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**THE IMPACT OF ORGANIZATIONAL LEARNING
AND HUMAN RESOURCE MANAGEMENT ON
ORGANIZATIONAL PERFORMANCE:
THE CASE OF AUSTRIAN BUSINESS ENTERPRISES**

Doctoral Thesis

Submitted for the Doctor's degree in Management science (Dr.sc.admin.)
Subfield Business Management

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Annotations

The purpose of this dissertation is to develop a model of the linkages between human resource management, organizational learning and organizational performance to test the assumptions and to analyze the correlations in order to substantiate or falsify the original model and to draw respective conclusions for relevant stakeholders in business enterprises as well as to give suggestions for further research in the field.

Content: Chapter one is concerned with an extensive literature review including a meta-analysis of previous research, considerations of the theoretical background and main approaches to the impact of organizational learning and human resource management on organizational performance, main approaches to the measurement of organizational performance, the derivation of the definitions of the central theoretical concepts, namely organizational learning, human resource management, organizational performance, and business enterprise, tailor-made for the use in the current study, and open questions in existing literature as starting point for the research.

In chapter two the research hypotheses are developed and the research model is conceptualized, operationalized, and visualized via the resulting theoretical scheme. Also, the development of the research methodology, design, and the selection of research methods is being undertaken, and the data gathering process via pre-study and electronic survey is described.

In chapter three the research results are presented. The data analysis takes place starting with a factor analysis and based on it the research scheme is being adapted into an evidence-based research model which is analyzed via different descriptive statistical methods, i.e. hierarchical and multiple regression analysis, and Structural Equation Modeling.

Chapter four discusses the practical implementation of research suggestions in Austrian business enterprises by way of the best-practice-example of an international business enterprise in the sector of industry.

The final part highlights, first the conclusions of the research against the original research questions and in the light of previous research, second suggestions are given for practical

implementation in business enterprises, and third suggestions are given for further research on the topic. Main conclusions include that: organizational performance cannot be seen as a holistic concept incorporating the end results of all the organization's work processes and activities directed at lasting competitive advantage but has to be divided into two separated concepts. On the one hand a dimension with variables concerning financial or economic figures and on the other hand a dimension incorporating variables regarding perceptions of non-financial figures of general competitiveness and human resource performance; the main hypothesis that organizational learning positively influences organizational performance in terms of economic/financial variables can be substantiated. The he main hypothesis that organizational learning positively influences organizational performance in terms economic and non-financial variables regarding general competitiveness and human resource performance also can be substantiated.

Human resource managers can use the findings as reference for future strategic orientation of organizations as well as derive specific implementation measures from it. A more effective use of resources as a result is then more likely. Furthermore, the research supports effective information policy and resource allocation of public bodies. A higher level of information is the base for a positive development in the field.

Keywords: Human Resource Development, Human Resource Management, Learning Organization, Organization Development, Organizational Learning, Organizational Performance, Strategic Human Resource Management.

List of Abbreviations

BSC	Balanced Scorecard
CMV	Common-Method-Variance
CSF	Critical Success Factor
EFA	Explanatory Factor Analysis
EFQM	European Foundation for Quality Management
EO	Entrepreneurial orientation
HPWS	High Performance Work Systems
HR	Human Resource
HRD	Human Resource Development
HRM	Human Resource Management
KMO	Kayser-Meyer-Olkin Measure of Sampling Adequacy
KMC	Knowledge Management Capability
KPI	Key Performance Indicator
LO	Learning Organization
MCAR Test	Missing Completely At Random Test
MBNQA	Malcolm Baldrige National Quality Awards
OC	Organizational Capabilities
OD	Organization Development
OL	Organizational Learning
OP	Organizational Performance
PCA	Principal Components Analysis
QDA	Qualitative Data Analysis
ROI	Return on Investment
RBV	Resource-based view
RandD	Research and Development
RMSEA	Root Mean Square Error of Approximation
SHRM	Strategic Human Resource Management
SMART	Strategic Measurement Analysis and Reporting Technique
SROI	Social Return on Investment
SEM	Structural Equation Modeling
TQM	Total Quality Management
VET	Vocational Education and Training

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Introduction

Topicality

Before the background of a fast changing and competitive economic environment organizational learning and human resource management are increasingly perceived as key elements in supporting lasting competitive advantage in business organizations. The requirement of corporations from a theoretical as well as practical point of view accordingly is the acquisition of knowledge about the complex interdependencies between organizational learning, human resource management on the one hand and organizational performance on the other hand, as well as the development of action alternatives for practical implementation. The research project evidences the complex connections between the aforementioned theoretical constructs and allows for drawing qualified conclusions for practical implementation.

Contemporary economies are increasingly based on knowledge and information. Accordingly, the ability of companies to develop, produce and sell products regardless of their branch of business stems from professional knowledge and know-how. This seems to be all the more true as the technological revolution is accelerating a global transformation of the competitive environment. HRM is to a growing extent asked to contribute to value-added in business enterprises which gives human resource management increasingly strategic significance (cf. Ulrich 2016). In other words, the possibility to generate profits and hence the very source of existence of every business unit is directly linked to its collective relevant knowledge and know-how. Building up, renewing and fostering of this vital resource therefore should be a major concern of any business entity, as *argumentum e contrario* the converse argument, namely resisting the need for continuous transformation and development is likely to result in a businesses' downfall. Not surprisingly therefore, recent research shows that a number of organizations have implemented organizational learning strategies and introduced various human resource management initiatives with the goal of improving organizational performance because cutting-edge science suggests a positive connection between organizational learning and human resource management on the one hand and organizational performance on the other. This research seeks to contribute to the topic by deepening and widening the understanding of the anticipated connections between human resource

management, organizational learning and organizational performance with special emphasis on business enterprises in Austria and in that sense seeks to contribute to the overall meritocracy. The author a priori argues that human resource management and organizational learning are connected to and enhance organizational performance. This notion stems first from findings in previous research which name these two theoretical constructs as major predictors and second from the authors' own practical experience in the field of organizational development.

Object and Subject

- The object of the study is organizational performance as endogen theoretical construct, where organizational performance itself is conceptualized as an approach incorporating the end results of all the organization's work processes and activities directed at lasting competitive advantage.
- The subject of the dissertation is first organizational learning and second human resource management and the relationships of these theoretical constructs with organizational performance.

Purpose

The purpose of the dissertation is testing the hypothesized interdependencies between organizational learning, human resource management and organizational performance and compilation of an evidence-based research model thereof.

Tasks

The tasks necessary to reach the purpose of this dissertation are as follows:

1. To review existing literature in the field of organizational learning respectively organizational development and human resource management and to compile a resulting meta-analysis of previous scientific publications on the topic as well as to establish the theoretical background in the field, and to identify gaps in the literature concerning the topic as well as limitations to existing research and hence to open possibilities for further own research.
2. To establish own definitions of the main theoretical concepts relevant to the study, namely organizational learning, human resource management, and organizational performance as well as to establish the presupposed linkage between organizational learning and human

resource management on one hand and organizational performance on the other with reference to previous findings.

3. To conduct a pre-study as part of method triangulation for optimal operationalization of theoretical constructs.
4. To conceptualize the theoretical scheme of the research including dimensions suggested by various previous researchers as well as extensions and adaptations made by the author and to operationalize the main theoretical constructs of organizational learning, human resource management, and organizational performance by establishing the relevant measurement items.
5. To develop and operationalize the research design with regards to sampling as well as measurement and operationalize the measurement model with regards to sampling, and to develop the research procedure leaning on proven scientific proceedings tailored for the use amongst Austrian business enterprises.
6. To evaluate construct and data quality, measuring reliability, and validity based on accepted scientific proceedings.
7. To develop the questionnaire for data gathering capturing all items formulated in the operationalization of the theoretical constructs of organizational learning, human resource management and organizational performance. To conduct the survey.
8. To evidence-based modify the original theoretical research according to the outcomes of factor respective partial factor analysis.
9. To conduct data analysis on the partial level of single variables as well as on the level of the overall model using various analytical methods, e.g. dimension reduction techniques, correlation and regression analysis, and structural equation modeling.
10. To compute research evaluation via a post-study.
11. To draw qualified conclusions from the conducted evaluation of the findings with the aim of advancing the scientific state of the art in the relevant fields of organizational learning and human resource management and to give recommendations resulting from the reached conclusions of the study for practical use in management.

Hypothesis – Research Question

- The main hypothesis (H1) of this dissertation is that organizational learning positively influences organizational performance.
- The first subhypothesis (H2) is that the influence is mutual, namely that organizational performance positively influences organizational learning.

- The second subhypothesis (H3), that human resource management positively influences organizational performance.

Methodology of the study

Existing scientific work on the subject was scrutinized and evaluated resulting in a meta-analysis of existing approaches. In addition, the author gained personal expertise by direct professional experience in the relevant field of organizational learning/human resource management during a period of over eight years where practical input refined the theoretical knowledge. The hypotheses formulated against this background were visualized in a theoretical scheme based on pre-existing research. The operationalization was realized via an electronic questionnaire using a four-point Likert scale – ordinal scaling - using 35 questions – including control questions – and sent to 2.363 recipients in 1.796 organizations in Austria. The resulting data was analyzed using a standard statistical software for social sciences. A factor analysis used for dimension reduction unearthed despite the original perception two separate dimensions of organizational performance. The following parametric tests on the respective factor scores – scaled data – delivered satisfying results with regards to the linkage of the above described theoretical constructs. Based on the results the research scheme was adapted to an evidence-based model and further analyzed by using Pearsons correlation, linear and multiple regressions, and Structural Equation Modeling. The findings of the statistical methods are cross-checked for plausibility via a post-study computed with a summative evaluation method to assesses the effectiveness of the previously introduced statistical findings.

Data gathering in the post-study is carried out as a series of semi-structured or guided interviews amongst experts in the field with academic background and practical experience

Structure of dissertation

Chapter one is concerned with an extensive literature review and consideration of the theoretical background. The chapter starts with a derivation of the definitions of the central theoretical concepts, namely organizational learning, human resource management, and organizational performance, on which the later work is based with regards to existing research in the field and tailor-made for the use in the current study. Chapter one also gives an overview of the relevant literature concerning the topic in the light of previous research including a meta-analysis of earlier works over approximately two decades. Main authors of

reference for the theoretical part include Schuler and Jackson (1987), Gupta (1993), Huselid (1995) Delaney (1996), Pérez López et al. (2005), Lin and Kuo (2007), Gomez-Mejia (2010), Kuo (2011), and Gurbuz and Mert (2011).

The following chapter two is about model and hypotheses development. In the chapter the research model is conceptualized and visualized via the resulting theoretical scheme. Based on earlier research then the measurement designs of the latent exogen (organizational learning and human resource management) as well as endogen (organizational performance) variables are operationalized and respective measurement items are selected. With regards to the theoretical scheme and the initial research question the main and sub-hypotheses are derived. Also, this chapter is concerned with the development of the research methodology and research design, and the selection of the adequate research methods. After the theoretical derivation, first special attention is being given to the goodness of the data and hence operationalization of ensuring reliability and validity of the construct as well as data. Also, possible threats to construct reliability and validity are highlighted. Second, an empirical examination of the research model takes place followed by the detailed development of the measurement model for each of the theoretical constructs (organizational learning, human resource management and organizational performance). Third, the data collection architecture and measurement scale are developed.

In chapter three the research results are presented. First of all, the construct and data quality is highlighted via missing values and reliability analysis for each of the partial models or theoretical concepts and the overall model. Subsequently, the research procedure is developed with regards to accepted previous scientific works. In the following the data analysis takes place starting with a factor analysis. Derived from it factor scores are generated and based on the findings the research scheme is being adapted into an evidence-based research model. Based on which correlation, linear and multiple regression analyses are computed and the respective findings presented and further analyses are done using Structural Equation Modeling. The findings of the statistical methods are cross-checked for plausibility via a post-study computed with a summative evaluation method to assesses the effectiveness of the previously introduced statistical findings.

Within the research roadmap the key turning point is the evidence-based imperative to modify the original research scheme grounded on the findings form the partial factor analysis which

clearly indicates the necessity to use two separate theoretical constructs in order to describe organizational performance, namely economic performance and competitive capacity. This necessity in describing organizational performance with two separate theoretical constructs also brought about the need to split the original hypotheses including organizational performance into two hypotheses each.

In chapter four the practical implementation of research suggestions in Austrian business enterprises is discussed by way of the best-practice-example of an international business enterprise in the sector of industry. The background of the comprehensive development approach is highlighted as well as the concrete practical implementation.

In the final part conclusions and suggestions, first the conclusions are highlighted against the original research questions and in the light of previous research, and second suggestions are given for practical implementation in business enterprises, as well as for further research on the topic.

Limitations of the study

1. The target group due to the aim of the research was limited to business enterprises in Austria. As the sampling was not extended to other countries the findings exclusively hold explanatory power for business enterprises in Austria and may not be generalized.
2. The chosen method of data collection was a questionnaire based on self-evaluation which implies a certain possibility of bias in the given answers by the respondents, as their answers reflect subjective ratings.
3. The variables determining the theoretical constructs used in the theoretical scheme were items derived from earlier scientific works and completed by items chosen by the author so that the findings cannot be generalized for different definitions of the theoretical constructs (human resource management, organizational learning and organizational performance) respectively different operationalization using different measurement items.
4. The sampling architecture could be seen as a certain pre-selection, as only professionals in the field of organizational learning/human resource management have been the target group for the questionnaire.
5. The study can only provide a snapshot of the situation as the data collection covered a timeframe of several months but does not include a long-term study.

Used sources

Various scientific sources were considered in the course of the completion of this dissertation which resulted in the use of around four hundred references. For human resource management, organizational learning and organizational performance the main authors of reference include Schuler and Jackson (1987), Gupta (1993), Huselid (1995) and Delaney (1996), Pérez López et al. (2005), Lin and Kuo (2007), Gomez-Mejia (2010), Kuo (2011), and Gurbuz and Mert (2011). Furthermore, various experts, e.g. from the Austrian Federal Economic Chamber and the University of Applied Sciences Wiener Neustadt. In addition, business experts in the relevant field of research were interviewed and delivered valuable input in written and oral form.

Theses to defend

1. Evidence from the research suggest that organizational performance cannot be seen as a holistic concept incorporating the end results of all the organization's work processes and activities directed at lasting competitive advantage but has to be divided into two separated concepts. As a computed factor analysis yields on the one hand a dimension with variables concerning financial or economic figures and on the other hand a dimension incorporating variables regarding perceptions of non-financial figures of general competitiveness and human resource performance. The assumption of organizational performance has to be modified according to the evidence-based research findings.
2. Grounded on the evidence-based results the main hypothesis is split in two parts. The first part of the main hypothesis that organizational learning positively influences organizational performance in terms of economic/financial variables can be substantiated by the findings. Statistical analyses suggest that organizational learning can be seen as an important predictor for items of economic organizational performance. The predictive power evidenced is the highest for the item pack of the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and attitude towards change. Evidencing therefore that active involvement of staff in the organization explains variation in e.g. turnover and profit margins. Also, the items of the factor knowledge acquisition, especially research and development as well as innovation show high impact. Furthermore, results point out that items of the factor knowledge distribution, namely knowledge sharing and information on strategies and aims positively

impact on economic/financial performance. The second part of the main hypothesis that organizational learning positively influences organizational performance in terms of non-financial variables regarding general competitiveness and human resource performance also can be substantiated. Statistical analyses suggest that organizational learning can be seen as predominant predictor for these variables of organizational performance as a large amount of predictive power in terms of variability explained can be attributed. Furthermore, the analysis reveals that especially the item pack of the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and attitude towards change have a significant impact. Furthermore, the item pack of the factor knowledge acquisition, namely concerning research and development as well as innovation have a meaningful positive impact.

3. The sub-hypothesis economic/financial organizational performance positively influences organizational learning cannot be substantiated. Outcomes of the structural equation modeling show no substantial impact. For the sub-hypothesis that items of general competitiveness and human resource performance positively influence organizational learning it can be shown that the two concepts are explaining a substantial amount of variance of each other reciprocally. The sub-hypothesis accordingly can be substantiated.
4. Human resource management does not directly impact on financial/economic organizational performance in the majority of subgroups being analyzed, but positively influences competitive capacity, i.e. items of general competitiveness and human resource performance.

Novelty for management science

1. A new six-legged high-impact approach to integrated organizational development streamlining the most influential items that evidence-based positively impact on organizational economic performance and competitive capacity has been developed.
2. A unique theoretical scheme is developed in this work in order to visualize the complex linkage between the latent constructs of human resource management, organizational learning, and organizational performance using in each case a unique set of measurement items.
3. Applying different statistical methods the original theoretical scheme is modified to a unique evidence-based research model of the connexion between organizational learning,

human resource management, economic performance, and competitive capacity taking into account the connections between the latent constructs as well as the influence of comprising test items.

4. It can be shown via partial factor analysis that the theoretically holistic construct of organizational performance has evidence-based two spheres, namely one with economic performance and competitive capacity.
5. Taking into account the evidence-based outcomes of the research the author can show that contrary to the prevailing scientific opinion economic performance does not significantly positively influence organizational learning, whereas competitive capacity is evidenced to have significant impact on organizational learning.
6. The current scientific work is the first one to examine the situation of business enterprises in Austria in the field and therefore adds valuable information about the linkage between human resource management, organizational learning and organizational performance for business enterprises in Austria.
7. Based on earlier scientific definitions the work develops new and autonomous definitions of organizational learning, human resource management, and organizational performance with a holistic approach of the theoretical constructs.

Approbation of results of research

During the course of this specific research, the author has presented in various conferences, including scientific and international conferences, to discuss the current standing of the research and to improve the research model, methods, and to include other views for a well-rounded approach to the topic. Several papers have been published and continuous practical input from business partners in the field has been taken into account.

International conferences in which the research process and findings were reported:

1. “Linking Organizational Learning and Performance”, at the “Scientific Days” at the University of Applied Sciences Kufstein Tirol (Austria), November 2013.
2. “Organizational Learning - the boost to Organizational Performance – State of Research 12/2014”, at the “Business and Social Science Research Conference” in Paris (France), December 2014.

3. “Organizational Learning - the boost to Organizational Performance – State of Research 04/2015”, at “The WEI Business and Economics Academic Conference” in Vienna (Austria), April 2015.
4. “Organizational Learning - the boost to Organizational Performance – State of Research 06/2015”, at the “International Business and Education Conference” at the Clute Institute in London (UK), June 2015.
5. “Organizational Learning and Emotional Intelligence”, at the “International Conference on Emotional Intelligence in Organizations: Development and Application of EI” in Salzburg (Austria), November 2016.
6. “Organizational Learning influencing Organizational Performance: A comprehensive inquiry”, at the “International Academic Conference on Business&Economics, Management, and Finance”, in Vienna (Austria), April 2019.

Scientific publications relating to the topic:

1. Schreder, C., 2014. Organizational Learning - the boost to Organizational Performance: An Organization Development assessment amongst Austrian business entities. *The Macrotheme Review, A multidisciplinary journal of global macro trends* 3(9), p. 160–181.
2. Schreder, C., 2015. Organizational Learning - the boost to Organizational Performance. *Journal of WEI Business and Economics (JWEIBE), No. 4, Vol. 4*, p. 11-36.
3. Schreder, Christoph. 2018. “Wertschöpfungsbeitrag von Emotionaler Intelligenz in Organisationen: Praktische Umsetzung im Bereich Talentmanagement in einem internationalen Industrieunternehmen in Salzburg”. *Emotionale Intelligenz in Organisationen – Der Schlüssel zum Wissenstransfer von angewandter Forschung in die praktische Umsetzung*, Springer-Gabler publishers ISBN 978-3-658-19126-9, p. 393-410.
4. Schreder, Christoph. 2019. “Organizational Learning influencing Organizational Performance: A comprehensive inquiry”, *Journal of WEI Business and Economics (JWEIBE), ISSN 2166-7918*.

Gratitude

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This work is dedicated in gratitude to my family, my wife Nicole and our two wonderful children Laura and Leonhard.

Salzburg, Wednesday, May 29, 2019

1 Conceptual framework of interdependencies between organizational learning, human resource management and organizational performance

1.1 Main approaches to the relationship between organizational learning, human resource management and organizational performance

Many authors before have been concerned with the question that for example Goh, Elliott and Quon (2012) pose: *“Does developing a learning organization lead to improved organizational performance and effectiveness?”* This very question and the endeavor to answer it is what the concept of organizational learning respectively the learning organization has made so appealing (cf. P. Senge 1990) and for that matter not only interesting but also important as field of study.

Despite the clear importance of learning-based distinctive competencies for the success of organizations (cf. Urbano and Yordanova 2007; Prieto and Revilla 2006; P. M. Senge 1990; Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011), still and quite surprisingly, as stated by Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan (2011), there has been little research on the process of developing this key intangible asset (cf. Ranft and Lord 2002; Zollo and Winter 2002; Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011).

Also, the impact of HRM on organizational performance is an important field of research (cf. Jones, Gareth R., and Patrick M. Wright 1992; Kleiner 1990) and referring to Gurbuz and Mert (2011) the conceptual link between HRM and organizational performance has been well established in literature (see Mark A. Huselid 1995; M. A. Huselid, Jackson and Schuler 1997; Wright, Patrick M. and Timothy M. Gardner 2003).

For the author the driving interest of the research is therefore the general idea that organizational learning and HRM positively influence the development of the respective company in terms of organizational performance in Austrian business enterprises based on a unique set of items and theoretical scheme tailored for this study.

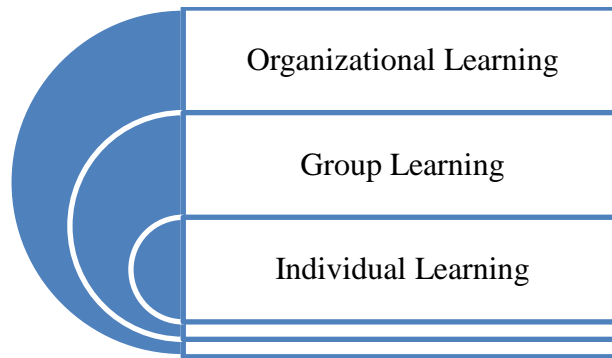
Main approaches to the impact of organizational learning and human resource management on organizational performance

The field of organizational learning, as Goh, Elliott and Quon (2012) point out, has amassed a vast amount of research and literature over the last four decades, and the proliferation of

research shows no sign of abating (Bapuji 2004; Goh, Elliott and Quon 2012). Consequently organizational learning as a concept has been and still is evolving a lot. As such an agile discipline has many branches, notions, and points of view there is little common agreement on the meaning of what and how an organization is learning (cf. Goh, Elliott and Quon 2012). For all of that one thing is broadly accepted, which is that there are two different bodies of literature evolving around and concerning the same field of interest, namely organizational learning and the learning organization (cf. Fiol and Lyles 1985a; Tsang, Eric WK 1997; Yeo 2005; Goh, Elliott and Quon 2012). Therefore in this chapter it shall be tried to frame and arrange the notion of organizational learning with regard to this work.

