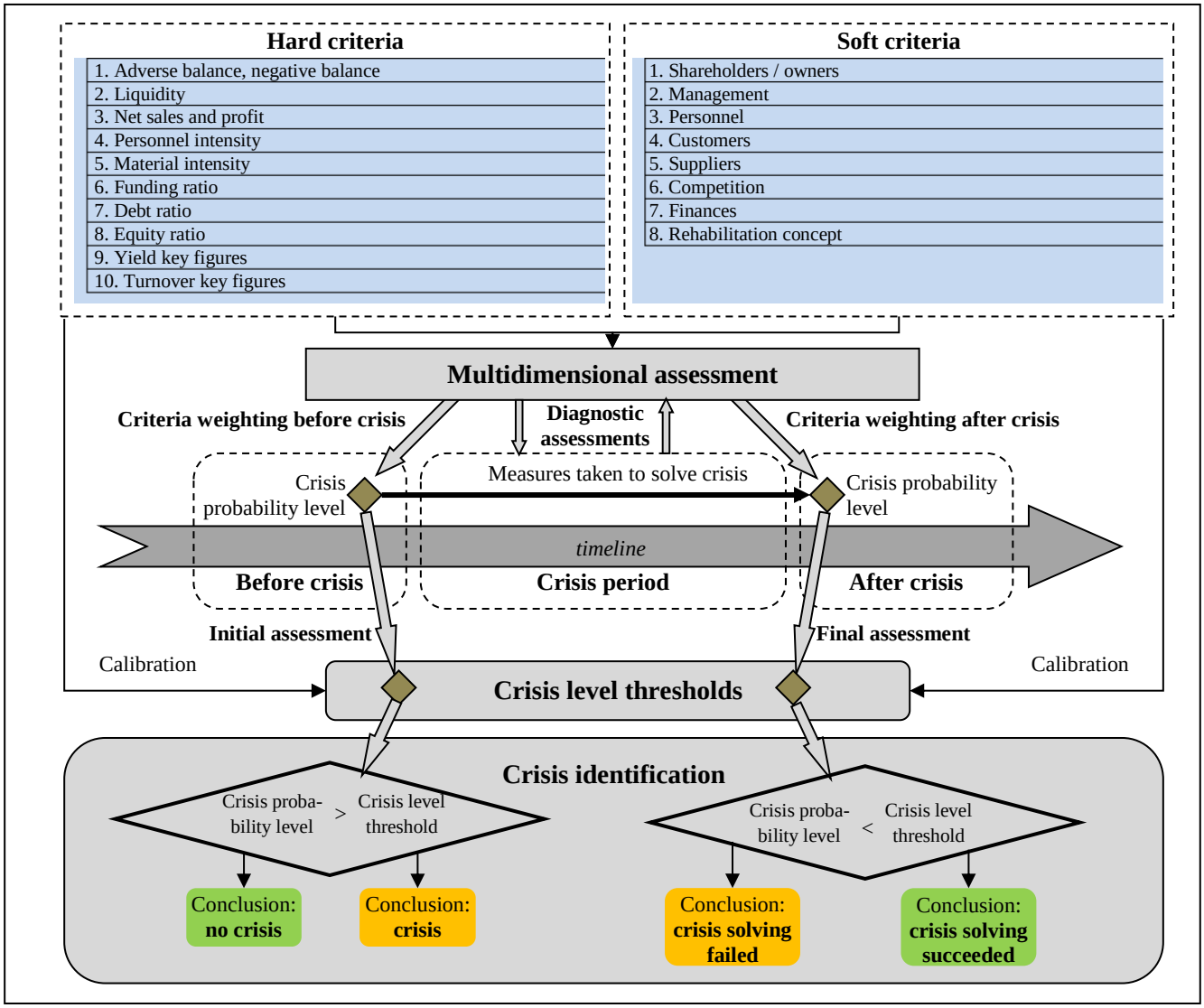

Figure 6. The Crisis Management by Intervention Model for SMEs: Step 2 – the Assessment of Crisis Level

The presented model for the crisis management by intervention for SMEs reveals the importance of the comprehensive crisis identification activities. Wellalage and Stuart (2012) and Arieshanti, Purwananto, et al. (2013) state that in general, crisis recognition is one of the primary tasks of the company managers, especially in case of SMEs. The objective conditions for its recognition are available for the management all the time and a responsible management keeps a track of economic figures of the company and monitors its capability, relationship to customers and suppliers. Furthermore, it is possible to evaluate relationship to the company employees. Hard and soft criteria used in the crisis management by intervention model for SMEs are known or available to the management of each SME. However, in single cases the above conditions may be ignored by the management and the signs of a crisis are either unrecognized or disregarded.

Therefore, a well-structured identification of the crisis, based on the comprehensive analysis of the wide spectrum of hard and soft criteria, might be a vital tool in preventing SME's crisis and recovering the company for the further long term performance. The wide spectrum of the criteria to be used for the identification of the crisis requires the reliable and verified methods to be used to assess the crisis intensity and its probability level. The multidimensional assessment method as part of the crisis management by intervention model for SMEs is a key factor for the precise identification of crisis situation as well as assessment of the ending of crisis, which helps to make a decision for the further activities regarding the SME in crisis.

The presented model is based on the research conducted in German SMEs sector, therefore it mostly reflects the SMEs situation in Germany. However, the model is constructed in the way that it can be adopted to any country, considering the specificities of the management, business organisation and business environment in each country separately. For the successful adoption of this model in Lithuanian SMEs sector it must be considered the differences in a typical size of SME in Germany and Lithuania. Lithuanian SMEs are usually smaller in size, which leads to a simpler organisation structure and faster reaction to environmental changes. On the other hand, the simpler organisation structure means the higher dependence of the company performance on one or several key

managers or employees, therefore management and personnel dimensions in the model might be much more relevant that in a typical German SME. For this reason, the successful adoption on the presented model in Lithuania would require the similar expert opinion-based research for the assessment of the relevance of each criterion.

Conclusions

1. The SMEs crisis identification requires specific expertise in SMEs management, which allows the appropriate assessment of both quantitative and qualitative set of criteria used to identify if SME is in crisis and requires intervention to restore the business continuity. Therefore, the concept of SMEs crisis management by intervention must include SMEs-specific soft criteria.
2. The model for the crisis management by intervention for SMEs reveals the importance of the comprehensive crisis identification activities. Hard and soft criteria used in the crisis management by intervention model for SMEs are known or available to the management of each SME, therefore it is important to ensure that the management follows the dynamics of those criteria and reacts in the non-standard situations.
3. The crisis management by intervention model aims to define the concept of intervention in SMEs management in case of crisis, which might be the crucial step in restoring business activities. Therefore, the assessment of crisis probability using the wide spectrum of criteria allows to identify the main causes of the crisis and to target those causes.
4. The multidimensional assessment method as part of the crisis management by intervention model for SMEs can be considered as a key element in the identification of crisis and monitoring of company's status during the intervention period.

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