Framing organizational learning into the **concept of learning** it has been pointed out that learning as a concept has a long history and developed mainly in the field of psychology (cf. Wang, C. L., and P. K. Ahmed. 2001). According to Argyris (1975 p. 148 in Rivera Claudio Andrés 2010a p. 23) *“most of the people define learning too narrowly as mere problem solving, so they focus on identifying and correcting errors in the external environment. Solving problems is important. But if learning is to persist, managers and employees must also look inward.”* One possible approach would be the view that *“learning is regarded as a process and is studied from the perspective of learning style, a concept derived from the theory of cognitive style, and deals with the way in which people organize and process information for the purpose of making changes in knowledge and skills.”* (Salvato, Carlo, Per Davidsson and Anders Persson eds. 1999; Rivera Claudio Andrés 2010a). However, it was and still is perceived from various perspectives and there is rarely agreement as to what learning actually is nor how it takes place (cf. Fiol and Lyles 1985a). What organizational learning is therefore, has been defined under a variety of different points of view. A detailed account of the ‘Notions of Organizational Learning by scientific discipline’, page 189 is given in the appendix.

Learning and therefore also organizational learning is a **social construct**. As put forward by different researchers (e.g. Johnson and Hasher 1987), OL depends on features of individual memories. In fact it is argued by Dixon, N. and C. Flood (1993) that basically three incremental levels of learning can be distinguished: individual learning, group learning, and organizational learning - Figure 1 page 25 shows the concept:



Data source: adapted from Dixon, N., and C. Flood 1993

Figure 1: Levels of learning

On the level of individual learning Schein (1993) depicts communication, respectively dialogue as the nucleus of the learning process stating that dialogue is a necessary first step in learning. As such, dialogue becomes a necessary condition for effective group action and therefore organizational learning, as in dialogue the whole group is the object of learning (Schein 1993). Furthermore, the learning process would be intrinsically social and collective and on a group level would occur not only through the imitation and emulation of individuals, but also by collaboration and interaction in understanding complex problems. The knowledge generated in this way would be translated into new models of activity, routines and logic in the organization (Teece and Pisano 1994). Consequently, it was pointed out that organizational learning should happen where the individual interacts with others through the process of education and as a result of experience (Kolb, David A. 1984 in Dasgupta 2012). However, it has also been underlined that we learn from experience only when the experience is followed by immediate feedback (P. Senge 1990b). Furthermore, Pérez López et al. (2005) elaborate that learning theorists (Lave 1988; Lave and Wenger 1990) would have been rejecting learning transfer models, which isolate knowledge from practice, and would have developed a view of learning as a social construction, putting knowledge back into the contexts in which it has meaning (J. S. Brown and Duguid 1991). In that sense organizational learning is the collection of individual learning within the organization (cf. Dasgupta 2012) and can on the other hand not take place if the entire workforce in an organization is restricted from learning (Romme and Dillen 1997 in Dasgupta 2012). However, summing up individual learning does not make an organization learn. In fact, Anand, Manz, and Glick (1998) discuss systemic/organizational memory as distinct to group or individual memory and also Argyris and Schön (1978: 19) describe the role of organizational memory in such a way that “*in order*

for organizational learning to occur, learning agents' discoveries, inventions, and evaluations must be embedded in organizational memory". Along similar lines, Levitt and March (1988: 319) define organizational memory as "how organizations encode, store, and retrieve the lessons of history despite the turnover of personnel and the passage of time."

In order to understand and set into perspective the branch of organizational learning it is important to first understand the root, which is **organizational theory**. The discipline has been organized by different authors (cf. Davis and Scott 2007) and even if the views differ somewhat on certain details, the overall picture is rather coherent. Based on the introduction given by Eberl (2012) the following section will try to unveil the most important evolutionary steps. Table 1 below gives a summary.

Table 1: Main Approaches to Organizational Theory and Organizational Behaviour

Approach:	Classical Approach	Human Relations Approach	Neo-Human Relations Approach	Systems Approach	Contingency Approach	(Post-)Modern Approach
Period:	1890s-1920s	1920s-1930s	1950s-1960s	1960s-1990s	1970s-1980s	1990s-...
Name (main representatives):	Scientific Management (Taylor)	Hawthorne Experiments (Mayo)	Hierarchy of Human Needs (Maslow)	Organizations as Systems (Parsons)	Contingency Theory (Lawrence and Lorsch)	Learning Organization (Senge, "The 5th Disciplin")
	Bureaucracy (Weber)		2-Factor-Model of Motivation (Herzberg)	Open system view (Luhmann)		Knowledge-based view (Nonaka and Takeuchi)
	Administrative Science (Fayol)			Socio-technical view (Blauner)		

Data source: author's own construction

Classical Organization Theory developed in the early 20th century as consolidation of scientific management (Taylor), bureaucratic theory (Weber), and administrative approach formalized by Fayol as normative approaches with the basic focus on the purpose of the organization and its structure, e.g. planning, technical requirements, and principles of management.

In an attempt to overcome the shortcomings of classical organization theory, the most noteworthy being that it created over conformity and rigidity, thus hindering creativity, individual growth, and motivation, Human Relations Approach was introduced. As a reaction to the tough, authoritarian structure of classical theory it emphasized on genuine concern for human needs. A milestone in the development marked the so-called “Hawthorne Experiments”. The findings of the Hawthorne Experiment lastingly changed the notion of how to accurately evaluate the effects of management models and theories. Not last Simon, H. A. (1945) introduced the “limited rationality” model to explain the Hawthorne experiments, stressing the point that employees could respond unpredictably to managerial alterations.

In the wake of this discovery a new branch of views, namely the Neo-Human Relations Approach, evolved concerning the personal adjustment of the individual within the work organization (motivation). The central contribution, according to Eberl (2012), is the opening up of organizational theory for the effects of interpersonal interactions. As main representative Maslow (1943; 1954) elaborated on personality and motivation describing the hierarchy of needs, which arranges human needs in an hierarchical order from basic needs up to higher needs and by doing so gives implicitly advice on the underlying cause-effect-relationship of motivation. Based on this work Herzberg, Mausner, and Snyderman (1959) further developed and distinguished the topic in the two-factor theory stating that there are certain factors regarding work environment that can cause satisfaction, i.e. the so-called ‘Motivators’, while a separate set of factors can only cause dissatisfaction, i.e. the so-called ‘Hygiene factors’.

Barnard in 1939 suggested one of the first modern organizational theories when proposing organizations as a system of consciously coordinated activities, emphasizing the role of leadership for organizational performance by creating an environment of coherence of values and purpose. Systems Theory was originally proposed by the Hungarian biologist Ludwig von Bertalanffy in 1928, although it has not been applied to organizations until much later (Kast, F. E. and Rosenzweig, J. E. 1972; Scott 1981). The basic idea of the theory is that all the partitions of an organization are interlinked, and thus altering one variable impacts the whole system.

In contrast to earlier theories, where conflicts were to be avoided at any cost, Contingency Theory (cf. Lawrence: R., and Lorsch, J. W. 1969) views conflicts as inevitable but manageable consequences of the processes set to work in organizations. With his suggestion that form follows function Chandler (1962) summarized his findings that an organization naturally evolves to meet the needs of its strategy. Implicitly he postulates that organizations act in a rational, sequential, and linear manner to adapt to changes in the environment, where its effectiveness is a function of management's ability to adapt to environmental changes.

In the ongoing development of the discipline, the yet latest views are summarized under the term (Post-) Modern Approach which is putting forward alternative interpretations of rationality and addresses the role of power (cf. Eberl 2012). One of them is the concept of Learning Organizations, developed to enable organizations to remain competitive in the business environment (cf. O'Keefe 2002). This approach is at the same time one of the most influential amongst this branch and was put forward by Senge (1990b) and his colleagues, where the term labels a company that facilitates the learning of its members and continuously transforms itself and according to Senge (1990a) has five main features: systems thinking, personal mastery, mental models, shared vision and team learning. In accordance with the views of 'learning organization' organizations in the context of this work are seen as open systems interacting on multiple layers with their environment and undergoing continuous change. Consequently, the measurement of organizational learning is based on a broad approach taking into account a variety of variables.

Organizational learning as sub-discipline of organizational theory has many roots in different schools of thought partially dating back more than a century. More specific Dasgupta (2012) points out the idea that organizational learning it's processes and development can be traced back to many perspectives of management. One such root attributed to organizational learning is the so-called "action learning" process as proposed by Revans (1982). This concept uses small groups, the collection of statistical data and a group's positive emotional energies (cf. Garratt 1999). Other significant works contributing to the discussion on organizational learning are for example the double-loop learning notion as put forward by Argyris and Schön (1978), as well as the "Fifth Discipline" (P. Senge 1990) and the learning company model. Organizational learning therefore has been studied under a variety of aspects. The table 'Aspects of organizational learning', page 190 tries to give a

brief overview (cf. Dasgupta 2012: 2). According to Dasgupta (2012) there are three main reasons why the study of organizational learning has gained much momentum. Firstly, large-sized companies are in ever more need for flexible strategies, structures and systems which can respond quickly to internal as well as external stimuli. Secondly, the increasingly significant influence of technological change and the caused effects on concerned companies. And last not least, thirdly, organizational learning has a powerful analytical value, as it is an dynamic and integrative concept that is able to unify various levels of analysis on: individual, group, corporate, and community aspects of organizations (M. Dodgson 1993 in Dasgupta 2012).

Providing a placement of the **learning organization** and the learning environment provided by the learning organization, following the notion of P. Senge (1990b), learning means enhancing ones capacity to take action. *“So learning organizations are organizations that are continually enhancing their capacity to create”* It has been underlined (cf. e.g. P. M. Senge 1990c) that learning organizations evolve as a result of the learning and behavior of its employees. Therefore the most decisive factor distinguishing learning organizations, as suggested by Matalay (2000), is the relationship between individual and collective learning. A learning organization, suggest Pedler, Boydell, and Burgoyne (1989), can be described as *“an organization which facilitates the learning of all its members and continually transforms itself”* and has certain characteristics, which are: cultivation of a climate of encouragement where individuals learn and develop their full potential, extending the learning culture to involve customers, suppliers, and other important stakeholders, positioning human resource strategy at the center of corporate strategy, and constantly undergoing of a process of organizational transformation. In the context of this work learning organizations are decisive concerning the learning environment.

However, learning would depend not only on investment efforts, but also on the previously accumulated knowledge or experience respectively the absorptive capacity (Pérez López et al. 2005). Where the ability to absorb new knowledge, following the argument by Balogun and Jenkins (2003) will be higher when there is already prior knowledge of a particular specialist area, making it easier to absorb new knowledge about this specialism. In the context of this work organizational learning is looked at with a focus on the in scientific theory frequently

partly overlapping concept of HRM and in that respect learning organizations as underlying framework providing for organizational learning and HRM alike.

The placement of **Human Resource Management** and its impact on organizational performance is important, as HRM is assumed to impact on organizational performance directly as well as indirectly via contributing to organizational learning, as suggested by recent research (Kuo 2011). The importance of HRM for organizational performance can hardly be overestimated in an ever more competitive economic environment, as a large part of the relevant knowledge and know-how is brought in and set to work by the very employees of the regarding company. Human resource management to enhance the knowledge and hence productivity of these 'knowledge workers' (Gates 1999; Kuo 2011) as a consequence becomes an important factor. Accordingly, in times of changes – whether from a demographic, economic or technological side – organizations have to treat HRM as a valuable asset and make an effort to use this asset in a more efficient way (cf, Tichy, N., Fombrun, C., Deyanna, M. 1982; Pfeffer 1994; Delery and Doty 1996; Khatri et al. 2006; C.-Y. Lin and Kuo 2007). Consequently, states Kuo (2011a), human resource is considered the most important asset that any company must treasure. As the postulated consequence of organizational learning sustained by ways of HRM is organizational performance, a learning organization should focus on valuing, managing, and enhancing the individual development of its employees (Scarbrough, Swan, and Preston: 1999). Regarding the two interrelationships the relevant points of influence regarding the linkage between HRM and organizational learning as well as organizational performance are, as suggested by Kuo (2011a), as follows:

Human resource management and organizational learning: Amongst others Pérez López (2005) and Kuo (2011a) point out the critical role of HRM in facilitating organizational learning when evidencing that selective hiring, strategic training and employee participation in decision-making positively affects organizational learning. Furthermore, it is widely accepted that adult learning is the basis of HRM, as it supports continuous quality and performance improvement, knowledge management, organizational learning, change management, learning organization (McLean 2006; Bhatnagar 2007; Kuo 2011).

Human resource management and organizational performance: HRM positively affects an organizations' social climate, cooperation, and shared codes and language (Collins and Smith

2006; Kuo 2011) and therefore has a major impact on a firm's productivity and facilitate the success of an organization (Jiménez-Jimenez, Valle, and Hernandez-Espallardo 2008; Kuo 2011). Also, it has been shown (P. M. Wright 2002; Kuo 2011) that the combined use of HRM activities has a greater effect on organizational performance than the sum of the individual effects of each activity.

After the deductions and delineations above it is now important to discuss the **outcomes of organizational learning**. Organizational learning means changes of specific items in an organization over time, which for example include changes in values and assumptions (Argyris and Schön 1978), skills (Fiol and Lyles 1985a), systems and structures (Levitt and March 1988), core competencies (Prahalad and Hamel 1990), organizational innovativeness and competitiveness (Nason 1994), corporate success and employee satisfaction (Bontis, Crossan and Hulland 2002). Literature on organizational learning suggests that learning orientation and organizational memory are connected to two key outcomes: organizational performance and innovativeness (Hanvanich 2006) and emphasizes synergetic effects of the human resource practices on organizational performance (Mark A. Huselid 1995; MacDuffie 1995; Patrick M. Wright et al. 2005; Gurbuz and Mert 2011). For example previous works suggest that strategic human resource management as a theoretical concept partially overlapping with organizational learning is positively related to financial and operational performance of an organization (Delaney and Huselid 1996; Becker and Huselid 1998; Khatri 2000; Gurbuz and Mert 2011). Also, the data provided by Pérez López et al. (2005) support the view that OL contributes positively both to innovation and competitiveness and to economic/financial results. Furthermore, their results show a positive relationship between innovation and competitiveness and economic/financial results.

Organizational learning is, as Dasgupta (2012) explains, an ever-evolving concept and includes all aspects that foster the respective organization to build up and sustain **competitive advantage**. The collective learning of individuals in organizations leads to organizational learning which in turn constitutes the development of (new) core competencies and hence distinctive advantages for the company (Prahalad and Hamel 1990). Accordingly it has been argued that organizational learning is a key to competitive advantage (cf. Garratt 1999, Porter 1985), as it has been found to be a key element for improving organizational performance (Brockman and Morgan 2003; Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011).

Also HRM was suggested by many to be a source of sustained competitive advantage (Begin 1991; Cappelli and Harbir Singh 1992; Jackson, Schuler and Rivero 1989; Porter 1985; Schuler 1992; Wright 1992). And as innovation, change and organizational renewal become more critical bases of competitive advantage, dynamic capabilities are also in future likely to be seen as important proprietary resources that sustain a given position (cf. Hedlund 2007). And as there is an increasing emphasis on survival of the fittest in international competitiveness, in order to stay alive, organizations have to win the international organizational learning race (cf. Hampden-Turner, 1992 cited in Bontis 1998). Moreover, Pérez López et al. (2005) state that: *In examining the sustainability of competitive advantage, (Williams 1992) found that all industries undergo substantial change, whether driven by customers, competitors or technology suppliers. This change creates continuous pressure for businesses to improve their products and services to maintain or increase their value to customers, because no customer benefit is safe from being matched or exceeded by competitors. Thus, it is no surprise that comments such as "the ability to learn faster than competitors may be the only sustainable competitive advantage" (De Geus 1988): have been frequently paraphrased by executives and scholars (Stata 1989; Nonaka 2008).* In that sense organizational learning is considered to be one of the fundamental sources of competitive advantage within the context of strategic management (cf. Pérez López et al. 2005). Researchers even argue that in volatile environments the capacity to learn faster than competitors would may be the only sustainable competitive advantage (De Geus 1988; Stata 1989) cf. (Pérez López et al. 2005). In agreement with these considerations, organizational learning, through better knowledge and understanding, facilitates behavior change that leads to improved organizational performance (Simon 1969; P. Senge 1990; Garvin 1993; Lei, Slocum and Pitts 2000; Pérez López et al. 2005). Firms that are able to learn about customers, competitors and regulators stand a better chance of sensing and acting upon events and trends in the marketplace (cf. Pérez López et al. 2005).

It can be understood that many and more variables influence organizational performance. However, in the context of this work it seems to be important to understand the main dependencies between the key concepts discussed (organizational learning, HRM and organizational performance), which seem to be complex and reciprocal and of course involve a multitude of influencing factors outside the considerate model. The notion by the author is that many factors outside the considered theoretical concepts (organizational learning and

HRM) are influencing organizational performance directly or indirectly via their interference with the independent variables of organizational learning and HRM. However, the dissertation focusses on the dependencies between the independent variables of organizational learning and HRM on the one hand and the dependent variable of organizational performance on the other.

Kuo (2011a) develops the argument that HRM is connected to organizational learning which in turn is influencing organizational performance et vice versa. In addition the direction of the mutual influence seems to be two-tailed, as put forward by Swanson and Holton (2001) the notion is namely *“that understanding factors that contribute to organizational learning and the transfer of knowledge to the workplace environment are essential to human resources management”*. As suggested before, e.g. in the research of Kuo (2011a) who evidenced an indirect influence of HRM on organizational performance via organizational learning, for all intents and purposes of this research the notion of HRM, organizational learning and organizational performance will be a systemic one where these three concepts reciprocal influence each other like interlocked gear-wheels. In this sense the alteration or movement of one gear-wheel will trigger alterations in all the other connected gear-wheels.

Furthermore it seems to be important to understand the organization of organizational learning; or at least the buildup of the partitions relevant within the scope of this work. Leaning on Gölzner (2013b; 2015) the author understands that the theoretical concepts of organizational learning and HRM have partial overlap areas, as shown in the figures below. Furthermore it is understood that both theoretical concepts on their own have partial overlaps with different related theoretical constructs (see Figure 2 on page 34).

The theoretical constructs themselves can be split up in several sub-partitions revealing their make-up by a number of relevant items. The deduced make-up of relevant items for this dissertation is evidenced in the operationalization of the theoretical scheme further below.

Nonwithstanding, the theoretical overlap in the context of this work there is a clear disambiguation of organizational learning and human resource management both in the theoretical as well as the practical measurement approach.



Data source: author's own construction

Figure 2: The delineation of Organizational Learning and Human Resource Management

First, on the one hand from a theoretical point of view, organizational learning denominates the continuous process or attitude of change in organizational collective knowledge acquisition, distribution, and interpretation aimed at enhanced problem-solving competence and capacity for implementation contributing to competitiveness of the organization as a whole. Even though organizational learning takes place via individual and group learning its concept reaches beyond and is directed at the corporate level and also involves procedures and processes (cf. Al-Laham 2016). Human resource management on the other hand is also directed at the enhancement of organizational competitiveness and based on the sum of measures taken in personnel management in different fields, e.g. leading, controlling, motivating ect. of employees.

Second, the two theoretical concepts are disambiguated also in the measurement model by a clear delineation of the factors and measurement items. Organizational learning encompasses four measurement factors (i.e. knowledge acquisition, distribution, and interpretation and improvement attitude) where the test items include questions on the individual (e.g. improvement of individual competencies), group (e.g. about attitudes towards teamwork and

knowledge-sharing), and organizational level (e.g. about internal systems and procedures). Human resource management encompasses five dimensions (i.e. staffing, appraisal, rewards and compensation, human resource development, and employee participation) with measurement items on an organizational (e.g. corporate reward policies, human resource development strategy) level. It is important to note that the measurement models of the two concepts of organizational learning and human resource management do not overlap and that there are no common test items; each test item being unique.

Meta-analysis on the impact of organizational learning and human resource management on organizational performance

During the extensive literature review the author via a meta-analysis found strong evidence among a growing diversity of research in the field over the last two decades up to the most recent research that organizational learning and HRM are indeed positively contributing to organizational performance directly or indirectly via mediating effects and found that 74.6% or a total of 53 publications support that view. Further details on the specific findings of the included works can be found in the appendix in the table Meta-analysis on research on the relationship between organizational learning and HRM, and organizational performance, page 190.

Furthermore, it seems that on the whole the postulated connection between organizational learning and/or HRM and organizational performance is very much dependent on the specific circumstances and settings of the research conducted and therefore the findings of a considerable body of research, namely 19.7% or a total of 14 publications, only partly agree. The authors evidence that organizational learning can act as a mediator by which organizational performance is influenced in a positive way (cf. Lee and Choi 2003; Hung et al. 2010; Chou 2016; Tseng and Lee 2014; Kim et al. 2017). The same mediating effect was evidenced for HRM (Kasemsap, K. 2015; Schreder 2017). The findings of other authors support a positive relationship between organizational learning and certain partial aspects of organizational performance, with stronger results for non-financial than financial performance (Goh, Elliott, and Quon 2012; Kaplan and et. al. 2014; Valmohammadi and Ahmadi 2015; Schreder 2017). Also, Wall (2005) states on the often assumed effect of HRM practices on organizational performance that methodological limitations make such a conclusion premature and further research also on the possible direction of influence is needed. A notion shared also by Weldy (2009). Furthermore, some works evidence connections between

organizational performance and theoretical constructs of intangible assets that are not directly comparable to the independent concepts of organizational learning and HRM used in this work (Galbreath and Galvin 2006; Saunila 2012).

Nonetheless, there are also research examples – 5.6% or a total of 4 publications from 71 included in the meta-analysis - that fail to evidence such a dependency. Table 2 below summarizes the findings of the meta-analysis. For organizational learning some results seem to contradict the notion that learning capability leads to higher organizational performance in terms of financial results but a significant and positive relationship to job satisfaction (Goh 2001; Goh, Elliott, and Quon 2012). Elsewhere, research finds that transfer of learning from the individual to the organization achieving organizational development is not evident (Rowland and Hall 2014). Regarding HRM, Guest et al. (2003) in a study confirm the association between HRM and performance but fail to evidence that HRM causes higher performance. Also, it was pointed out that employee competency presented no correlation with performance whereas employee satisfaction showed association with all aspects of performance perspective (Fernandes, Mills, and Fleury 2005).

With the meta-analysis above the author tries to show the development of the issue in a chronologically order. The schedule does not constitute a concluding register, but rather a compendium of works considered important and/or of interest by the author in the sense of them contributing to the state of the art understanding of the topic. Accordingly, further research is needed to clarify the postulated connection under the specific circumstances relevant for this work.

Table 2: Summary of meta-analysis of previous research on the connection between organizational learning / human resource management on organizational performance

Accordance	Number of studies	Percentage of total
Full agreement	53	74.6
Partly agreement	14	19.7
Disagreement	4	5.6
Sum	71	100.0

Data source: author’s own construction

Concerning the evaluated period during the last twenty years it is interesting to note that firstly, roughly from 2006 up to 2013 there seem to have been published exclusively works that fully agree with the above posed notion. Only in the most recent literature approximately from 2014 scientific publication are increasingly published again that differentiate the view and suggest that organizational learning/HRM only partly support organizational learning either directly or via mediating effects or even disagree with the notion.

In the mind of the author the discussion above clearly indicates the need for further research on the relationship between organizational learning, HRM and organizational performance despite many previous works in the field. This is true for at least two reasons. First, previous studies have been concentrated as a general rule on specific ramifications such as a single business sector etc., so that a comprehensive study incorporating all business sectors is needed for robust results. And second, the number of publications on the general topic remains high over a considerable number of years which indicates further need for clarification concerning the interdependencies between organizational learning, HRM and organizational performance. This notion is sustained by the fact that within the scientific body there is disagreement on the nature of the linkage and the need for further research therefore is given.

Main approaches to the measurement of organizational performance

Pérez López et al. (2005) elaborate that previous studies which underline the positive effects that organizational learning and HRM have on organizational performance differ on what they understand by performance. Previous literature generally considers financial results as organizational performance (cf. Lei, Slocum and Pitts 2000; Tippins and Sohi 2003; Pérez López et al. 2005). Although these outcomes are important, it could well be the case that more outcomes mediate the relationship with financial results. Therefore, it is important to establish what is understood by the term organizational performance in the context of this work. In order to arrive at a valid as well as viable answer it is helpful to look at what has been done in that field before.

Different authors in previous studies have applied a variety of measurements respectively models to evaluate organizational performance (see for example Pérez López et al. 2005; Wong and Wong 2007; Prajogo et al. 2007; Prajogo 2007; Moneva, Rivera-Lirio and Muñoz-Torres 2007). Organizational performance is measured through the use of performance measurement which is a metric used to quantify the efficiency or effectiveness of an activity. According to Matthews (2011) in almost every organization, performance measures are used

to assess and measure organizational effectiveness. Hence, good performance measures fulfill certain criteria which are: balanced—include both financial and nonfinancial measures; aligned to the organization's strategies; flexible—can be changed as needed; timely and accurate; simple to understand; focused on improvement. Orr (1973) organized a set of performance measures in his Input-Process-Output-Outcomes model, **Input measures** are comparably easy to quantify and gather. These measures are usually counts or numeric values. **Process measures** or productivity measures are focused on the activities that transform resources. Process measures are reflected in an analysis that will quantify the cost or time to perform a specific task or activity and are ultimately about efficiency. Process measures are typically measured either as cost per activity or as time per activity. **Output measures** are used to indicate the degree to which services are being utilized. More often than not, output measures are simply counts to indicate volume of activity.

However, as Matthews (2011) points out, key performance indicators will differ by type of organization and accordingly several organizational performance measurement tools have been developed. The different measurement approaches of organizational performance are delineated in the following section.

First, some organizations assemble a large number of performance measures and present this information in the form of a **dashboard** whereas **Key Performance Indicators (KPIs)** help an organization define and evaluate how successful it is, typically in terms of making progress toward its long-term organizational goals. **Critical Success Factor (CSF)** is the term for an element that is necessary for an organization to achieve its vision. Successful factors are those activities and capabilities that define the continuing success of an organization (cf. Daniel 1961; Rockart 1986).

Second, another set of possible measurements focuses on process improvement is **Total Quality Management (TQM)** which has brought greater focus to the importance of nonfinancial approaches and a management approach for implementing improvement activities. In particular, TQM focuses on using statistical process control methods to control and improve processes in organizations. **Six Sigma** proponents believe that if the number of defects in a process is measured these defects can be systematically eliminated.

Third, the integration of both financial and nonfinancial approaches has guided the development of quality award models for managers to assess their business excellence. These approaches are subsumed under the term Self-Assessment Award Models. The best-known models emerged in the late 1980s and early 1990s and were developed for the Malcolm Baldrige National Quality Awards (MBNQA) and the European Foundation for Quality Management (EFQM) Award. The criteria of the **MBNQA** include leadership; strategic planning; workforce focus; measurement, analysis, knowledge management; process management; business results and customer focus. These categories can also be defined by two key performance constructs of results and drivers. The **EFQM** primary provides a common language for communicating and sharing best practices among firms. The EFQM Excellence Model is based on nine criteria which reflect what is considered to be leading-edge management practices. These criteria are closely aligned to the performance constructs of drivers and results. The five criteria that are controllable by managers are called “enablers” (or drivers), and the four criteria named “results” are what an organization can achieve (cf. Matthews 2011).

Forth, another set of approaches is subsumed as the **Strategic Measurement Analysis and Reporting Technique (SMART)**. First, SMART system, also known as the Performance Pyramid, was created as a management control system to define and sustain. Secondly the **Performance Prism** which is designed to assist managers in the process of selecting the best performance measures for their organization (Neely Adams and Kennerley 2002).

Fifth, as Matthews (2011) elaborates, **holistic frameworks** as integrated and balanced approach to measurement focused on providing both financial and nonfinancial performance, became popular in the early 1990s. These approaches are using a framework that encourage a manager to gain a better understanding about what leads to organizational success and assess performance appropriately. Moore (1995) has suggested that a **strategic triangle** is an effective way to focus the attention of managers on three complex issues that must be considered before (or while) committing themselves and their organizations to a particular course of action: (1) What is the important “public value” the organization is seeking to produce? (2) What “sources of legitimacy and support” can be relied upon to authorize the organization to take action and provide the resources necessary to sustain the effort to create that value? (3) What “operational capabilities” (including new investments and innovations)

will the organization need to deliver the desired results? **Social Return on Investment (SROI)** is an outcomes-based tool that helps organizations understand and quantify three perspectives—the social effects, environmental impacts, and economic value they are creating. **The Big Picture** is a 2 x 2 matrix. The left two quadrants are “enablers” and focus on the fact that an organization needs the right direction and appropriate processes to achieve results. The right two quadrants focus on “results” and are the things that have a positive impact and ensure stakeholder satisfaction. The **Balanced Scorecard (BSC)**, developed by Robert Kaplan and David Norton, is a comprehensive framework in which the mission and strategic directions of an organization can be interpreted via an array of performance measures (Kaplan and Norton 1996a; 1996b). It was intended that the framework would give managers an all-inclusive view of the business yet allow them to focus on critical areas for improvement for strategic development purposes. As a result, it has been used mainly by businesses as a means of performance measurement and as a performance driver.

In the mind of the author and in line with the state of the art understanding of organizational performance, namely the holistic frameworks, it is most appropriate for this study to develop a broad view of a company’s state respectively development in order to measure organizational performance. Accordingly, different dimensions of organizational performance, i.e. economic and non-economic dimensions are introduced as elaborated further below.

In general, leading researchers focus on three different approaches to explain the linkage between HRM and/or organizational learning and organizational performance (Gurbuz and Mert 2011): universalistic or best-practices; fit or contingency and the resource-based view (RBV).

The first to evolve was the **universalistic or best-practice approach** which supports the view that some HRM and/or organizational learning activities are more suitable than others to sustain organizational performance and hence organizations should identify and adopt these activities (Kochan and Osterman 1994; Pfeffer 1994; Pfeffer 1998; Gurbuz and Mert 2011). The best-practice approach is very persuasive and also very appealing to practitioners to ensure they are focusing their energies and resources on the activities most likely to yield positive results. However, the approach has attracted a considerable amount of criticism on several counts. It has been pointed out that there is generally little agreement which practices

are the most important (Becker and Gerhart, 1996). First, although some practices are named by a number of authors, including human resource development, contingent pay and reward, performance management, recruitment and selection, job security, and employee voice (Boselie et al, 2005), there is considerable variety in the items that have been suggested (Boselie et al, 2001; Martin-Alcazar et al, 2005). For example, whilst Pfeffer's work attaches importance to job security, this is not included in other proposals (Marchington and Grugulis, 2000). Furthermore, those practices that are generally advocated tend to be at a very generic level. Also, the universalist approach has been criticized for being atheoretical; no underlying theory has been proposed to explain why some practices, more than others, might influence performance or how the process works (Guest, 1997; Martin-Alcazar et al, 2005). Furthermore, the best-practice approach has been criticized regarding broader societal considerations. Boxall and Purcell (2008) note that the best-practice perspective does not consider for whom the practices may be considered 'best'. Criticisms on the best-practices approach state that other organizations eventually will imitate the successful activities, making it no long-lasting source of value creation and competitive advantage (Gurbuz and Mert 2011). Also, the best-practices process might restrict organizational creativity and the ability to develop new appropriate practices (M. Porter 1996).

As a consequence to the above mentioned shortcomings the **best fit or contingency approach** was established (Delery and Doty 1996) which is based on the synergistic impact of particular HRM/organizational learning practices on organizational performance (MacDuffie 1995; Becker and Gerhart 1996). In opposition to the universalist approaches, contingency or best-fit, approaches are based on the notion that the way in which people are managed in organizations will vary according to many circumstances. Whereas the universalist perspective suggests that there is one best way of managing people, the contingency approach takes account of factors such as organizational size, location, sector, strategy and the nature of work (cf. Truss, 2012). Gurbuz and Mert (2011) point out that "*the contingency approach recognizes that particular HRM practices may enhance organizational performance when HRM practices are consistent with each other and with the firm's strategic goals*". The consistency among HRM practices represents a horizontal fit while the alignment between these practices and firm's larger strategic objectives represents a vertical fit (Baird and Meshoulam 1988; Wright 1992). Effectiveness of human resource practices is contingent on how well it is vertically and horizontally integrated, e.g. what discrete human resource policies would be most appropriate if an organization were to encourage new product

innovation (Colbert 2004). Considerable research evidence supports the contingency approach by pointing out the relationship between internally consistent human resource practices and organizational effectiveness (Huselid 1995; Delery and Doty 1996; Youndt et al. 1996; Becker and Huselid 1998; Bowen and Ostroff 2004). Nonetheless, also the contingency approach has been criticized for several reasons. First, the role of human agency needs to be taken into consideration, e.g. interpretation that takes place in the development of human resource strategies (cf. Truss 2012). Also, organizations are complex and comprise different employee groups. In some cases, these may require different HR approaches and strategies. The best-fit model does not account for these (Boxall 1991; Truss and Gratton 1994). Contingencies do not of themselves determine the approach that should be taken. It is also not clear which contextual aspects may be most important and relevant in terms of creating a 'fit' (Boxall and Purcell 2008)

The **resource-based view (RBV)** is the most recent approach and focuses on the role of organizational learning and HRM on the development of organizational competencies - as Gurbuz and Mert (2011) state – where rare, valuable, inimitable and non-substitutable resources can provide sustainable competitive advantage (Barney 1991). Consequently, practices or policies that meet these criteria can provide sustainable competitive advantage and enhance organizational performance (Lado and Wilson 1994; Patrick M. Wright, McMahan and McWilliams 1994). These kinds of activities, as Gurbuz and Mert (2011) explain, *„can ensure the inimitability of the firm’s human resources. However, to provide sustainable competitive advantages, these sources must be valuable and support competencies that add value to the organization (P. M. Wright 2001; Collins and Clark 2003). In other words, HR practices can create value when the individual practices are aligned to develop critical resources or competencies for a firm (P. M. Wright 2001).“* In this sense the RBV is a dynamic approach used in recent works (Enz 2008; Eisenhardt, Kathleen M. and Jeffrey A. Martin 2000; Teece, D. J. 1998; Teece, D. J., Pisano G. and Shuen A. 1997; Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011), which focus on explaining how distinctive competencies are created, developed, and accumulated (Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011).

The author’s notion of the linkage between organizational learning and human resource management as independent variables and organizational performance as dependent variable in the current research is developed in the theoretical scheme tailored for this study, where

organizational learning and HRM are seen as rare, valuable, inimitable, and non-substitutable resources that can provide sustainable competitive advantage and organizational performance the totality of outcomes on different levels, i.e. financial performance, general competitiveness, and human resource performance.

The author a priori argues that human resource management and organizational learning are connected to and enhance organizational performance. This notion stems first from findings in previous research which name these two theoretical constructs as major predictors (e.g. Kuo 2011; Pérez López 2005) and second from the authors' own practical experience in the field of organizational development. Further theoretical constructs such as corporate culture (cf. Sukoco 2017), leadership (cf. Ceri-Booms et al. 2017), and innovation (cf. Naranjo-Valencia et al. 2016) that also might be connected to organizational performance or in earlier research also have been found to mediate organizational performance could not be included in the research model due to limited resources of the author and because the main research interest of the author also under the aspect of a possible later practical realization in organizational development by management remains with human resource management and organizational learning.

1.2 Definition of main theoretical concepts

As with most of the nomenclature in social sciences, there is quite a wide range of definitions concerning some of the key terms related to this work. To clarify the meaning in the context of this research in the following definitions for the most essential terms or abstract concepts are deduced. These are:

- organizational learning (OL),
- human resource management (HRM),
- organizational performance (OP),
- business enterprise.

The definitions are the foundation on which the theoretical scheme and all subsequent research proceedings can be based and are consequently also important for the findings and conclusions drawn from this research, as a “*specific definition is important in minimizing measurement error created by the differing aspirations of respondents*” (March and Sutton 1997).

Definition of the theoretical concept of organizational learning in the context of the research

The concept of learning can be understood from various points of view; however, there is rarely agreement within disciplines as to what learning is and how it occurs (Fiol and Lyles 1985). Consequently different abstract concepts with now and again considerable overlap have been evolving alongside or simultaneously to each other. To better delineate the concept of organizational learning the most important terms are outlined below. These are: learning organization (LO), organization development (OD), and knowledge management (KM).

An organization that intentionally builds up and fosters strategies and structures concerning organizational learning experience have been labeled as **learning organizations**. The characteristics of the learning organization is described by Pedler et al. (1989 in Dasgupta, 2012, p. 3) as *“an organization which facilitates the learning of all its members and continually transforms itself”* and *“should consciously and intentionally devote to the facilitation of individual learning in order to continuously transform the entire organization and its context.”*

On the behalf of **organizational development** Kahn (1974) noted that *“literature reveals that much of its research is redundant and without refinement or validation, that the term “Organizational Development” itself remains scientifically undefined”*. And, according to Cummings and Worley (2008), there are a number of definitions still present. One which seems to be an appealing base for delineation in this research is: *“Organization Development is a system wide application and transfer of behavioral science knowledge to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organization effectiveness.”* (Cummings and Worley 2008)

To better comprehend the concept and the boundaries of organizational learning at this point a differentiation with **knowledge management** also is helpful, as the two parallel developed concepts originated from the vast amount of research conducted on behalf of understanding the importance of learning in organizations over the last few decades. Davenport (1994) offered the still widely quoted definition: *“Knowledge management is the process of capturing, distributing, and effectively using knowledge.”* In that sense organizational learning is referred to the changes in the state of knowledge (Lyles 1988), whereas KM is concerned with the acquisition, processing, transfer, storage, and use of knowledge (Frost 2013), as well as tries to enhance sharing and reuse of knowledge in or among organizations and can be referred to as *“organizational memories”* (cf. Kolbitsch, 2003: 8). Now, that the bordering

abstract concepts' outer borders have been delimited a definition of the central construct of interest concerning the present research, namely organizational learning, can be deduced. Table 3: Historic development of the definition of organizational learning in context with the current research on page 45 gives an assortment of previous definitions by different researcher. In the mind of the author, the comparison of definitions as well as the succession of development over time is crucial to an up to date understanding of the theoretical concept in question.

Table 3: Historic development of the definition of organizational learning in context with the current research

Researcher and definition	Comment by the author
Following the notion of (Duncan, R., Weiss, A., 1979) OL is concerned with developing knowledge and therefore is considered a continuous process of knowledge creation, acquisition and transformation.	The perception of OL as a continuous process , in the mind of the researcher is of utmost importance for the concept.
Fiol and Lyles (1985) state that “ <i>Organizational learning means the process of improving actions through better knowledge and understanding.</i> ”	The notion acknowledges the processual character of the concept as well as the goal of improvement .
Following the findings of (Huber, 1991 in Hanvanich, 2006) OL is a process consisting of four stages, which are: <ul style="list-style-type: none"> ▪ acquisition, ▪ dissemination, ▪ interpretation and, ▪ storage of knowledge. 	Unlike the earlier definition mentioned above, this approach is very much centered on knowledge management, leaving any human factor out of the equation.
Zollo and Winter (2002: 40 et seq.) defined organizational learning as “ <i>a collective capability based on experiential and cognitive processes and involving knowledge acquisition, knowledge sharing, and knowledge utilization.</i> ”	The definition focuses on the organizational level and emphasizes dimensions of knowledge management.
Citing the approach by López et al. (2005: 228) of OL the latter could be defined as: “ <i>... a dynamic process of creation, acquisition and integration of knowledge aimed at the development of resources and capabilities that contribute to better organizational performance.</i> ”	The definition incorporates in the eye of the researcher two important features; the dynamic nature of the process and the aim for better organizational performance .
Citing Dasgupta (2012: 2) OL can be defined as “ <i>... the various means by which the firms build, complement, and organize knowledge and routines around their activities and within their cultures, and adapt and develop organizational efficiency by improving the use of the broad skills of their employees.</i> ”	The definition incorporates the idea of improving the organization via OL as vehicle of that advancement .
Noruzy et al. (2013: 1075) state that “ <i>Currently, organizational learning is being explained within the context of strategic management, and considered as a source of competitive advantage</i> ”	The definition indicates the connection of organizational learning with organizational performance as it is perceived to sustain competitive advantage .
Fink et al. (2017: 3) define organizational learning “ <i>by encoding inferences from history into routines that guide behavior, implying that organizational learning is routine based, history dependent, and target oriented. From a practice-based standpoint, organizational learning is viewed as the bridge between working and innovating.</i> ”	The definition points out that target oriented or directed to sustain organizational performance .

Data source: author's own construction

Taking into account the aforementioned approaches the author's definition of organizational learning in the context of this work is: ***“Organizational learning is an attitude in the whole organization towards continuous advancement by means of acquisition, distribution, and interpretation of knowledge aimed at the development of lasting capabilities contributing to competitive organizational performance.”***

In the eyes of the author, this notion of organizational learning appropriately acknowledges the necessary qualities relevant for the research interest. First and foremost, the paramount quality of the connection between knowledge as input, the learning process as the pivotal point, and the consequential organizational output. And secondly, an ever faster changing economic environment necessitates a non-static understanding of organizational learning, as otherwise it would become outdated before long. Therefore the set of attributes and connections, in the mind of the researcher, need to be understood as an attitude towards a certain end, e.g. organizational performance, rather than an externally imposed or internally happening process, as it is perceived by most previous authors. And in that sense, as it is the belief of the author, organizational learning should contribute to a lasting, competitive organizational performance, as the overriding importance for any organization is long-term survival.

Definition of the theoretical concept of human resource management in the context of the research

As with organizational learning the concept of HRM has been evolving alongside other partly overlapping concepts. Three of them, namely human resources development (HRD), strategic human resource management (SHRM), and talent management are briefly described below.

First, the term human resource development (HRD) needs to be delineated, as researchers, commentators and policy makers have stressed the importance of investment in HRD to enhance the quality of human capital and create sustainable competitive advantage (cf. Scheel et al. 2014). Doing so is a challenge, as recent research reports that *“we encountered difficulties in defining ‘HRD’ given the broad conceptualisation found in the literature”* (Nolan 2016). According to DeSimone et al. (1998) human resources development can be defined as *“a set of systematic and planned activities designed by an organization to provide its members with the opportunities to learn necessary skills to meet current and future job demands”* and Armstrong (2014) adds that strategic HRD encompasses *“development that*

arises from a clear vision about people's abilities and potential and operates within the overall strategic framework of the business". HRD therefore is the part of human resource management that specifically deals with training and development of the employees and builds up the framework for helping employees develop their personal and organizational skills, knowledge, and abilities. A placement of human resource development in the context of this research can be found later in this chapter.

Second, as Gurbuz and Mert (2011) point out, there is no consensus on the definition of strategic human resource management (SHRM). Following the elaboration by Salaman, Storey and Billsberry (2005) it should be understood that there is no single thing such as SHRM but much rather a broad variety of concepts, theories and conceptions. Nonetheless, a definition suggested by Salaman, Storey and Billsberry (2005) is as follows: *"A distinctive approach to employment management which seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce using an array of cultural, structural and personnel techniques."* Perhaps the most straight forward and for that matter viable notion is the one by Wright (1992: 228) who defines strategic human resource management as *"the pattern of planned human resource (HR) deployments and activities intended to enable an organization to achieve its goals"*. The different definitions of strategic human resource management suggest that it is an overarching approach to people management within the organization in an broad, strategic sense. The focus is on the longer-term strategic needs of the organization in terms of its people, rather than day-to-day human resource policies and practices. Strategic human resource management can be regarded as encompassing a number of individual human resource strategies (or policies), for instance a strategy (policy) for rewards, for organizational development, and for performance management.

Third, the term talent management was established at the end of the 1990s and stems from a study by McKinsey which presented in detail the "War for Talents", i.e. the struggle for the best employees, and is up to date associated with the perception that it is crucial for the competitiveness of business enterprises to attract, develop and retain talent (Ritz 2011, 3) or in other words to use talent management which is defined by Armstrong (2017) as attraction, retention, motivation and engagement, development, and succession planning. It follows consequently that talent management needs to be a strategic priority in business enterprises

(Powell 2007), as talents that have relevant knowledge, technical know-hof and most of all emotional intelligence or else the potential for development need to be promoted because they contribute decisively to the human capital of the organization. Now, with the outline of human resource development and strategic human resource management, HRM can be better delineated and defined for the intents and purposes of the current work. Table 4: Historic development of the definition of human resource management in context with the current research on page 48 gives an overview of the deduction considerations.

Table 4: Historic development of the definition of human resource management in context with the current research

Researcher and definition	Comment by the author
According to Storey (1995: 5) HRM <i>“is a distinctive approach to employment management which seeks to achieve competitive advantage through the strategic deployment of a highly committed and capable workforce, using an integrated array of cultural, structural and personnel techniques”</i>	The definition sees the concept as “approach” which recognizes a certain holistic approximation. At the same time inherently the description has a rather technical understanding of the matter, as it is about “employment management” and leaves no space for an active or participating part. Furthermore, the definition is very clear and precise about the desired direction, namely “competitive advantage” .
<i>“That part of the management process that specializes in the management of people in work organizations. HRM emphasizes that employees are critical to achieving sustainable competitive advantage, that human resources practices need to be integrated with the corporate strategy, and that human resource specialists help organizational controllers to meet both efficiency and equity objectives.”</i> (Bratton, 1999: 11)	HRM is seen first and foremost as a “management process” administrating the “management of people” with the end of a “competitive advantage” for the organization.
Human Resource Management has been defined by (Tichy, N., Fombrun, C., Deyanna, M. 1982; C.-Y. Lin and Kuo 2007) <i>“as the process by which individuals are recruited into the organization to perform a specific task such as performance must be monitored, and rewards must be given to keep individuals productive.”</i> This process has, according to the authors, four dimensions: selection, appraisal, rewards, and development.	The definition again underlines the process character of the concept and gives a detailed listing of the different operations of the “process” HRM, namely “recruiting” , “monitoring” and “rewarding” of performance with the goal of keeping up “productivity” .
<i>“A strategic and coherent approach to the management of an organization’s most valued assets – the people working there who individually and collectively contribute to the achievement of its objectives.”</i> (Armstrong, 2012: 2)	The definition underlines the holistic view of an “approach” rather than a detached process and again the end of it, namely “achievement” of organizational objectives.
<i>“Human resource management (HRM) can be described as a strategic, integrated and coherent approach to the employment, development and well-being of the people working in organizations.”</i> Armstrong (2017: 4)	The definition emphasizes that HRM is a coherent approach centered around people respectively staff in organizations.

Data source: The table is the author’s own construction

Taking into account the aforementioned definitions of human resource management in the context of this work respectively the understanding of the abstract concept that pours in the further research proceedings is: ***“Human resource management is a holistic approach to employment management in organizations which is directed at the support of lasting competitive advantage and concerned particularly with: staffing, appraisal, rewards and compensation, human resource and development, and employee participation.”***

In the mind of the author, this notion of HRM appropriately acknowledges the necessary properties of the concept relevant in the context of this work. Firstly, HRM is seen as a holistic approach towards employment management rather than a detached process in the way that HRM touches all matters within the organization via its primal tasks: staffing, appraisal, rewards and compensation, human resource development, and employee participation. Secondly, HRM is understood to contribute to organizational performance in the sense of lasting competitive advantage on different levels.

Definition of the theoretical concept of organizational performance in the context of the research

Unlike some researchers before the author seeks to gain a broad, understanding of organizational performance as basis for measurement, as “although these outcomes are important, there may be more proximate outcomes that may mediate the relationship with financial results” (Pérez López et al. 2005). Table 5: Historic development of the definition of organizational performance in context with the current research on page 50 gives an overview of the deduction considerations.

“The definition of ‘organizational performance’ is a surprisingly open question with few studies using consistent definitions and measures”(see Kirby, 2005). Instead, performance measurement as dependent variable is so accepted in management research that its structure and definition is rarely explicitly justified (March and Sutton 1997). However, in the mind of the author a thoroughly deduced definition of the theoretical concept is the basis for valid operationalization and later interpretation of the findings. “Organizational performance is the ultimate dependent variable of interest for researchers concerned with just about any area of management. This broad construct is essential in allowing researchers and managers to evaluate firms over time and compare them to rivals. In short, organizational performance is the most important criterion in evaluating organizations, their actions, and environments.”

(Richard et al. 2009: 1) As a matter of fact “*previous studies that underline the positive effects that organizational learning has on business performance differ on what they understand by performance*” (Pérez López et al. 2005). Usually “*the prescriptive literature considers financial results as business performance* (Lei, Slocum and Pitts 1999a).

Table 5: Historic development of the definition of organizational performance in context with the current research

Researcher and definition	Comment by the author
López et al. (2005) state that “ <i>in order to assess the effect of organizational learning on business performance, two indicators have been used:</i> (1) <i>Innovation and competitiveness.</i> (2) <i>Economic/financial results.</i> ”	The notion of OP includes “ innovation ” outlining the revolving nature of the concept as well as “ competitiveness ” seen as a strategic advantage over competitors and especially concentrates on “ economic/financial results ” as means of measurement.
For Richard et al. (2009) organizational performance “ <i>encompasses three specific areas of firm outcomes:</i> (1) <i>financial performance (profits, return on assets, return on investment, etc.);</i> (2) <i>market performance (sales, market share, etc.);</i> <i>and</i> (3) <i>shareholder return (total shareholder return, economic value added, etc.).</i> ”	The definition, although differentiating various sub groups, concentrates on economic results.
Green et al. (2014: 127) state that “ <i>Organizational performance, or success, is defined and determined by a firm’s ability to compete and is measured as return on investment, return on sales, and profitability as compared to its competition.</i> ”	The definition stresses the holistic approach also adopted by the author of this dissertation in stating that organizational performance includes all aspects needed for the ability to compete .
Naranjo-Valencia et al. (2016) state that organizational performance “... may be defined in terms of financial ratios [...], HR-related outcomes [...] and organizational outcomes [...]”.	This definition emphasizes the view that organizational performance has three different sub-dimensions . A view adapted by the author in the operationalization of the measurement model of this dissertation.

Data source: The table is the author’s own construction

Taking into account the aforementioned the definition by the author of organizational performance in the context of this work respectively the understanding of the abstract concept that pours in the further research proceedings: “***Organizational performance is a holistic approach incorporating the end results of all the organization’s work processes and activities directed at lasting competitive advantage.***”

In the mind of the author the aim of this work is not to focus on a specific characteristic or set of characteristics but much rather to get a comprehensive view of a company’s state respectively development. Accordingly, the approach to organizational performance in this

dissertation will be a holistic one taking into account the output of all the end results of a company's work processes and activities. Three areas seem to be of paramount importance. First, economic performance basis for short- to mid-term survival in a competitive environment. Second, general competitiveness in the sense of a broader basis for competitive advantages as foundation for the right to exist in the mid to long run. And third, human resource performance as a centerpiece of the overall organizational performance in terms of human resources contributing to all areas of organizational outcomes and therefore being a fundamental indicator for the ability of long-term survival.

Definition of business enterprise as subject of research in the context of the research

In addition to the aforementioned central theoretical constructs that make up the theoretical scheme it is also important to define the thing that is being researched on, the object of the research namely the business enterprises in Austria.

The first property of the encompassed business enterprises is that they operate in Austria, i.e. they have a physical establishment with employees within the federal state of Austria. The second property is that the term enterprise is used to describe a project or venture undertaken for gain. And third, the extension business refers to the entity carrying out the enterprise and is thus synonymous with "company" or "firm" (cf. OECD, 1993). From a legal point of view "organization" in a broader sense includes not only enterprises (companies, firms), but also such legal forms as public entities / institutions (for example, ministries, administrations in state level, scholl in local level), and also associations and foundations. In this dissertation it is used in a narrow sense – as synonymous of enterprises. In the data gathering process the term organization is used as described below. The definition of business enterprise in the context of this work is thus: **“Business enterprise denominates an endeavor based on entrepreneurial activity operating in Austria”**.

1.3 Open questions in existing literature as starting points for further research

Even a most thoroughly conducted literature review is unlikely to highlight all the white spots on the map of organizational learning, that is why the following supposed gaps in the existing literature are only a selection considered of importance respectively interest in the context of this research.

First, the measurement of organizational performance is often limited to economic or financial results. Are there other possible important aspekts left out of sight? As elaborated by Pérez López (2005), the interest in organizational learning is growing, as senior managers in many

organizations would be convinced of the importance of improving learning in their organizations. Consequently, as Ellström (1997) for one points out, since the early 1990s there has been a focus in research on organizational learning and HRM, as instruments for enhancing organizational performance, namely productivity, competitiveness, and economic growth. Despite this interest, as Bontis (1998) indicates, and although the management of intellect would lie in the very center of today's knowledge-based economy, methods of measuring and evaluating intellectual capital would have been slow to develop and that there would be an extremely limited literature on the study and management of intellectual capital. Surprisingly therefore the *"definition of 'organizational performance' is a surprisingly open question with few studies using consistent definitions and measures"* (see Kirby, 2005). Instead, performance measurement in management research that its structure and definition is rarely explicitly justified (March and Sutton 1997). Also, studies of knowledge management and its effect have been mainly theoretical (Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011) with little empirical evidence (Teece, D. J. 1998; Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan 2011). Consequently, it is necessary to establish the relationship between organizational learning/HRM and organizational performance in future research (cf. Pérez López 2005). Following this scientific tenor the author in the current study seeks to contribute to the body of knowledge by adding evidence from its own unique measurement setup of the theoretical construct and theoretical scheme of organizational performance.

Second, how much proof is there of the presupposed relationship between organizational learning respectively HRM and organizational performance? Despite the growing interest for the topic of organizational learning, prior to 1996 there has been hardly any work on the measurement of the learning organization construct (Stata 1989; Goh, Elliott and Quon 2012). It is pointed out by Pérez López et al. (2005) that although links between learning and business performance would have often been assumed, there is little empirical evidence to support this perspective and it remains an open question with necessity to gain a deeper understanding of this complex relationship (Goh, Elliott and Quon 2012). Furthermore, Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan (2011) note on that account that the establishment of a causal relationship – whether direct or mediated by other variables – between knowledge management and organizational performance (Armistead, Colin 1999; Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011) has a weak theoretical and empirical background (Palacios-Marques, Ribeiro-Soriano and Gil-Pechuan 2011). Galbreath and Galvin (2006) point in the same direction when stating that further research is needed to

clarify the relationships between intangible resources and the degree to which resource combinations are important to organizational performance. As shown above, there is quite a number of works sustaining the notion of a positive impact of organizational learning on organizational performance. Nonetheless, a given theory can by definition never be verified but only substantiated or otherwise falsified (Popper and International Society for Science and Religion 2007). Also, there are research outcomes that seem to contradict the abovementioned notion (cf. Guest et al. 2003; Fernandes, Mills and Fleury 2005), as also shows the conducted meta-analysis described below. Furthermore, it seems that on the whole the postulated connection between organizational learning and organizational performance as well as its strength seems very much dependent on the specific circumstances and settings of the research conducted (cf. Lee and Choi 2003; Hoffman, Hoelscher and Sherif 2005; Galbreath and Galvin 2006; Weldy 2009; Goh, Elliott and Quon 2012; Saunila 2012). Further research, according to Goh, Elliott and Quon (2012), is needed to explain why the strengths of the correlations between learning capability and performance varies so much in different settings, with different firm-sizes and so on and so forth. Current research give different suggestions about single relevant items of organizational learning that are perceived to impact business relevant outcomes. Strack et al. (2014) e.g. name employee engagement and the general approach towards learning in the organization. For the theoretical construct of human resource management *ibid.* mention talent management and strategic workforce planning and career models as the single most important items. The author opted to include the aforementioned items into the measurement model in order to specifically test their influence.

Third, what is the direction of influence between organizational learning and performance?

The presupposed direction of the relationship in earlier research was as a general rule as such that organizational performance was seen as the dependent variable. López, Peón, and Ordás (2005) give direction for further research in the area by hinting that while strategic management research models treat organizational performance as the dependent variable, there is the possibility that these relations may occur in the reverse order and therefore the issue of causality remains (cf. Goh, Elliott and Quon 2012). Organizational performance provides important feedback on the efficiency of a learning process and ultimately affects how an organization continues to learn.

The evidence point in the direction that organizational performance is indeed a dependent variable of (amongst many others) organizational learning and therefore this direction of dependence is postulated for the scope of this dissertation, and is tested in its progress.

However, to provide more evidence for or against that argument also the reverse direction of dependency is tested.

Forth, what is the importance of human resource development (HRD) measures as part of human resource management for organizational performance? According to Meifert (2013) the greatest obstacles in practical terms when it comes to implementing an HRD approach is the complexity of the field in terms of what is encompassed by HRD and what is useful dependent on corp. strategy etc. recent research point out different items in HRD that impact on business relevant outcomes of business enterprises. Amongst the most recently cited for example in Strack et al. (2014) are leadership development and further education and training respectively vocation education and training (VET). The author opted to include items of HRD into the measurement design to specifically test the impact on organizational performance.

Fifth, as the necessary data is hard to come by, is the gathering of perceptual data sufficient for scientific requests? In order to try to analyze empirically the existence of significant and persistent differences in organizational performance, e.g. in terms of profitability, among firms that can be attributed to their learning capacity, requires comparisons between firms, and therefore knowledge of respectively access to sufficient economic/financial data to evaluate rent creation, which is difficult (Smith, Vasudevan, and Tanniru 1996). A clear limitation of the existing research in this field (cf. Pérez López 2005; Goh, Elliott, and Quon 2012) is the nearly always pure perceptual character of the measurement. Hence, common method variance (CMV)¹ has been cited as potential problem of the obtained data (Podsakoff et al. 2003). Nevertheless, research has shown that bias due to common method variance is only minor (Spector 2006; Meade, Watson and Kroustalis 2007) or of no relevance at all (Flores, Catalanello, Rau, Saxena 2008; Jiang and Li 2008). However, as elaborated by Pérez López (2005) perceived measures of performance can be a reasonable substitute for objective measures of performance (Dess and Robinson 1984) and turn out to have significant correlation with objective measures of financial performance (Hansen and Wernerfelt 1989; Lyles and Salk 2006). In accordance and owed to the practicability of measurement the author opted to operationalize the data-gathering via perceived self-evaluation.

¹ Common-Method Variance (CMV) is the spurious "variance that is attributable to the measurement method rather than to the constructs the measures represent" (cf. Podsakoff et al. 2003)

Sixth, much research has already been done on the relationship between organizational learning or HRM and organizational performance under various circumstances, but which other variables also intervene? As elaborated above, the inter-linkage of organizational learning and organizational performance has been both anticipated when conceptualizing the theoretical scheme for this study and shown in previous works. Although, different previous authors underline the interfering influences of a great variety of further variables on organizational performance, in order to arrive at a feasible modus operandi the author chose to reduce the theoretical scheme to the main theoretical concepts of interest; namely organizational learning, HRM and organizational performance. Nonetheless, to better understand the broader ramifications in the following some critical influencing variables – identified in earlier works – are mentioned: organization's culture (cf. Weick 1985), as it was evidenced by different researchers (Gordon and DiTomaso 1992) that culture and organizational performance are interlinked; organizational structure, leadership, and corporate strategy, as put forward by Pérez López et al. (2005) are influencing variables of organizational learning; also certain external factors, such as changes in government regulations or in production or distribution costs, may favor one company over another (Mary M. Crossan 1995) and distort the assumed correlation. Also, Goh, Elliott and Quon (2012) give direction for potential research when explaining the need for the exploration of non-financial performance factors, such as innovation capability (Alegre and Chiva 2008; Baron and Kenny 1986; Goh, Elliott and Quon 2012) and the capabilities of the organization in human resources, which may have significant moderating or mediating effects on the link between learning capability and financial performance. Taking into account the above mentioned the author opted for the inclusion of also non-financial variables regarding general competitiveness and human resource performance.

In the mind of the author the gaps in existing literature open the opportunity for further research focusing on specific ramifications; in the case of this work the case of Austrian business enterprises. Also, as previous research has usually concentrated on single business sectors a comprehensive study incorporating all business sectors should lead to more robust results and the possibility for further classification of the findings.

2 Research methodology for testing the interdependencies between human resource management, organizational learning, and organizational performance

2.1 Research hypotheses about the connection between organizational learning, human resource management and organizational performance

“The wrong view of science betrays itself in the craving to be right; for it is not his possession of knowledge, of irrefutable truth, that makes the man of science, but his persistent and recklessly critical quest for truth.” (Popper 1959)

In the preceding chapter organizational learning, HRM and organizational performance have been explained and discussed before the background of organizational theory. The purpose of the following section is to establish the related research hypotheses.

As shown in chapter one, there has been a great variety of research regarding the supposed connection between organizational learning/HRM and organizational performance over the past two decades and more. Although the overall opinion seems to be prevalent that indeed organizational learning influences organizational performance, it also seems to be a matter of specific circumstances and settings applying to the respective target. Interestingly enough, according to the results from the conducted pre-study the overall impact on a company seems not to be as clearly foreseeable as the first notion might suggest. Positive outcomes of organizational learning in terms of organizational performance may well be diminished or even overshadowed by negative “collateral damage” regarding e.g. staffing problems.

The main hypothesis to be tested in the course of this thesis therefore regards the expected overall positive impact of organizational learning on organizational performance:

H1: Organizational learning positively influences organizational performance.

Although most literature suggests the direction of influence running from organizational learning to organizational performance, there is also research supporting the view that it could well be the other way round. López et al. (2005) for example give direction for further research in the area by hinting that while strategic management research models treat organizational performance as the dependent variable, there is the possibility that these relations may occur in the reverse order and therefore the issue of causality remains (Goh, Elliott and Quon 2012). Organizational performance provides important feedback on the

efficiency of a learning process and ultimately affects how an organization continues to learn. Hence, further research should seek to provide more evidence for or against that argument. Accordingly the alternative hypothesis about the direction of influence is formulated as follows:

H2: Organizational performance positively influences organizational learning.

Following the reasoning of Allen et al. (2008), namely that explicitly or implicitly economics is the primary organizational driver behind HRM the direction of the supposed correlation between HRM and organizational performance is also in the center of interest of this work. The direct impact of HRM on organizational performance has not been largely explored by previous research (cf. Lin and Kuo 2007: 1078). Some studies (cf. Lin and Kuo 2007: 1078; Kuo 2011) conclude that HRM can only indirectly impact organizational performance through organizational learning. Direct impact is negligible. Although *“it is often assumed that research over the last decade has established an effect of human resource management (HRM) practice on organizational performance”* the *“unknown reliability of measures of HRM, the paucity of studies with adequate research designs, and the inconsistent results both across and within studies is troublesome”* and *“the conclusion [...] is that it is premature to assume that HRM initiatives will inevitably result in performance gains”* (Wall 2005: 453-454). Nonetheless, recent studies (cf. Strack et al. 2014; Boston Consulting Group and World Federation of People Management Associations, 2010) underline that at least some human resource-practices are strongly connected to high-performing companies such as the focus on performance and rewards. In order to substantiate or falsify the notion the forth hypothesis reads:

H3: Human resource management positively influences organizational performance.

In the mind of the author these three hypotheses cover the main research interest behind this work, namely to discover the relationship and the direction of influence between the theoretical concepts of organizational learning and organizational performance, as well as the influence of human resource management on organizational performance. These interdependencies are tested further below using a variety of statistical methods.

2.2 Dimensions of the research model and measurement of organizational learning, human resource management, and organizational performance

The measurement approach to human resource management

Literature in general identifies slightly different dimensions of HRM to be considered as measures in the respective research settings. The following table gives an overview of some approaches. Following this guideline the author opted for five dimensions: staffing, appraisal, rewards and compensation, human resource development, and employee participation. Table 6 in an effort to make the picture more comprehensive clusters the dimensions in the rows according to (presumed) equivalence.

Table 6: Classification of HRM dimensions

Author / year	Schuler and Jackson 1987	Gupta, Ashok K., and Arvind Singhal 1993	Lin and Kuo, 2007: 1067	Gomez-Mejia 2010	Kuo, 2011: 590
Suggested HRM dimensions	Human planning (choices)	Planning			
	Staffing (choices)		Staffing	Staffing	Personnel staffing
	Appraisal (choices)	Performance appraisal	Appraisal	Performance evaluation	Performance appraisal
	Compensation (choices)	Reward systems	Rewards and Compensation	Reward management	Reward and compensation
	Human resource development	Career management	Human resource development	Human resource development	Human resource development
			Work flow	Work flow	
				Lay-off management	
				Relationships among employees	
				Empowerment	Employee participation
				Internationalization	

Data source: author's own construction

In order to test the theoretical construct HRM is divided in the dimensions identified above. Each of the dimensions is tested in a questionnaire via different item lists summarized as

factors aimed at a comprehensive picture of the dimension's relevant properties. Table 7 below shows the items of staffing, appraisal, rewards and compensation, human resource development and employee participation.

Table 7: Dimensions and test items of HRM

<u>Factors</u>	<u>Item</u>
Staffing	The organization takes HR measures for identifying, recruiting, and retaining employees for key positions and functions.
	The organization has long-term forecast for strategic workforce planning.
	The organization takes measures to refine its employer brand and in doing so distinguishes itself from competitors in a positive way.
Appraisal	Employees are being appraised based on evaluations from supervisors, peers, and customers.
Rewards and Compensation	The organization's reward policies are performance-linked.
Human resource development	Leadership development has a high significance in HR of the organization.
	Measures for Vocational Education and Training (VET) have a high significance in the organization.
	There is a long-term strategy in the organization concerning the need for further education and training of employees.
Employee participation	Employees (i.e. non-management) are involved in decision processes; for example when establishing strategic plans or discussing new policies.

Data source: author's own construction

The five dimensions contributing to the theoretical construct of HRM are tested by different numbers of questions, as some of the dimensions can be tested rather straightforward whereas others possess more inherent complexity and need to be tested from different points of view via different questions or items. First, staffing is seen as the function of selection of individuals for specific positions based on a long-term job forecast, and the management of the employer brand. Accordingly, this dimension is tested via an item list of three questions asking for these three incorporated properties. Second, appraisal is viewed as the act of estimating or judging the nature or value of individual job performance and is accordingly

tested by one item asking for that specific property. Third, rewards and compensations have the main objective to attract or maintain high performing employees. One item asking for performance-linkage tests that dimension. Fourth, human resource development are viewed as ongoing educational activities within an organization designed to enhance the fulfillment and performance of employees, also including leadership development. The dimension is tested via three items asking for general vocational education and training, leadership development, and the long-term strategic importance of human resource development within the business enterprise. Fifth, employee participation is seen as empowerment of employees by authority in terms of transfer of decision-making. Ergo, this property is tested by one item.

The measurement approach to organizational learning

As a complex construct organizational learning is not simply about whether individuals have learned something new (Huber 1991 et al.). Rather new knowledge has to be applied to a strategic context (Crossan et al. 1999 et al.). Different authors have done research on the subject of organizational learning in order to identify its dimensions. Table 8 below in an effort to make the picture more comprehensive clusters the dimensions in the rows according to (presumed) equivalence.

Table 8: Classification of organizational learning dimensions

Author(s), year	Pérez López et al. 2005*	C.-Y. Lin and Kuo 2007	Kuo 2011
Suggested OL dimensions	Knowledge Acquisition	Learning practice	Learning practice
	Knowledge Distribution	Information sharing pattern	Information sharing pattern
	Knowledge Interpretation		
	Organizational Memory		
		Inquiry climate	Inquiry climate
		Achievement mindset	Achievement mindset
*The same dimensions are also used in some other scientific work (Huber, 1991; Day, 1994; Nevis Dibella and Gould 1995, Crossan et al. 1999).			

Data source: author’s own construction

In order to test the theoretical construct, organizational learning is divided in the dimensions identified above. Each of the dimensions is tested in a questionnaire via different test items summarized as factors aimed at a comprehensive picture of the dimension’s relevant properties. Table 9 below gives the items of organizational learning in the dimensions:

knowledge acquisition, knowledge distribution, knowledge interpretation, and improvement attitude.

Table 9: Dimensions and test items of organizational learning

<u>Factor</u>	<u>Item</u>
Knowledge Acquisition	Research and development (RandD) is of high significance within the organization.
	The internal systems and procedures support innovation.
	Employees in your organization actively improve their professional competencies.
Knowledge Distribution	Information about the latest innovations and changes in the organization is continuously given to the staff.
	The sharing of knowledge and experience is common within your organization (e.g. by sharing best-practices).
	Employees are informed about the strategies and aims of the organization.
Knowledge Interpretation	All the members of the organization share the same aim, to which they feel committed.
	There are opportunities to learn (e.g. visit to other parts of the organization, internal training programs, etc.) so as to make employees aware of the different duties within the organization.
	Teamwork is a very common practice in the company.
Improvement Attitude	Employees in your organization actively explore the current market and related new developments.
	Making suggestions about internal improvements and innovations is common within your organization.
	Employees have a positive attitude towards a continuous advancement of the organization.

Data source: author's own construction

The four dimensions contributing to the theoretical construct of organizational learning are each tested by various questions as all of the dimensions possess inherent complexity and need to be tested from different points of view. First, knowledge acquisition refers to the options and abilities of a business enterprise to obtain new knowledge usable in the course of

the business processes. The dimension is therefore tested via three items asking separately for research and development, innovation, and professional competencies. Second, knowledge distribution refers to the process and ability within an organization of transmitting newly acquiring business relevant knowledge as well as transparency regarding the strategic direction of the business enterprise. Accordingly, three items ask separately for sharing of innovations and changes, experiences and best-practice and strategy transparency. Third, knowledge interpretation refers to the ability of the organization respectively business enterprise to integrate and make use of business relevant knowledge for its own value-added process. In order to test knowledge interpretation three items test three properties, namely clearness and coherence of aims amongst staff, learning opportunities, and the practice of teamwork. Fourth, improvement attitude is seen as the overarching mindset of employees regarding the advantage of ongoing improvement within the organization. Three items ask separately for different properties in an effort to capture the dimension, namely awareness for the importance to follow market developments, the awareness of the importance of internal quality management by active suggestions, and the general attitude towards continuous advancement.

As indicated above, the independent variables partly lean on the suggestions made by earlier authors that picture the view of the author of an holistic approach. Moreover, the models and its variables have already been tested which seems to grant a more reliable measurement. And last but not least, relying on already introduced measurements give the opportunity for comparisons with previous research. The choice of variables to represent the domain and each critical dimension was carried out after an exhaustive review of both the organizational learning literature and other reliable instruments (Nonaka et al. 1994; Goh, and Richards 1997; Hult and Ferrel 1997; McGraw, McMurrer and Bassi 2001; Bontis, Crossan and Hulland 2002; Pérez López et al. 2005). To further substantiate the grasp of the theoretical concept, also many other research in the field was consolidated.

The measurement approach to organizational performance

Previous studies underlining the positive effect of organizational learning on organizational performance differ in their understanding of organizational performance, most of them considering financial results as business performance (Lei, Slocum and Pitts, 1999).

However, learning does not always immediately affect economic and financial results but also other organizational outcomes. Therefore, in an attempt to get the whole picture the author also considers other dimensions of organizational performance. Table 10 below in an effort to make the picture more comprehensive clusters the dimensions in the rows according to (presumed) equivalence.

Table 10: Classification of organizational performance dimensions

Author(s), year / OP dimensions	Mark A. Huselid 1995	Delaney and Huselid 1996	Pérez López et al. 2005	C.-Y. Lin and Kuo 2007	Gurbuz and Mert 2011*	Kuo 2011
Economic performance	Turnover Corporate financial performance		Economic / Financial Results	Market performance	Perceived financial and market performance Turnover	
Competitiveness	Productivity	Product or service quality Customer satisfaction Product or service innovation	Innovation and competitiveness		Perceived operational performance	Product or service quality Customer satisfaction
Human resource performance		Employee attraction Employee retention Management and employee relation Employee relations		Human resource performance	Job satisfaction	Employee attraction Employee retention Management and employee relation Employee relations

*Referring to previous work (Huselid, 1995; Kaplan, R.S., and Norton, D.R., 1992).

Data source: author's own construction

In order to depict a comprehensive view of organizational performance covering all different aspects of the theoretical scheme the author opted for three dimensions to be used: economic performance, general competitiveness, human resource performance.

The measurement approach to economic performance

Tracing empirically the existence of significant and persistent differences in organizational performance in terms of profitability among firms that can be attributed to their learning capacity requires comparisons to be made between firms and access to sufficient economic/financial data (cf. Smith et al. 1996).

Given the potential competitive implications of revealing such information, it is not surprising that many respondents are hesitant to report information pertaining to such indicators as profitability and ROI (Return on Investment). In general, identifying optimal measures for a firm's financial performance is inherently problematic as it is also for obtaining other sensitive data (López et al. 2005). In order to avoid the omission of sensitive performance data, a more indirect approach for collecting the data is utilized and tested by three perceptual items. The following three items may capture the relevant properties in a sufficient way:

- The organizations business situation is better than sectoral average.
- The development of the organizations turnover/volume of sales is better than sectoral average.
- The development of the organizations' profits is better than sectoral average.

As stated by López et al. (2005) perceived measures of performance can be a reasonable substitute for objective measures of performance (cf. Dess and Robinson 1984) and turn out to have significant correlations with objective measures of financial performance (e.g. Hansen and Wernerfelt 1989; Lyles and Salk 2006).

Therefore, the questionnaire is made of direct questions about respondents' satisfaction level with their firm in terms of general business situation, turnover/volume, and profits development. Similar measurements of performance have been used before in research projects when financial data was either unavailable or would not allow for accurate comparisons amongst the target-group (Dess 2006; Powell 1992; Powell and Dent-Micallef 1997; Tippins and Sohi 2003; Pérez López et al. 2005).

Although research on the subject is mainly focused on organizational performance in terms of economic and financial success (Lei, Slocum, and Pitts 1999b; Pérez López et al. 2005), there might well be some intervening factors mediating between organizational learning and organizational performance, such as changes in government regulations or in production or

distribution costs, (Crossan et al. 1995; López et al. 2005). Moreover, organizational learning does not necessarily affect the economic / financial results immediately (cf. López et al. 2005). Consequently it seems prudent to consider also other aspects of organizational performance described in the literature (cf. Nason 1994; Bontis, Crossan and Hulland 2002).

The measurement approach to general competitiveness

General competitiveness is measured by three items (based on Kaplan and Norton 1992; Slater and Narver 1995, Cumby and Conrod 2001 and Bontis 2002). In the opinion of the author the following three items capture the relevant properties in a sufficient way:

- The reputation of the organization is better than sectoral average.
- The customer/client loyalty of the organizations is higher than sectoral average.
- The organization handles changes and changing conditions in its environment better than sectoral average.

The measurement approach to human resource performance

Huselid et al. (1997) provide a measurement for human resource performance which will also be used as measurement frame in this work. The relevant factors are: attraction of employees, retention of employees, motivation of employees, relationship between managers and employees. The author opted for the two following items to capture the relevant properties:

- The employees of the organization are more satisfied with their employer than on sectoral average.
- It is easier for the organization to find qualified work force for vacant positions (e.g. skilled worker positions, apprenticeships etc.) than it is on sectoral average.

2.3 Target population and sampling approach to research on the linkage between organizational learning, human resource management, and organizational performance

The researcher makes use of a **research method** triangulation to ensure the data collected from participants is representative for the real phenomena that are tried to be captured. The use of triangulation gives a more detailed and balanced picture of the situation. Accordingly, there are four **research techniques**: The first technique or tool in the process of scientific data gathering is the literature review and the resulting meta-analysis. The second technique is to conduct a pre-study with five selected experts in order to be able to better grasp the crucial

aspects of the variables under scrutiny and together with the first technique to arrive at a viable theoretical scheme. The third technique is the drawing of different samples via introduction of an electronic survey. The fourth is a post-study to cross-check research results for plausibility. The literature review is described in detail in chapter I, whereas the pre-study and the electronic survey, and the post-study are reported below in this chapter.

Approach to pre-study: guided interview

Data gathering via the pre-study is carried out as a series of semi-structured or guided interviews aiming at the formulation of relevant questions and the research design. This goal is in line with the statement by Sach (2013: 40) who points out that a *“well-designed interview can prompt the participant to reflect and to respond to questions with rich and comprehensive answers, as well as providing the researcher with the flexibility to ask questions opportunistically in real-time as a response to something the participant said”*.

In the beginning of this project the author conducted a pre-study amongst randomly selected² business enterprises in Austria from different industrial sectors, of different size and forms of enterprise. In accordance with up to date research examples (Kristapsone, 2014; Jēkabsons, 2017) the number of expert interviews was set at six, as *“it is assumed, that expert group is not large. For a pre-study five experts are enough”* (Kristapsone, 2014: 350).

All experts have been selected because of their expertise and practical management experience in the field of human resource management and organizational learning/development which is inherent in their respective position. All experts have a long-lasting practical background enabling them to make qualified input on the matter. An overview over the chosen experts is given in the appendix in the table Pre-study: Overview of experts for guided-interviews on page 182.

In order to get a good representation of the later target group the author chose business enterprises operating in all different business sectors as defined by the Austrian Federal Economic Chamber. Furthermore, to get a good impression from all sizes of business enterprises two examples for every category – later used for testing via SEM – were included.

² Dates of guided-interviews: 24.10.2012, 21.11.2012, 21.11.2012, and 13.12.2012. Names of business enterprises and interview partners are known to the author. The business enterprises and/or interview partners chose for reason of general privacy policy to remain anonymous.

Leaning on the considerations of Sach (2013: 55) the interview is designed with the core focus of encouraging dialogue partners to discuss their perception of organizational learning/HRM and its impact on their own organization in terms of organizational performance. Oppenheim (2000: 67) describes an exploratory interview as one where the research is *“concerned with trying to understand how ordinary people think and feel about the topics of concern to the research”*. The goal is to narrow the field of relevant questions for the later questionnaire. The interviews were held in the respective organizations of the dialogue partners and were conducted in a one-to-one setting between dialogue partner and researcher. In total, six respondents who were identified by the researcher as representative for the later target group. Prior to the start of the interview, the dialogue partners were asked for consent and agreed to be interviewed. Notes were taken during each interview in order to record information. Interviews lasted between 10 and 20 minutes. The dialogue partners were confronted with each of the questions at a time. The questions were open-ended and allowed the participants to reflect and respond to each question for as long as necessary. Also, participants were encouraged to answer freely in order to encourage them to offer their own opinion and to maybe find out aspects of the themes in question which had not been considered yet.

As with any research method, there are limitations to guided interviews. First, the collected data relies strongly on the engagement of the participants, and the ability of the researcher asking the questions to tease out relevant information. Therefore, the interview was piloted with five volunteers helping the researcher to get a good understanding of posing questions and gain valuable experience of conducting interviews, improving the necessary skill of the researcher. The participants were never mandated to participate but did so of their own accord. Secondly, a limitation is the quality and accuracy of the questions being asked. To ensure that questions were appropriate and elicited the interview questions were previously discussed with HR-experts both with academic as well as professional backgrounds. Details on can be found in the appendix in the table Electronic survey: external reviewers of questionnaire on page 183.

The results of the conducted pre-study underline the hypotheses respectively the make-up of the theoretical research scheme. A summary of the outcomes of the pre-study can be found in the appendix on page 181 in the table Pre-study: summary of main outcomes. First, on the question about the impact of organizational learning and HRM on business success the

general opinion is that certain parameters such as motivation and innovational power were general benefits. For example, staff would be better trained, more skilled and therefore more able and productive. Second, asked about the impact of HRM on organizational performance in terms of company outcome and the cost to benefit relation of such measurements the answers were unilateral and clear: In the opinion of the dialogue partners the cost-benefit-ratio is absolutely positive in the long run; however, not necessarily in the short run. One dialogue partner even pointed out that it could be measured that turnover was rising as consequence of HRM and in years where individual HRM measures were stopped, the turnover also would have begun to drop significantly.

Approach to research design, electronic survey participants and data collection strategy

In social sciences it can be distinguished between survey, observation, and experiment as traditionally methods of data collection (cf. Atteslander 2003). Observation and experiment both do not seem feasible methods in the current setting, whereas a survey seems to be well suited for the attempt to answer the research questions. Survey research, state Coughlan et al. (2009), is a non-experimental research approach used for **data gathering** about the incidence, distribution and the relationships that exist between variables. Especially electronic surveys, Lefever et al. (2007) mention, can access large and geographically distributed populations and achieve quick returns.

For the current work the author designed an electronic survey with 35 questions. Some of the items are taken from previous research works in the field. The remaining items are implemented by the researcher based on recommendations from scientific literature review as well as interviews with professionals as well as academics working in the field. The questionnaire has been developed in English and the final version of the questionnaire is translated into German language. Specifically suited to the theoretical scheme of the research the questionnaire is subdivided into four parts: questions about HRM (Q1-Q9), questions about organizational learning (Q10-Q21), questions about organizational performance (Q22-Q29), and general questions about the company and respondents and control questions (Q32-Q35). Table Questionnaire electronic survey in English including answering options on page 175 in the appendix gives the comprehensive electronic survey including full question / statement set and the answer options.

As the precise wording of questions plays a vital role in determining the answers given by respondents all questions are designed to incorporate the largest possible target group of participants, e.g. the broad term “organization” was consistently used to address any form of business enterprises, instead of possibly narrowing the spectrum by using a term like “company” or “business”. Furthermore, in order to achieve a high response rate, accurate sampling and a minimum of interviewer bias a self-administered questionnaire is chosen as suggested by Oppenheim and Oppenheim (1992: 103).

The questionnaire is set up leaning on the make-up recommended in literature, also in recent (e.g. Patten 2016). Characteristics of the questionnaire are: all of the questionnaire’s questions are closed, none of the questions – but the ones concerning general information on the organization (Q32-Q35) – are obligatory, the questionnaire can be completed in 5-10 minutes, confidentiality is assured in the questionnaire and this fact is communicated adequately. In order to validate the later questionnaire a draft was sent to three academics and four HR-experts for review. A full account is given in the appendix in the table Electronic survey: external reviewers of questionnaire on page 183. The final questionnaire is translated to and implemented in German language.

Sampling and representativity:

All participants were selected from a sample comprising of business enterprises’ contact persons in the field of further education and training, organizational learning and or human resource management. Leaning on Koller (cf. 2012) the following categories of participants are distinguished: manager with responsibility for HR department, personnel manager, person responsible for human resource development, member of HR department, organizational development, and other.

Convenience sampling is a type of non-probability sampling technique. As non-probability sampling focuses on sampling techniques that are based on the judgment of the researcher, the current convenience sample is one where the test persons that are selected for inclusion in the sample are the easiest to access respectively available to the research process. The advantage of convenience sampling is that it is easy to carry out with few rules governing how the sample should be collected. Also, the relative cost and time required to carry out a convenience sample are manageable in comparison to probability sampling techniques. This enables the author to achieve the necessary sample size. Furthermore, the convenience sample

helps gathering useful data and information that would not have been possible using probability sampling techniques which require more formal access to well described populations.

In Austria the Federal Economic Chamber is the legal representative of its members (all business enterprises) and the social partner of the government. Constitutional legislature states that all business enterprises are by law members of their social partner which is set up as a self-governing corporation under public law. Accordingly, the target group of the study includes all seven business sectors as defined by the Federal Economic Chamber³:

- Crafts and Trades
- Industry
- Commerce
- Banking and Insurance
- Transport and Communications
- Tourism and Leisure
- Information and Consulting

Table 11 below gives the territorial distribution by business sector of the business enterprises included in the target group in detail:

Table 11: Distribution of Active Members of the Austrian Federal Economic Chamber by business sector in 2015

Distribution of Active Members of the Austrian Federal Economic Chamber by business sector by 31.12.2015 in target regions								
Region / Business sector	Crafts and Trades	Industry	Commerce	Banking and Insurance	Transport and Communications	Tourism and Leisure	Information and Consulting	Total
Lower Austria	11,53%	0,21%	7,02%	0,03%	1,07%	2,47%	3,62%	25,96 %
Styria	7,58%	0,18%	4,33%	0,03%	0,85%	2,24%	2,66%	17,87 %
Vienna	9,95%	0,12%	6,11%	0,05%	1,34%	2,66%	6,60%	26,82 %
Salzburg	3,38%	0,08%	2,36%	0,03%	0,61%	1,46%	1,41%	9,32 %
Upper Austria	8,53%	0,25%	5,58%	0,04%	0,88%	1,91%	2,84%	20,03 %
Total sum in target regions	40,98%	0,84%	25,39%	0,17%	4,76%	10,75%	17,12%	100,00 %

Data source: author's own construction

³ Source: https://www.wko.at/Content.Node/wir/Austrian_Economic_Chambers_Our_Structures.html, date 01.06.2017

The target group is limited to active business enterprises in Austria which have to be by law members of the Austrian Federal Economic Chamber. The so-called ‘dorment’ members have been excluded. They are also by law members but by definition do not have an active business enterprise in the sense of a going concern but only possess the legal licence to open a business in one of the seven sectors. Furthermore, the survey is targeted to five provinces in Austria, namely Lower Austria, Styria, Vienna, Salzburg, and Upper Austria due to the limited resources of the author to acquire the necessary address material necessary in the data gathering process. Table 12 below gives the makeup of the total number of 379.207⁴ active business enterprises in the target regions.

Table 12: Total number of business enterprises 2015 by regional sample

<u>Total no. of business enterprises, date 31.12.2015</u>		<u>Percentage of total</u>
Lower Austria	96.650	25.5
Styria	68.143	18.0
Vienna	104.454	27.5
Salzburg	35.242	9.3
Upper Austria	74.718	19.7
Total no. of business enterprises in the target regions	379.207	100.0

Data source: author’s own construction

In terms of ethical considerations for this research study no ethical approvals were necessary. The collected data did not touch the privacy of the participants, nor are there questions on other potentially discriminating issues (e.g. age, gender etc.). Furthermore the survey is carried out anonymously. If any, the key ethical issues relating to this research are: participants may reveal sensible information about their own organization (i.e. financial data etc.); participants may expose their own opinion on their organizations’ policies and by doing so getting into a potentially unfavorable situation regarding their workplace. Therefore, full assurances regarding confidentiality, data protection and a participant’s right of complaint or withdrawal from the study is explained in the beginning of the questionnaire in order to protect the interests of all participants and interested parties such as the employing business enterprises.

⁴ Source: <http://wko.at/Statistik/Extranet/Mitglied/mg013.pdf>, date 17.12.2016.

The participants are contacted via e-mail and asked to participate in the survey via an attached link to the electronic questionnaire. Five samples are drawn in five different provinces as detailed above. To access a large number of respondents e-mails are sent apart the most popular vacation and holiday periods. Also very busy business times in Austria are taken into consideration. Therefore, from late autumn until mid-January, as well as in February the survey is paused and it is given particular attention to finish the survey before Easter. The surveys consequently take place over a total period of approximately eight months with each survey opened for participation for three weeks and afterwards closed. Table 13 below gives a compendium of the different sample groups in the various regions of Austria and the specific response rate.

Table 13: Overview of electronic survey samples in the different target regions

	Sample region					Total
	<u>Lower Austria</u>	<u>Styria</u>	<u>Vienna</u>	<u>Salzburg</u>	<u>Upper Austria</u>	
Total organizations:	310	100	852	505	29	1.796
Total forwarded participants:	310	100	1.185	739	29	2.363
Total Started Survey:	32	6	43	98	9	188
Total Completed Survey:	21	6	34	78	6	145
Response rate:	10.32%	6.00%	3.63%	13.26%	31.03%	7.96%

Data source: author’s own construction

As the sampling and representativity took place on the approach of convenience sampling business enterprises were contacted that the author could get access to. Accordingly, the percentage of included business enterprises in the study by region does not fully correspond with the statistical distribution of the official statistics of that year. Especially the region (sample) of Salzburg was over represented as data was readily accessible. That fact also translates into the later quota of responses. Table 14: Total number of responses by regional sample on page 73 gives full details of the total number of responding business enterprises included in the samples by region. Included in the target group representing the respective company are the positions manager with responsibility for HR department, personnel managers, person responsible for human resource development (HRD), member of HR

department, organizational development, and person responsible for further education and training.

Table 14: Total number of responses by regional sample

<u>Total no. of responses by regional sample</u>		<u>Percentage of total</u>
Lower Austria	32	17.0
Styria	6	3.2
Vienna	43	22.9
Salzburg	98	52.1
Upper Austria	9	4.8
Total no. of responses in the target regions	188	100.0

Data source: author's own construction

A considerable percentage of respondents failed to detail the business sector of their enterprise. Furthermore, the over representation of the Salzburg sample e.g. with an over proportional representation in the sector of 'Industry', leads to a distortion of the sample data from statistical basis population. The table below gives a full account of the percentage of business enterprises included in the samples by sector:

Table 15: Percentage of business enterprises included in samples 2017 by sector

Distribution of respondents that at least started the questionnaire by business sector by in target regions in 2017									
Region / Business sector	Crafts and Trades	Industry	Commerce	Banking and Insurance	Transport and Communications	Tourism and Leisure	Information and Consulting	Other or unknown	Total
Lower Austria	3,13%	34,38%	12,50%	6,25%	6,25%	3,13%	3,13%	31,25%	100,00%
Styria	0,00%	83,33%	0,00%	16,67%	0,00%	0,00%	0,00%	0,00%	100,00%
Vienna	4,65%	4,65%	9,30%	13,95%	4,65%	4,65%	6,98%	51,16%	100,00%
Salzburg	12,24%	21,43%	21,43%	2,04%	5,10%	8,16%	2,04%	27,55%	100,00%
Upper Austria	11,11%	44,44%	44,44%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%
Total sum in target regions	6,23%	37,65%	17,54%	7,78%	3,20%	3,19%	2,43%	21,99%	100,00%

Data source: author's own construction

The **sample size** was based on comparable previous studies (see for example Kuo 2011; Lin and Kuo 2007; López et al. 2005) and the total sample size of 2.363 promises a reasonable base for analytical research. Using a general guideline for sample size calculation (Flight and Julious 2016) and applying the standard formula for calculating sample size for the above

described population of 379.207 business enterprises in the target region, a confident level of 95% and a margin of error of 2.5% the minimum sample size is 1.531⁵.

The selected target group itself for every Austrian province may have had a varying willingness to respond, e.g. depending on the frequency the person was asked to participate in surveys and the quality of relationship with the local chamber authority. The total accomplished **response rate** of 7.96 per cent is well within the tolerable margin regarding previous research in that field, e.g. López et al. (2005) reported 7.8 per cent and Pablo (2002) indicated 6.5 percent. From that figure as well as the feedback from the review of the questionnaire the author concludes that the questionnaire is adequate for the target group in terms of handling, length and understandability.

Measurement characteristics:

As McLeod (2008) points out that *“various kinds of rating scales have been developed to measure attitudes directly (i.e. the person knows their attitude is being studied). The most widely used is the Likert Scale.”* Likert (cf. 1932) developed the principle of measuring attitudes by asking participants to answer to a succession of statements on a specific theme by stating the extent to which they agreed with the statement *“and so tapping into the cognitive and affective components of attitudes”* (McLeod 2008). Likert-type or frequency scales are designed to measure attitudes or opinions by using given choices to respond (cf. Bowling, 2009; Burns and Grove 1997). Accordingly, these ordinal scales measure levels of agreement/disagreement and assume that the strength/intensity of experience is linear, i.e. on a continuum from strongly agree to strongly disagree, and makes the assumption that attitudes can be measured (McLeod 2008). Respondents in the current work were offered a four-point Likert Scale with no “neutral” value in an attempt to get more shaped results. According to the remarks of McLeod (2008) one major advantage of Likert Scales is that *“they do not expect a simple yes / no answer from the respondent, but rather allow for degrees of opinion, and even no opinion at all. Therefore quantitative data is obtained, which means that the data can be analyzed with relative ease. However, like all surveys, the validity of Likert Scale attitude measurement can be compromised due the social desirability. This means that individuals may lie to put themselves in a positive light. Offering anonymity on self-administered questionnaires should further reduce social pressure, and thus may likewise reduce social desirability bias.”*

⁵ Source: <https://www.surveymonkey.com/mp/sample-size-calculator/#>, date 30.05.2017

The questionnaire was composed in alignment with the theoretical scheme of the research incorporating different sections with test batteries for the three theoretical constructs of HRM, organizational learning, and organizational performance as described in detail above. Furthermore, two additional item packs were included. First, the control questions introduced in order to have the possibility for plausibility cross-checks on the answers that are given with regards to the theoretical constructs, as previous research in the field has shown that internal and external factors can also influence organizational performance (Huselid 1995; Delery and Doty 1996: 1809). In order to cross check the correlations in the theoretical scheme two **control variables** (questions) were implemented: direct impact of HRM on organizational performance (Q 30), and direct impact of organizational learning on organizational performance (Q 31). The two control questions are:

- Vocational Education and Training (VET) has a positive effect on the development of the organization.
- Human Resource Management (HRM) has a positive effect on the development of the organization.

2.4 Approach to reliability and validity in the conducted research

Issues of both validity and reliability of the construct as well as data are given considerable thought throughout this dissertation. In that sense the validity, i.e. the extent to which the data accurately measures what they were intended to measure, as well as the reliability, i.e. the extent to which the data will yield consistent findings if replicated, of the data depend strongly on the design of the questionnaire and questions.

Ensuring the general goodness of reliability and validity several issues were taken into account. First, the author has been dealing professionally with organizational development and HRM since 2009 and had prior to the dissertation the opportunity to accumulated considerable knowledge in the field. Drawing expertise from discussions with experts in many different organizations as well as research participation with cooperation partners in many different countries, gives the researcher the possibility to focus the topic on the most important issues, reducing ambiguity and fostering the consistency of the research. Second, the research process relied on an extensive literature review over a period of more than two decades. Third, the author used more than one method and source of data “*what helps to deliver realistic results*” (Rivera 2010).

Considering the special ramifications and characteristics of the research in question the author takes into account different special factors ensuring construct validity. The **field of research** incorporated a relatively broad spectrum of variables and dimensions. This ramification gives rise to the possibility that the findings may not give strong evidence for some of the hypotheses. Therefore the author uses a method triangulation to cross-check all findings. Different samples are incorporated in an effort to get as valid data as possible.

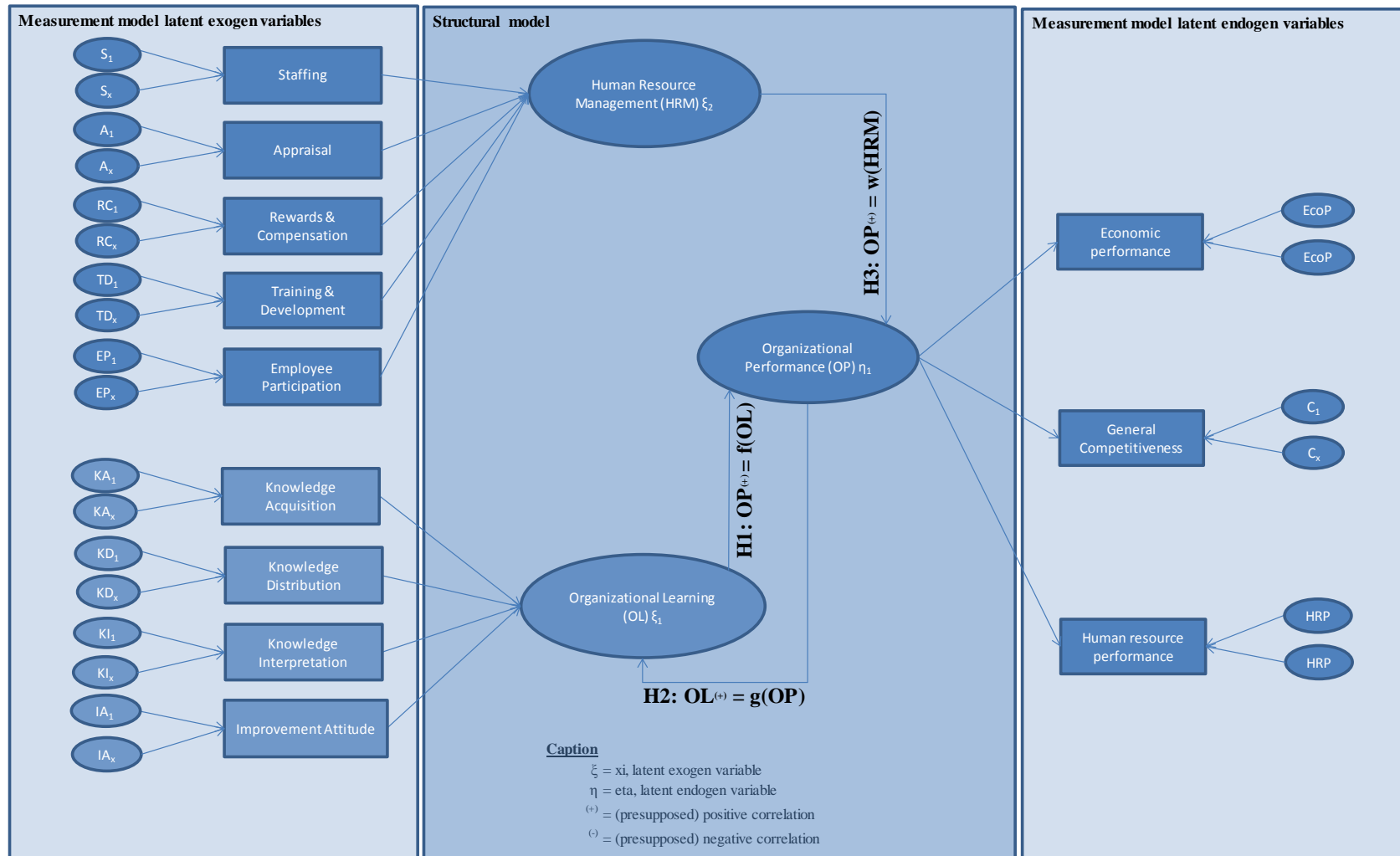
2.5 Theoretical scheme of the presupposed connexion between organizational learning, human resource management, and organizational performance

After an extensive literature review of the work that has been done in the last two decades the theoretical scheme includes dimensions suggested by various researchers as well as extensions and adaptations made by the author regarding the core connection between organizational learning and organizational performance and furthermore takes into account the presupposed influence of HRM.

Regarding the dependent variable of organizational performance the model allows for measuring three different dimensions in an attempt to grasp the development of the whole business enterprise under a holistic point of view.

The figure of the theoretical scheme below shows the detailed operationalization of the three involved theoretical constructs, namely the two independent variables of organizational learning and HRM and the presupposed dependent one of organizational performance and is leaning on a current research framework of a broader research cluster at the University of Applied Sciences Salzburg. Full details on the research framework are given in the figure Research Framework University of Applied Sciences Salzburg on page 208. The research framework considers different theoretical concepts in the discipline of organizational theory to be linked to organizational performance, whereas in the current work the author focuses the research interest on three theoretical constructs, namely organizational learning, HRM and organizational performance.

Figure 3 below shows the theoretical scheme of the research following the modeling suggestions by Brekis (2015) and Gölzner (2015):



The theoretical scheme is the author's own construction

Figure 3: Theoretical Scheme of the research

The theoretical scheme is divided in the measurement models – one for the exogene and one for the endogene variables – and a structural model. The measurement parts highlight the make-up of each theoretical construct by naming the items respectively the attributes considered relevant. From the structural model it can be seen which independencies are presupposed respectively hypotheses are made in this study.

In the frame on the left hand side, the measurement model of the latent exogene variable respectively theoretical construct HRM is split up in different dimensions according to the classification deduced earlier, namely staffing, appraisal, reward and compensation, human resource development, and employee participation. Each of the dimensions is tested by a number of items represented by questions in the questionnaire. The same rationale is applicable for the latent exogene variable organizational learning with its dimensions knowledge acquisition, knowledge distribution, knowledge interpretation, and improvement attitude. On the right hand side, the measurement model of the latent endogene variable organizational performance is given with the according dimensions economic performance, general competitiveness, and human resource performance. In the center frame the structural model is depicting the three theoretical constructs under scrutiny, namely HRM, organizational learning, and organizational performance, as well as the presupposed interdependencies between these theoretical construct represented by the formulated hypotheses.

2.6 Measurement model of the connexion between organizational learning, human resource management, and organizational performance

The abstract constructs of organizational learning, HRM and organizational performance deduced earlier are so-called latent variables which cannot be observed directly and can, due to their multidimensionality, only be grasped by measuring different relevant aspects.

These partial models, e.g. of organizational learning, are named measurement models. Below the measurement models for the three abstract constructs organizational learning, HRM and organizational performance are deduced. In the following first the measurement model for the independent variables are deduced based on previous research in the field and current standard of knowledge and afterwards the same is done for the dependent variable in the theoretical scheme.

Measurement model: Organizational learning

The compilation of items is based on previous research on the topic of organizational learning and its impact on organizational performance. The table Compilation of test items for organizational learning on page 183 in the appendix gives full details on the compilation considerations concerning the works of reference. This approach seems acceptable as the items' phrasing is not tailor-made for one particular research but much rather incorporates criteria usable also for further research.

The selected items are – on basis of the above deduced definition - divided into four factors, namely: knowledge acquisition, knowledge distribution, knowledge interpretation, and improvement attitude. Each of the factors is tested via different items depicting relevant underlying assumptions in so far as the items are presumed to contribute to the make-up of the theoretical construct. Each item is assigned to a specific question respectively placeholder in the questionnaire (Q+no.). Table 16 below summarizes the selected items.

For the factor of knowledge acquisition the items are

- Q10: “Research and development (RandD) is of high significance within the organization.” - Where research and development is seen by the author as a cornerstone for knowledge acquisition and subsequently contribution to OL.
- Q11: “The internal systems and procedures support innovation.” – Innovation is seen as an important indicator for the capacity of knowledge acquisition.
- Q12: “Employees in your organization actively improve their professional competencies.” – This item tries to test the capacity of the organization to acquire knowledge from outside on self-motivated basis.

For the factor of knowledge distribution the items are:

- Q13: “Information about the latest innovations and changes in the organization is continuously given to the staff.” – In the mind of the author the item tries to capture the quality of formal inter-organizational knowledge distribution.
- Q14: “The sharing of knowledge and experience is common within your organization (e.g. by sharing best-practices).” - The item tries to capture the quality of informal inter-organizational knowledge distribution in terms of the teamwork idea.
- Q15: “Employees are informed about the strategies and aims of the organization.” – This item seeks to depict the quality of formal knowledge distribution with an emphasis on organizational strategies.

Table 16: Measurement items of dimension organizational learning

Placeholder	Factor	Item
Q10	Knowledge Acquisition	Research and development (RandD)
Q11		Innovation
Q12		Professional competencies
Q13	Knowledge Distribution	Information flow
Q14		Knowledge sharing
Q15		Information on strategies and aims
Q16	Knowledge Interpretation	Strategic alignment
Q17		Learning opportunities
Q18		Teamwork
Q19	Improvement Attitude	Active involvement in development
Q20		Active suggestions on improvements
Q21		Attitude towards change

Data source: author's own construction

For the factor of knowledge interpretation the items are:

- Q16: “All the members of the organization share the same aim, to which they feel committed.” – In the mind of the author this item aims to test whether knowledge in the organization is interpreted in a similar manner by all members and therefore in a coherent way, as strategic alignment is seen as important item in knowledge interpretation.
- Q17: “There are opportunities to learn (e.g. visit to other parts of the organization, internal training programs, etc.) so as to make employees aware of the different duties within the organization.” – The ability to experience and comprehend different areas of activity within the organizations fosters the possibility of knowledge interpretation. The item tests the degree of possibility to interpret.
- Q18: “Teamwork is a very common practice in the company.” – Working together as a team necessitates the capability of similar interpretation of knowledge and therefore this item tests this capability.

For the dimension of improvement attitude the items are:

- Q19: “Employees in your organization actively explore the current market and related new developments.” – In the mind of the author this item tries to test the active willingness of the organization to incorporate external improvements.

- Q20: “Making suggestions about internal improvements and innovations is common within your organization.” - This item tries to test the active willingness of the organization to incorporate internal improvements.
- Q21: “Employees have a positive attitude towards a continuous advancement of the organization.” – The item seeks to understand the overall attitude of the members of an organization ongoing improvement.

Measurement model: Human resource management

The procedure for the compilation and selection of the specific items relevant for the current research is similar to the operationalization mentioned above and details can be found in the appendix in the table Compilation of test items for human resource management on page 185. The first step was to compile specific items from other research and in the second step the relevant items for the current theoretical scheme are selected.

The selected items are on basis of the above deduced definition divided into five factors, namely: staffing, appraisal, rewards and compensation, human resource development (HRD), and employee participation. Each of the factors is tested via different items presumed to contribute to the make-up of the theoretical construct. Each item is assigned to a specific question respectively placeholder in the questionnaire (Q+no.). Table 17 below summarizes the selected items.

For the factor of staffing the items are:

- Q1: “The organization takes HR measures for identifying, recruiting, and retaining employees for key positions and functions.” – Talent management is in times of a shortage of professionals in many sectors of vital importance. In the mind of the author the staffing policy in an organization is seen as a cornerstone of HRM and this item seeks to test the quality of the staffing mechanisms in place in the respective organization.
- Q2: “The organization has long-term forecast for strategic workforce planning.” – The item of strategic workforce planning is understood as a key contributor to HRM which this item tries to validate.
- Q3: “The organization takes measures to refine its employer brand and in doing so distinguishes itself from competitors in a positive way.” – An important part of the staffing policy the quality of the employer brand is the third item to test the factor of staffing.

Table 17: Measurement items of human resource management

Placeholder	Factor	Item
Q1	Staffing	Talent management
Q2		Strategic workforce planning
Q3		Employer Branding
Q4	Appraisal	Appraisal policy
Q5	Rewards and Compensation	Rewards policy
Q6	Human Resource Development (HRD)	Leadership development
Q7		Vocational Education and Training (VET)
Q8		Strategic training and development
Q9	Employee Participation	Employee participation

Data source: author's own construction

The factor of appraisal is depicted by the item Q4: “Employees are being appraised based on evaluations from supervisors, peers, and customers.” – According to the author this item tests the organizations’ orientation towards a feedback based appraisal which is seen a contributing factor to the theoretical construct of HRM.

The factor of rewards and compensation is depicted by the item Q5: “The organization's reward policies are performance-linked.” – The factor of performance-linked rewards and compensation is rather straightforward and therefore tested by one direct question.

For the factor of human resource development (HRD) the items are:

- Q6: “Leadership development has a high significance in HR of the organization.” – Leadership plays a key role in HRM that is why this item tests the importance of leadership development to the organization.
- Q7: “Measures for Vocational Education and Training (VET) have a high significance in the organization.” – In the mind of the author VET is a centerpiece of human resource development and the corresponding item evaluates the importance within the organization.
- Q8: “There is a long-term strategy in the organization concerning the need for further education and training of employees.” – This item tries to find out the organizations strategic orientation towards training and development by testing the importance for the organization.

The factor of employee participation is depicted by the item Q9: “Employees (i.e. non-management) are involved in decision processes; for example when establishing strategic plans or discussing new policies.” – This item seeks to evaluate the organizations declination towards involvement of its employees in decision processes as contributing factor in the make-up of HRM.

For the author the main point of reference regarding the specific items for the conducted research is a series of studies conducted by the Boston Consulting Group and World Federation of People Management Associations (cf. 2010, 2012; Strack 2014) that show consistent results concerning the most critical topics in HRM. A compilation of the considered issues can be seen in the appendix in the table Overview of critical HRM topics and mapping with HRM dimensions on page 186. These findings are connected to the deduced dimensions of HRM and appropriate items associated.

Measurement model: Organizational Performance

The procedure for the compilation and selection of the specific items relevant for the current research was similar to the operationalization mentioned above and details can be found in the appendix in the table Compilation of test items for organizational performance on page 187. The first step was to compile specific items from other research and in the second step the relevant items for the current theoretical scheme were selected. The selected items are – on basis of the above deduced definition - divided into three factors, namely: economic performance, general competitiveness, and human resource performance. Each item is assigned to a specific question respectively placeholder in the questionnaire (Q+no.). Table 18: Measurement items of organizational performance on page 84 summarizes the selected items. After the selection the items were reviewed by professionals and by academics.

For the dimension of economic performance the items are:

- Q22: “The organizations business situation is better than sectoral average.” – In the mind of the author this item tests the perceived overall business situation of the organization in an attempt to grasp the general economic performance.
- Q23: “The development of the organizations turnover/volume of sales is better than sectoral average.” – According to the author this item concentrates on the perceived situation in terms of turnover/volume of sales in comparison with the relevant benchmark

in order to approximate the economic performance; as turnover is a central indicator for economic performance..

- Q24: “The development of the organizations' profits is better than sectoral average.” – This item concentrates on the perceived situation in terms profits in comparison with the relevant benchmark in order to sustain the approximation on the economic performance; as profit generation is a key indicator for sustainable long-lasting economic performance.

Table 18: Measurement items of organizational performance

<u>Placeholder</u>	<u>Factor</u>	<u>Item</u>
Q22	Economic Performance	Business situation
Q23		Turnover development
Q24		Profit development
Q25	General Competitiveness	Reputation
Q26		Customer loyalty
Q27		Change management
Q28	Human Resource Performance	Employee satisfaction
Q29		Employee attraction

Data source: author's own construction

For the factor of general competitiveness the items are:

- Q25: “The reputation of the organization is better than sectoral average.” – As indirect measurement for the competitiveness of the organization this item tests the perceived quality of reputation of the organization compared with the peer group.
- Q26: “The customer/client loyalty of the organizations is higher than sectoral average.” – As further indirect measurement for the competitiveness of the organization this item tests the perceived customer/client loyalty of the organization compared with the peer group.
- Q27: “The organization handles changes and changing conditions in its environment better than sectoral average.” – And as third indirect measurement for the competitiveness of the organization this item tests the perceived ability of the organization to cope with changes in its environment compared with the peer group; as change management is seen as key ability enhancing competitiveness in fast changing environments.

For the factor of human resource performance the items are:

- Q28: “The employees of the organization are more satisfied with their employer than on sectoral average.” – As the satisfaction level of employees is seen as a core element of

human resource performance in terms of motivation this item tests the perceived satisfaction level against the relevant benchmark.

- Q29: “It is easier for the organization to find qualified work force for vacant positions (e.g. skilled worker positions, apprenticeships etc.) than it is on sectoral average.” – Via the indirect measurement of whether or not an organization is able to easily find qualified work force a conclusion on its human resource performance is possible.

Identifying optimal measures for a firm’s financial performance is inherently problematic, as it is also for obtaining other sensitive data, López, Peón, Ordás (2005) point out. Given the potential competitive implications of revealing such information, it is not surprising that many respondents are hesitant to report information pertaining to such indicators as profitability and ROI (Return on Investment). In order to avoid the omission of sensitive performance data, a more indirect approach for collecting the data was utilized. Therefore, the questionnaire was made up by direct questions about respondents’ satisfaction level with their firm in terms of business situation, turnover/volume, and profits. Similar measurement of companies performance has been used before in research when financial data was either unavailable or would not allow for accurate comparisons amongst the target-group (e.g. Dess 2006; Powell 1992; Powell and Dent-Micallef 1997; Tippins and Sohi 2003). As stated by López, Peón, Ordás (2005) perceived measures of performance can be a reasonable substitute for objective measures of performance (cf. Dess and Robinson 1984) and turn out to have significant correlation with objective measures of financial performance (e.g. Hansen and Wernerfelt 1989; Lyles and Salk 2006). In the eyes of the author, the set-up of the above described research scheme is such that the relevant theoretical constructs of organizational learning, human resource management and organizational performance and their interdependencies can be tested in an optimal way, so that the theoretical research scheme that can be transferred into an independent evidence-based research model.

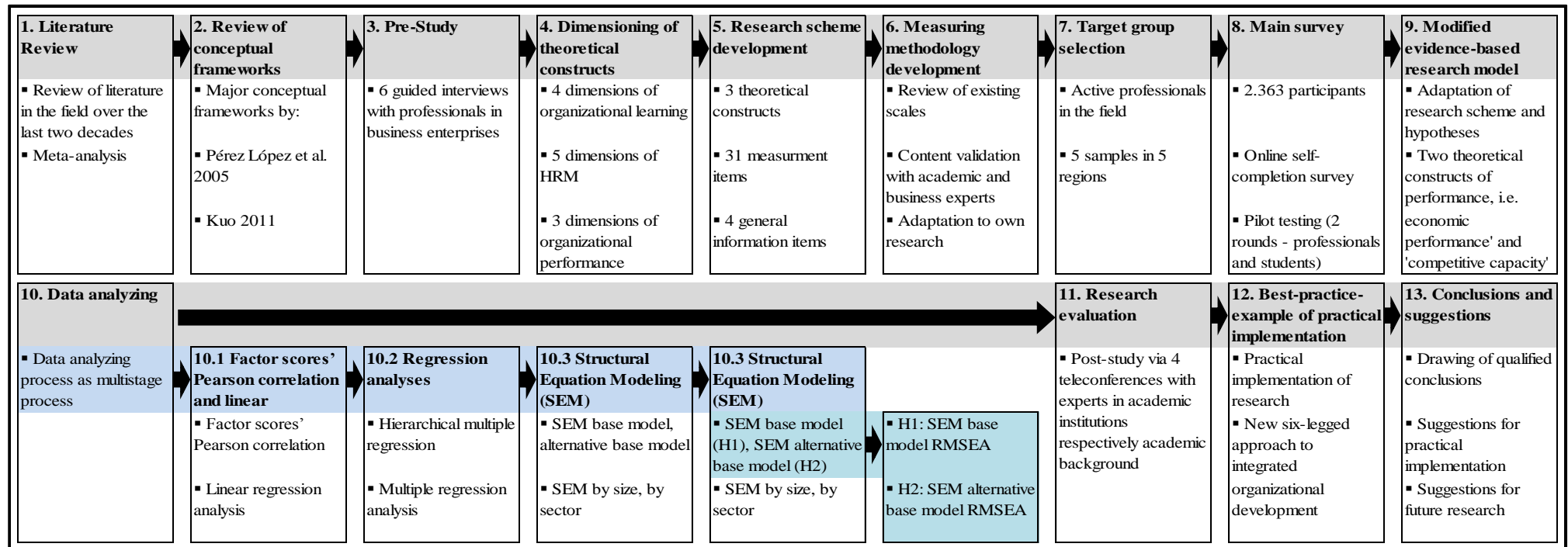
2.7 Research roadmap: the development of the research scheme and evidence based adaptation

The research process is established along a clear structured roadmap. Table 19: Research roadmap on page 87 gives a full account. Following the inherent logic the researcher initiates the process based on literature review, review of conceptual frameworks, and a pre-study and from it builds up the dimensioning of the theoretical constructs of the next developed research

scheme. After developing the methodology including target group selection, validity and reliability the next step is the data gathering process.

Within the research roadmap the key turning point is the evidence-based imperative to modify the original research scheme grounded on the findings from the partial factor analysis which clearly indicates the necessity to use two separate theoretical constructs in order to describe organizational performance, namely economic performance and competitive capacity. This necessity in describing organizational performance with two separate theoretical constructs also brought about the need to split the original hypotheses including organizational performance into two hypotheses each. This process is described in detail in the chapter below.

Table 19: Research roadmap



Data source: author's own construction

After that the data analyzing takes place using a variety of statistical methods and including differentiation via sub-group analyses. From that a best-practice example for practical implementation is derived and after that also conclusions and suggestions for practical implementation in business enterprises and for further research are extracted.

Sub-roadmap of the data analyzing process

Within the research roadmap the data analyzing process is set up as an interlocked multistage procedure with four main stages.

1st stage: After ensuring the goodness of model fit for the theoretical constructs involved via partial factor analysis Grice (2001) suggests to examine the degree of indeterminacy in the factor solutions using univocality. i.e. the extent to which factor scores are adequately or insufficiently correlated with other factors. In the data analyzing process this suggestion is put into practice by computing a series of correlation and regression analysis for the factor scores of human resource management, organizational learning, and the unearthed two sides of organizational performance, namely economic performance and competitive capacity. In the beginning factor scores' Pearson correlation and linear regression is calculated and to add more explanatory power a series of linear regression analysis between the respective factor scores is conducted.

2nd stage: The central point of factor score computation is to generate calculable item-clusters bundling properties with similar loadings. The regression analysis based on the factor scores hereinafter however cannot break up the factor scores again in single items. Therefore, a regression analysis is used to show interdependences of the level of single items. To achieve this first a hierarchical multiple regression analysis with two steps is computed; step one checks the influence of the control variables, and step two synchronizing the variability explained when adding the items of human resource management and organizational learning. Hereinafter, a multiple regression analysis is conducted breaking up the independent theoretical constructs of organizational learning and human resource management into their respective single items and looking at the influence of each of the items.

3rd stage: The next stage of statistical analysis models the structural relationship between the latent constructs of HRM, organizational learning and the dimensions of organizational performance, economic performance and competitive capacity using Structural Equation

Modeling (SEM). First of all, the base model which assumes a linear direct relationship of HRM and organizational learning on the dimensions of organizational performance is calculated. Then the alternative model is presented which models organizational learning as construct depending on economic performance, competitive capacity and HRM. Furthermore, in-depth analyses of the sample takes place by the computation of SEM by different groupings, namely the size of the business enterprise and the business sector.

4th stage: In order to evaluate the findings from the applied statistical methods a post-study is conducted with focus on the findings regarding the alternative base model from Structural Equation Modeling (SEM), as the findings of which incorporate research novelties that should be reinforced by a different scientific approach.

Sub-roadmap theses verification process

All the information in the data analyzing and hypotheses verification process has one source, namely the data basis from the online-survey where in the data gathering interdependencies between the three involved theoretical concepts are tested via 31 variables, i.e. 9 for human resource management, 12 for organizational learning, and 10 for organizational performance. In the case of the null hypothesis (H1: organizational learning positively influences organizational performance) and the alternative hypothesis (H2: organizational performance positively influences organizational learning) the effort is to clarify whether the assumed interdependencies are a case of simultaneity, i.e. where the explanatory variable is jointly determined with the dependent variable. In other words, X causes Y but Y also causes X. Research models with simultaneity are called simultaneous equations models or structural models (SEM). SEM theory is specifically set up to deal with the potential for simultaneity in a regression model. Simultaneity happens when two variables on either side of a model equation influence each other at the same time. In other words, the flow of causality is not unequivocally from one side to the other, but it is the case that

- changes in organizational learning and human resource management are causing changes in organizational performance.
- variables on the left hand side and right hand side are jointly determined.

The method to verify the fit of the research model currently the most popular measure of is the usage of the Root Mean Square Error of Approximation (RMSEA). Accordingly, in the process of testing interdependencies via SEM two base models have been used, first the base

model (H1) and second the alternative base model (H2). The threshold value for a good fit RMSEA is set at different levels by different researchers. While most analysts believe in the value of fit indices, but voice caution against strict reliance on cutoffs (e.g. Hayduk, Cummings, Boadu, Pazderka-Robinson, & Boulianne, 2007), others believe that the criterion of good fit for the whole model does not add to predictive accuracy (Barrett 2007, p. 42). Schulz, Ainley, and Fraillon (2011, p. 161) set the value for a good fit at 0.10. Furthermore, the RMSEA is artificially high for models with low numbers of degrees of freedom, i.e. the number of values in the final calculation (see e.g. Kenny, D. A., Kaniskan, B., and McCoach, D. B. 2014). With 176 cases the number of values in this work is comparatively low for what reason a slightly elevated RMSEA of 0.12 for the base model (H1) and 0.11 for the alternative base model (H2) is later well acceptable when testing the model fit via SME.

2.8 Approach to research evaluation

The findings of the above described statistical methods regarding the virtually non-existing impact of economic performance on organizational learning are a novelty and have not been expected from the original theoretical basis nor the research model. Moreover, the whole alternative base model as forwarded with the Structural Equation Modeling (SEM) in the respective sub-chapter is cross-checked for plausibility. In order to substantiate these findings a post-study is conducted. The purpose of this evaluation research is to evaluate the findings of the statistical methods via a cross-check with experts in the field validating the plausibility of the findings in existing settings. The chosen approach is a summative evaluation method which is well suited for the task as it is ment to be planned and executed after the original study is completed (cf. Mittag and Hager, 2000) and assesses the effectiveness of the previously introduced statistical findings (cf. Bortz and Döring, 2006, p. 110).

The research evaluation is an important methodical supplement in the contest of this research to rule out statistical bias based either on the statistical method or method mix applied for data evaluation or even the data base used. It also eliminates the risk that even after careful consideration in the planning process of the data gathering important contextual items were omitted. It therefore further substantiates the later findings and conclusions as the post-study strengthens the scientific base of the research.

Qualitative Data Analysis (QDA), i.e. the processes that are used to analyze the data and provide interpretation typically occurs simultaneously with the data collection. Therefore,

meaning and understanding develop in a non-linear fashion as the process progresses (cf. Thomas, 2006.). The author is leaning on five steps procedure commonly followed in qualitative data analysis (cf. Berg and Lune, 2004):

- First, the researchers need is looking for meaning and determining which pieces of data have value.
- Second, the analysis takes place by asking key questions. One approach would be to focus the analysis on the answers to a particular question or topic.
- Third, the categorization of the data and creation of a framework by identifying themes. The framework may be explanatory and is guided by the research question.
- Forth, identifying patterns and connections .
- Fifth, interpretation and explanation of findings by attaching meaning and significance to the data.

The general approaches to the process described above are content analysis as one of the most common approaches in qualitative research (cf. Alan and Bell, 2011) and narrative analysis (Clandinin and Connelly, 2000). Both approaches combined offer a comprehensive way of analysis and interpretation, as content analyses focusses on certain key-words or terms to extract meaning and complementary narrative analysis concentrates on the whole story or examples used in the context.

Data gathering in the post-study is carried out as a series of semi-structured or guided interviews amongst experts in the field with academic background and practical experience⁶ in research institutions, institutions of higher education and governmental chambers. The number of experts is set to four.

All experts have been selected because of their research expertise with special emphasize on research evaluation. All experts have a long-lasting practical background enabeling them to make qualified input on the matter. An overview over the chosen experts is given in the appendix in the table Post-study: Overview of experts for teleconferences on page 211.

⁶ Dates of guided-interviews: 03.12.2018, 12.12.2018, and 17.12.2018. Names of institutions and interview partners are known to the author. The institutions and/or interview partners chose for reason of general privacy policy to remain anonymous.

The interviews were held via teleconference sessions with the dialogue partners and were conducted in a one-to-one setting between dialogue partner and researcher. Prior to the start of the interview, the dialogue partners were asked for consent and agreed to be interviewed. Notes were taken during each interview in order to record information. Interviews lasted between 15 and 25 minutes. The dialogue partners were confronted with each of the questions at a time. The questions were open-ended and allowed the participants to reflect and respond to each question for as long as necessary. Also, participants were encouraged to answer freely in order to encourage them to offer their own opinion and to maybe find out aspects of the themes in question which had not been considered yet.

The evaluation results of the conducted post-study underline the results of the applied statistical methods respectively the make-up of the theoretical research scheme. A summary of the outcomes of the pre-study can be found in the appendix on page 209 in the table Research evaluation: post-study summary of main outcomes. First (question post-1), on the question of economic performance, i.e. turnover or profit margin development of a company, correlating with the extent of organizational learning, i.e. knowledge acquisition, distribution and interpretation and/or the improvement attitude, the dialogue partners sustain the findings from the above described statistical methoses that

- the alternative model is very plausible but depends on the circumstances. Namely whether or not (economic) success is channeled into organizational learning, i.e. knowledge acquisition, distribution etc. and the development of respective corporate structures fostering organizational learning
- the connection is very plausible but dependent on the size of the company. In SME there is generally speaking no active organizational learning and/or human resource management. With growing size organizations realize respective structures to foster organizational learning. On the other side it is the case that these structures are abolished once the organization needs to downsize.
- the connection also depends on the corporate culture. If there is an attitude towards learning, i.e. an improvement attitude, economic performance can be used to further

strengthen organizational learning. but on the other hand economic performance cannot per se be used to introduce the improvement attitude.

Second (post-2), asked about the impact of competitive capacity , i.e. reputation, customer loyalty etc. of a company, on the extent of organizational learning, i.e. knowledge acquisition, distribution and interpretation and/or the improvement attitude, taking place within the company the feedback supports the results from the above described study

- there are certainly feedback processes from competitive capacity influencing organizational learning. Positive values of competitive capacity initiate positive socio-economic effects in general, positive corporate culture etc.
- in general terms the two (theoretical) constructs are much more interlinked with each other (than economic performance and organizational learning) in a way that better competitive capacity, e.g. customer loyalty etc., requires a better organizational learning structure to e.g. center processes around customer needs. The assumption therefore is very plausible.

Third, (post-3), answering the question whether the direction of influence can be set from organizational performance, i.e. economic performance and/or competitive capacity, to organizational learning and under what circumstances the responses evidence

- HRM can positively influence organizational learning. However, it is important to note that HRM can be a necessary condition for organizational learning in the knowledge management areas, i.e. knowledge acquisition, distribution, and interpretation, but can never be a sufficient condition for it, because organizational learning is influenced also by other factors, e.g. leadership processes to initiate and moderate the improvement attitude.
- organizational learning depends very much on the improvement attitude or willingness to learn and management in order to implement the improvement attitude via corporate structures.

- the assumption is plausible, because an organization that values HRM is much more likely to incorporate organizational learning in its corporate structure. The two (theoretical) concepts are again very much connected with each other and reciprocal effects/interdependencies are absolutely plausible.

And fourth (post-4), do you experience that a combined approach, i.e. the usage of items from human resource management and organizational learning, correlates with the extent of organizational performance, i.e. economic performance and competitive capacity, and under what circumstances the teleconference responses evidence that both directions are plausible. The connection can up to a certain extent be described as a feedback loop that can turn both ways.

3 Quantitative and qualitative analysis of the relationship between organizational learning and human resource management on organizational performance

Leaning on the suggestions of Siems (2003: 211) the data analyzing procedure is conceptualized suitable for the specific hypotheses in the context. Organizational performance, organizational learning as well as human resource management are complex, latent and abstract constructs and their interdependencies are best measured via a structural or causal analysis (Gölnzer 2014; Homburg and Giering 1996: 5 et seqq.).

3.1 Impact of organizational learning and human resource management on organizational performance: partial factor analysis

Leaning on the suggested proceedings by Siems (2003) after ensuring sufficient validity and reliability of the single underlying models to be measured in a next step the interdependencies between the models respectively theoretical concepts were tested via a factor analysis. Factor analyses are based on the correlation matrix of the variables involved but the magnitude and significance of correlations are dependent on the sample size (Institute For Digital Research and Education 2014) respectively the number of responses. The recommended number of responses or cases differs in scientific literature and there are two categories of general recommendations in terms of minimum sample size in factor analysis. One category says that the absolute number of cases/responses is important, while the other argues that the subject-to-variable ratio is important. Drawing from earlier research in the first category, MacCallum et al. (1999) point out that the number should be not less than 100, whereas Garson (2008) recommends at least 150 cases. In the second category O'Rourke and Hatcher (2013: 9) recommend that the number of cases should be 5 times the number of variables, or at least 100. As in this study the questionnaire encompasses 35 items/questions, the recommended number of responses corresponding to this calculations is 175 (i.e. 35×5). Furthermore, as a rule of thumb, a bare minimum of 10 observations per variable/question is necessary to avoid computational difficulties (Institute For Digital Research and Education 2014). The total sample size in this research project encompasses 177 cases and ergo meets all above cited recommendations in terms of sample size.

A partial factor analysis of the three constructs was executed separately with the respective items HRM (Q1 – Q9); organizational learning (Q10 – Q21) and organizational performance (Q22 – Q 29).

For HRM the result was clear and only one component was extracted, as the items loaded well together (KMO: 0.864, $p < 0,001$) with respect to the eliminated items as described above. Full details on the outcome can be found in the appendix in the table Extraction partial factor analysis HRM on page 216.

The same is true for organizational learning (KMO: 0.859, $p < 0,001$). Full details on the outcome can be found in the appendix in the table Extraction partial factor analysis organizational learning on page 216.

The extraction of organizational performance yielded an interesting outcome with the theoretical construct of organizational performance being divided into two dimensions respectively factors with an Eigenvalue > 1 . The so-called Eigenvalue denominates items that load together well, respectively are strongly correlated and factors found in this way with an Eigenvalue of 1.00 or higher as a widely accepted threshold (see for example Lance and Vandenberg 2009) are considered stand-alone components. Following this general accepted rule and specifically based on the suggestion put forward by Anzur (2015a) two components , namely ‘economic performance’ (Q22, Q23 and Q24) and ‘competitive capacity’ (Q25-Q29) are extracted. Table 20 below shows the two extracted components with their respective eigenvalues, the amount of variance explained and the included items. Full details on the outcome can be found in the appendix in the table Extraction partial factor analysis organizational performance on page 217.

Table 20: Partial factor analysis eigenvalues of economic performance and competitive capacity

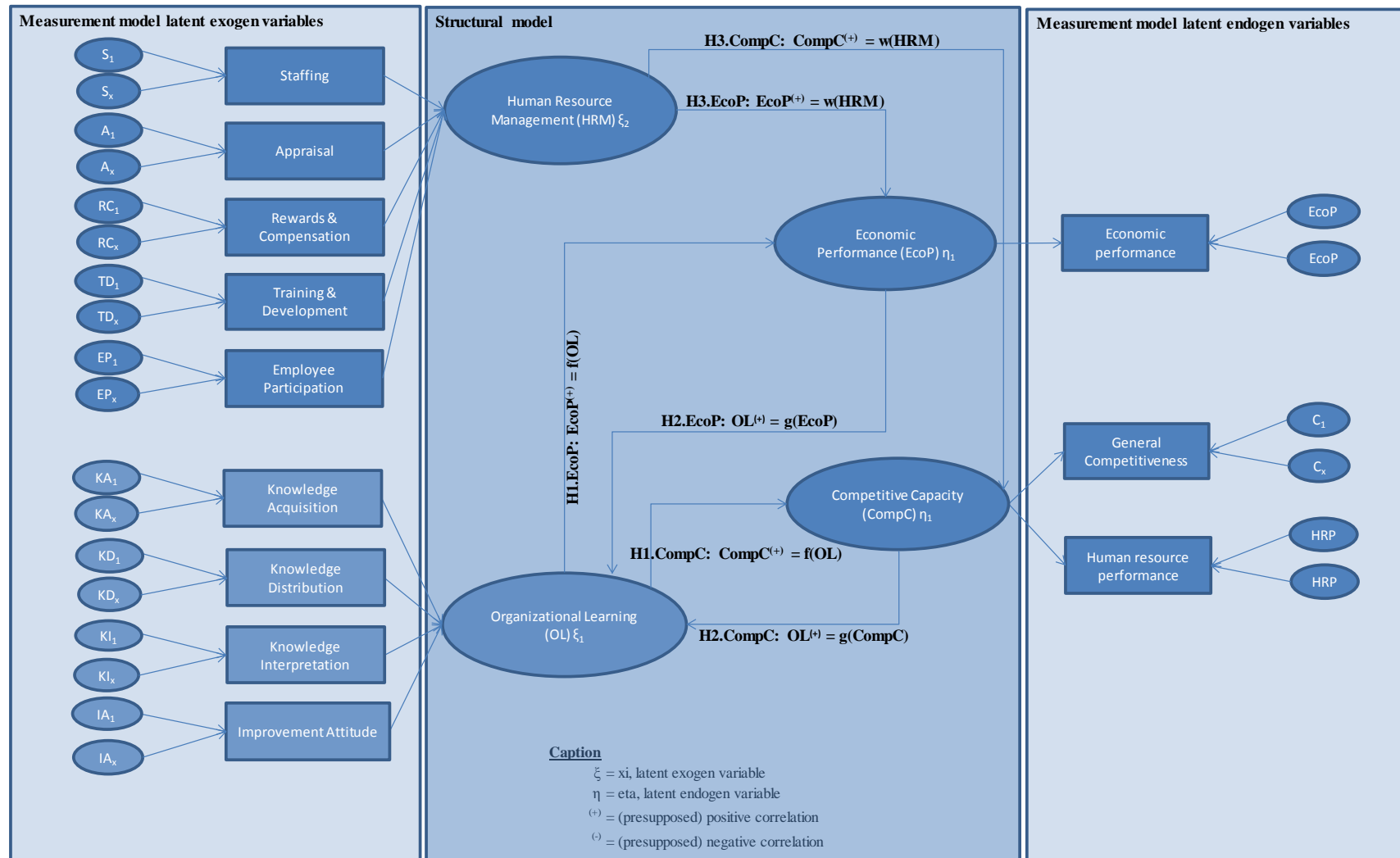
Component	Total Eigenvalue	% of Variance	Included Items
Economic performance	4.298	53.721	Q22: Business situation Q23: Turnover development Q24: Profit development
Competitive capacity	1.131	14.135	Q25: Reputation Q26: Customer loyalty Q27: Change management Q28: Employee satisfaction Q29: Employee attraction

Data source: author’s own construction

The assumption of organizational performance as being a coherent unidimensional theoretical concept was altered due to the evidenced facts and split up into two separate evidence-based concepts. First, economic performance including all financial/economic items like turnover and profit margin and second, competitive capacity measuring all items of human resource performance and general competitiveness. Subsequent data analyses all refer to the modified evidence-based research scheme.

3.2 Modified evidence-based research model

After the partial factor analysis showed the construct of organizational performance being divided into two evidence-based constructs, namely economic performance, incorporating the items from the theoretical dimension of economic performance on the one hand and competitive capacity on the other, encompassing the items from the theoretical dimension of both general competitiveness and human resource performance the research scheme is modified to an independent evidence-based research model. And also, the hypotheses that involve the concept of organizational performance are split up into two hypotheses each, one regarding economic performance and one with regards to competitive capacity. Figure 4 below depicts the modified independent evidence-based research model.



The modified independent evidence-based research model is the author's own construction

Figure 4: Modified independent evidence-based research model

As shown in the modified independent evidence-based research model the theoretical construct of organizational performance was split up into economic performance encompassing the items from the dimension of economic performance which were loading well together in the previous partial factor analysis. The items are:

- Q22: The organizations business situation is better than sectoral average.
- Q23: The development of the organizations turnover/volume of sales is better than sectoral average.
- Q24: The development of the organizations' profits is better than sectoral average.

Second, another evidence-based concept of competitive capacity was introduced incorporating all items from the dimensions of general competitiveness on the one hand which are:

- Q25: The reputation of the organization is better than sectoral average.
- Q26: The customer/client loyalty of the organizations is higher than sectoral average.
- Q27: The organization handles changes and changing conditions in its environment better than sectoral average.

And human resource performance on the other hand which are:

- Q28: The employees of the organization are more satisfied with their employer than on sectoral average.
- Q29: It is easier for the organization to find qualified work force for vacant positions (e.g. skilled worker positions, apprenticeships etc.) than it is on sectoral average.

As a consequence of the evidence-based breaking-up of organizational performance into two separate constructs, also the hypotheses that involve the original theoretical construct of organizational performance have to be split up. First the main hypothesis has to be applied to both spheres of organizational performance, namely economic performance:

- H1.EcoP: Organizational learning positively influences economic performance
- H1.CompC: Organizational learning positively influences competitive capacity

Second, the sub-hypothesis that the direction of the influence runs in the other direction from organizational performance to organizational learning has to be altered:

- H2.EcoP: economic performance positively influences organizational learning.
- H2.CompC: Competitive capacity positively influences organizational learning.

Third, the sub-hypothesis (H3) assuming human resource management positively influencing organizational performance has to be modified:

- H3.EcoP: Human resource management positively influences economic performance
- H3.CompC: Human resource management positively influences competitive capacity

These evidence-based modified hypotheses are the basis for the following data analyzing process. In the mind of the author the evidence-based need for separation of the construct of organizational performance was not to be expected, given the fact that management authorities as well as the research community (see e.g. Oswald et al. 2014) tend to assume that economic success as a general rule goes together with human resource performance.

3.3 Factor scores' Pearson correlation and linear regression

The process of the above described factor analysis revealed two constructs regarding organizational performance instead of the hypothesized one coherent construct. In order to look deeper into the structure of economic performance and competitive capacity and their relations with organizational learning and HRM factor scores are produced and the respective correlations analyzed, as *“for instance, they can be correlated with measures of different constructs to help clarify the nature of the factors or they can be entered as predictor variables in multiple regression analyses or as dependent variables in analyses of variance.”* (Grice 2001: 430). Following a suggestion by DiStefano, Zhu and Mindrila (2009) after an exploratory factor analysis, factor scores may be computed and used in subsequent analyses which are in the current case: organizational learning, HRM, economic performance, and competitive capacity. As the factor scores possess an interval scaling it is also possible to use parametric correlation and regression analysis on the subsequent data.

A paramount consideration when creating factor scores is the problem of “indeterminacy” of the scores (cf. Grice 2001 for detailed explanations). Indeterminacy arises, as stated by DiStefano, Zhu and Mindrila (2009b) *“from the fact that, under the common factor model, the parameters are not uniquely defined, due to the researcher’s choice of the communality estimate. This means that there is not a unique solution for the factor analysis results and, theoretically, an infinite number of solutions could account for the relationships between the items and factor(s). Therefore, it also follows that the factor scores are not uniquely defined.”* Grice (2001) therefore suggests to examine the degree of indeterminacy in the factor solutions using univocality. i.e. the extent to which factor scores

are adequately or insufficiently correlated with other factors in the same analysis. In the following this suggestion is put into practice by computing a series of correlation respectively regression analysis. Following the suggestions by Gölzner (2015a) the process is realized according to the following scheme: correlation analysis (Pearson correlation), linear regression.

First of all, a **Pearson correlation** (r-value) as measure of the degree of the linear relationship between each of the variables is conducted. For investigating the hypothesized relationship a p-value of significance of 0.05 is set in advance. For data resulting in a p-value of less than that specified in advance, significance can be claimed and concluded that a relationship really exists. The following section gives details of the Pearson correlations computed for the respective factor scores.

To add more explanatory power a series of **linear regression** analysis between the respective factor scores was conducted, as the Pearson correlation can only provide the direction of a relationship, whereas a linear regression also explains the variability in the dependent variable accounted for by the independent variable (R Square). Supplementary graphs. Also, the respective datasets were scrutinized for homogeneity of variance respectively their heteroscedasticity via the respective histograms.

First, the Pearson correlation for the factor scores of **HRM and economic performance** indicates no significant correlation with $p=0.176$ and therefore no correlational relationship can be established. As the results are statistically not significant on the predefined level, no further interpretation about the connection between HRM and economic performance can take place and it can only be stated that no correlation can be evidenced. Table 21 below gives the details on the respective degrees of freedom, the Pearson correlation and the significance.

Table 21: Factor scores Pearson correlation HRM and economic performance

Pearson Correlation	.109
P (2-tailed)	.176
N	156

** . Correlation is significant at the 0.01 level (2-tailed).

Data source: author's own construction

Second, the Pearson correlation for the factor scores of **HRM and competitive capacity** shows a significant correlation at the 0.01 level (2-tailed). Even if with a relatively weak positive linear relationships of $r(157)=0.330$. The outcome suggests a moderate connection between HRM and competitive capacity. Table 22 below gives the details on the respective degrees of freedom, the Pearson correlation, and the significance.

Table 22: Factor scores pearson correlation HRM and competitive capacity

Pearson Correlation	.330**
P (2-tailed)	.000
N	157

** . Correlation is significant at the 0.01 level (2-tailed).

Data source: author's own construction

Furthermore, the linear regression evidences with R Square 0.109 that mere 10.9% of the changes of the items in competitive capacity, i.e. items of general competitiveness and human resource performance like employee satisfaction, can be accounted for by HRM. Table 23 below gives the model summary with full details on the linear regression.

Table 23: Linear regression independent competitive capacity on dependent HRM model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.330 ^a	.109	.103	.94219676

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Dependent Variable: REGR factor score 1 for analysis 1

Data source: author's own construction

Third, the Pearson correlation for the factor scores of **organizational learning and economic performance** show a significant correlation at the 0.05 level (2-tailed) with a moderate uphill, i.e. positive linear relationships of $r(153)=0.199$. The result states that outcomes of economic performance are only moderately connected with the development of organizational learning. Table 24 below gives the details on the respective degrees of freedom, the Pearson correlation, and the significance.

Table 24: Factor scores Pearson correlation organizational learning and economic performance

Pearson Correlation	.199*
P (2-tailed)	.014
N	153

** . Correlation is significant at the 0.05 level (2-tailed).

Data source: author's own construction

Furthermore, the linear regression evidences with R Square 0.040 that mere 4% of the changes of the items in economic performance, i.e. items like turnover can be accounted for by organizational learning. Table 25 below gives the model summary with full details on the linear regression.

Table 25: Linear regression independent organizational learning on dependent economic performance model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.199 ^a	.040	.033	.98999710

a. Predictors: (Constant), REGR factor score_1 for analysis 1

b. Dependent Variable: REGR factor score_1 for analysis 1

Data source: author's own construction

Fourth, the Pearson correlation for the factor scores of **organizational learning and competitive capacity** show a significant correlation at the 0.01 level (2-tailed). The positive relationship of $r(153)=0.365$ can be seen as moderate to high stating that the two theoretical constructs are substantially connected with each other in a way that organizational learning influences competitive capacity substantially. Table 26 below gives the details on the respective degrees of freedom, the Pearson correlation and the significance level.

Table 26: Factor scores Pearson correlation organizational learning and competitive capacity

Pearson Correlation	.365**
P (2-tailed)	.000
N	153

** . Correlation is significant at the 0.01 level (2-tailed).

Data source: author's own construction

Furthermore, the linear regression evidences with R Square 0.133 that 13.3% of the changes of the items in competitive capacity, i.e. items of general competitiveness and human resource performance like employee satisfaction, can be accounted for by organizational learning. Changes in a business enterprises organizational learning, e.g. in the item pack of knowledge distribution etc., account for 13.3% of changes in competitive capacity. Table 27 below gives the model summary with full details on the linear regression:

Table 27: Linear regression independent organizational learning on dependent competitive capacity model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.365 ^a	.133	.127	.93922887

a. Predictors: (Constant), REGR factor score_1 for analysis 1

b. Dependent Variable: REGR factor score_1 for analysis 1

Data source: author's own construction

Fifth, the Pearson correlation for the factor scores of **economic performance and competitive capacity** shows a significant correlation at the 0.01 level (2-tailed). The relationship of $r(157)=0.589$ can be seen as quite strong. The result therefore underline that the different parts of an business enterprises overall performance are very strongly connected with each other. Outcomes in financial/economic items and items of general competitiveness and human resource performance therefore have a strong link. Table 28 below gives the details on the respective degrees of freedom, the Pearson correlation, and the significance.

Table 28: Factor scores Pearson correlation economic performance and competitive capacity

Pearson Correlation	.589 ^{**}
P (2-tailed)	.000
N	157

** . Correlation is significant at the 0.01 level (2-tailed).

Data source: author's own construction

Additionally, linear regression highlights with R Square 0.347 that 34.7% of the changes in economic performance can be explained by changes in competitive capacity. The outcome underlines therefore that a significant amount of variability in a business enterprises financial/economic performance depends on the development of items of general competitiveness and human resource performance. Table 30: Hierarchical multiple regression organizational learning on economic performance model summary on page 107 gives full details.

Table 29: Linear regression independent competitive capacity on dependent economic performance model summary

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.589 ^a	.347	.343	.80689404

a. Predictors: (Constant), REGR factor score 1 for analysis 1

b. Dependent Variable: REGR factor score 1 for analysis 1

Data source: author's own construction

The outcome remains unchanged when the direction of dependency is altered to independent economic performance and dependent competitive capacity. However, clarification of the direction of influence regarding the two theoretical constructs is made in chapter Structural Equation Modeling Alternative Base Model, organizational performance as independent constructs starting from page 119.

With respect to the theoretical concept of organizational performance these findings point in the same direction as the factor analysis, namely that organizational performance indeed is no coherent concept but at least consists of two spheres: the financial/economic items (Q22 – Q24), e.g. business situation, turnover and profit, and the items of general competitiveness and human resource performance (Q25 – Q 29) like reputation and level of employee satisfaction.

In the mind of the author the findings of the Pearson correlation with regard to the impact of HRM on organizational performance are a logical consequence of the fact that economic performance is much more influenced by external factors like macroeconomic ramifications and so on and therefore cannot easily be influenced by measures taken within a business

enterprise in terms of HRM. On the other side competitive capacity is much more dependent on internal factors like motivation of staff etc. that can more significantly be influenced by internal measures taken under the concept of HRM. The implication for management is that business enterprises should concentrate on HRM measures in order to better their competitive capacity which also sustains their respective economic performance via indirect profitability, as the correlation between competitive capacity and economic performance is strong.

3.4 Testing interdependencies as basis for confirmation or disconfirmation of the hypotheses: regression analysis

The central point of factor score computation – following the suggestions by Anzur (2015b) - is to generate calculable item-clusters bundling properties with similar loadings. The regression analysis based on the factor scores hereinafter however cannot break up the factor scores again in single items. Therefore, a regression analysis for its part is, as underlined by Gölzner (2015), useful in order to deal with the interdependences of the dependent variables. In order to do so, one needs to analyze also every independent item in order to see dependencies and their significance between dependent variable and each independent item. For this is the basis for confirmation or disconfirmation of the hypotheses. Gölzner (2015) suggests a hierarchical regression as method of choice suitable to analyze the current problem. A common hierarchical regression specifies two blocks of variables: a set of control variables entered in the first block and a set of predictor variables entered in the second block (The University of Texas at Austin 2005). In the following R^2 change, i.e. the increase when the predictor variables are added to the analysis, is interpreted rather than the overall R^2 for the model with all variables entered.

Impact of organizational learning on organizational performance factor scores

The analyze procedure regarding the influence on the variability of the two theoretical constructs unearthed in the factor analysis, namely the factor scores economic performance and competitive capacity, is executed in two steps:

- Hierarchical multiple regression analysis with two steps; step one checks the influence of the control variables (Q32 – Q34), and step two synchronizing the variability explained when adding the items of the theoretical constructs of organizational learning or HRM.
- Hereinafter, a multiple regression analysis is conducted breaking up the independent theoretical constructs of organizational learning and HRM into their respective single items and looking at the influence of each of the items.

To evidence the **influence of organizational learning on the factor score economic performance** first a **hierarchical multiple regression analysis** was conducted. Both the control variables (Model 1: 0.020) and the variables of organizational learning (Model 2: 0.024) predict to a statistically significant degree changes in economic performance. Full details can be seen from the table ‘Hierarchical multiple regression ANOVA organizational learning on ’ on page 217. The threshold level for significance is set below 0.05 following a commonly accepted approach as suggested e.g. by Nuzzo (2014). Table 30 below gives a summary of the hierarchical multiple regression.

Table 30: Hierarchical multiple regression organizational learning on economic performance model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.256 ^a	.066	.046	.98
2	.425 ^b	.181	.088	.959

Data source: author’s own construction

Furthermore, as shown in the table above the percentage of variability in the dependent variable that can be accounted for by all the predictors, i.e. control variables and variables of organizational learning, went up from 6.6% to 18.1%. The change in R Square is a way to evaluate how much predictive power was added to the model by the addition of another set of variables in this case the items of organizational learning. In the table above this change is evidenced by the value of R Square for the models 1 and 2. The change between 6.6% and 18.1% in this case signals the net effect of 11.5% of variability of economic performance explained by organizational learning. In the mind of the author therefore organizational learning can be seen as an important predictor for economic performance.

Regarding the influence of the single items of organizational learning on the factor score economic performance respectively the item cluster generated in the wake of the factor analysis the following **multiple regression analysis** shows that the evidenced correlations all are significant, i.e. below 0.05 as threshold, as shown in the table ‘Level of significance multiple regression analysis economic performance for organizational learning’ on page 219. Regarding the concrete predictive power all items of organizational learning have a positive correlation with economic performance. Meaning that all single variables of organizational learning positively contribute to economic performance. However, none of the single items of

the theoretical construct of organizational learning, i.e. Q10-Q21, reaches a Pearson correlation of 0.3 considered the threshold for a meaningful influence. Table 31 on page 108 gives details on the correlations. The table shows the single items of organizational learning on the left hand side and the degree of positive correlation on the right hand side sorted by degree of correlation in descending order. The extreme characteristic if the explanatory power of a single item would correspond to zero would result in a value of ,000 or on the other extreme 1,000 if a single item would explain all of the variance.

This signals that the amount of variance in economic performance explained by each item of organizational learning is limited, whereas organizational learning as a construct has a strong impact. Furthermore, it is interesting to see that highest correlations are reached for the combined item pack of the factor improvement attitude, namely active involvement in development (Q19: 0,239), active suggestions on improvements (Q20: 0,233), and attitude towards change (Q21: 0,219). Suggesting therefore that active involvement of staff in the organization explains variation in e.g. turnover, profit margins and so on and so forth. Also, the items of the factor knowledge acquisition, especially research and development (Q10: 0,192), innovation (Q11: 0,175) show high impact. Furthermore, results point out that items of the factor knowledge distribution, namely knowledge sharing (Q14: 0,149) and information on strategies and aims (Q15: 0,137) positively impact on economic/financial performance.

Table 31: Multiple regression economic performance by organizational learning component matrix'

Correlations	
Q19. Employees in your organization <u>actively explore</u> the current market and related new developments.	,239
Q20. <u>Making suggestions</u> about internal improvements and innovations is common within your organization.	,223
Q21. Employees have a positive <u>attitude towards</u> a continuous <u>advancement</u> of the organization.	,219
Q10. <u>Research and development (RandD)</u> is of high significance within the organization.	,192
Q11. The internal systems and procedures support <u>innovation</u> .	,175
Q14. The <u>sharing of knowledge</u> and experience is common within your organization (e.g. by sharing best-practices).	,149
Q15. Employees are informed about the <u>strategies and aims</u> of the organization.	,137
Q12. Employees in your organization actively improve their professional competencies.	,134

Q16. All the members of the organization share the same aim, to which they feel committed.	,122
Q17. There are <u>opportunities to learn</u> (e.g. visit to other parts of the organization, internal training programs, etc.) so as to make employees aware of the different duties within the organization.	,110
Q18. Teamwork is a very common practice in the company.	,091
Q13. <u>Information</u> about the latest innovations and changes in the organization is continuously <u>given</u> to the staff.	,084

Data source: author's own construction

On the other hand results show that items that respond to mere information giving (Q13: 0.084) or the possibility of information acquisition (Q17: 0.11) have the least significant correlations with economic performance. Providing information respectively the possibility or access to information does not seem to be enough to explain variation in economic performance. Ergo, it can be concluded that organizational learning in a meaningful way contributes to economic performance only when the approach includes the item pack of the factor improvement attitude with the possibility of active involvement in the organization.

An implication for management in business enterprises therefore clearly is that active involvement should be used in order to help organizational learning in the respective business enterprise and by doing so bettering economic performance. Especially measures in the field of the improvement attitude, e.g. through a corporate proposal system or employee participation models, are recommended as the corresponding test items evidenced significant impact.

In order to evaluate the predictive power of **organizational learning on the factor score competitive capacity** in a first step a **hierarchical multiple regression analysis** was conducted. Table 32 below shows the respective model summary. Full details can be seen in the appendix in the table 'Hierarchical multiple regression ANOVA organizational learning on ' on page 218. Both the control variables (Model 1: 0.046) and the variables of organizational learning (Model 2: <0.001) predict to a statistically significant degree changes in competitive capacity when evaluating on the same grounds of significance as explained above.

Table 32: Hierarchical multiple regression organizational learning on competitive capacity model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.233 ^a	.054	.034	.979
2	.593 ^b	.351	.277	.847

Data source: author's own construction

Also, as shown in the table above the percentage of variability in the dependent variable that can be accounted for by all the predictors, i.e. control variables and variables of organizational learning, went up from 5.4% to 35.1%. The change in R Square is a way to evaluate how much predictive power was added to the model by the addition of another set of variables in this case the items of organizational learning. In this case the net effect is 29.7% of variability of competitive capacity explained by organizational learning. Again, in the mind of the author therefore organizational learning can be seen as a predominant predictor for competitive capacity.

With regard to competitive capacity results of the **multiple regressions** – in an analogy to economic performance – proof that all items of organizational learning have a significant positive correlation with competitive capacity. The account en detail is given in the appendix in the table Level of significance multiple regression analysis competitive capacity for organizational learning on page 219. Looking at the respective component matrix it is evident that the single items of organizational learning have in general higher correlations or explanatory power with competitive capacity than economic performance. Table 33 on page 111 gives details on the correlations.

Especially the item pack of the factor improvement attitude (Q21: 0,374, Q20: 0.318) have meaningful positive impact on competitive capacity. Also, items of the factor knowledge acquisition evidence a heavy impact, especially research and development (Q10: 0,365) and innovation (Q11: 0,331). Furthermore, results point out that the item knowledge sharing (Q14: 0,279) of the factor knowledge distribution positively impacts on the general competitiveness and human resource performance. Results therefore show that organizational learning is of meaningful importance in terms of change in competitive capacity when it incorporates elements of active involvement of the staff, active development, and the possibility to innovate which in the mind of the author can be seen as important suggestions for

management in business enterprises. This notion by the author, namely that the item of active involvement is key in change processes respectively in order to achieve organizational performance is supported also by Bratz (2017). Whereas mere information giving was not enough to get them to commit to the change respectively learning process and therefore also no change in organizational performance can be achieved (cf. Bratz 2017).

Furthermore, given the fact that organizational learning explains more variance of competitive capacity, i.e. items like employee satisfaction, than it does for economic performance, i.e. items like profitability, and that competitive capacity on its part has considerable influence on economic performance, as evidenced above with a correlation of 0.589 of the two factor scores, it can be concluded that the influence of organizational learning on economic performance is largely via indirect profitability.

Table 33: Multiple regression ‘competitive capacity by organizational learning component matrix

Correlations	
Q21. Employees have a positive <u>attitude towards</u> a continuous <u>advancement</u> of the organization.	,374
Q10. <u>Research and development</u> (RandD) is of high significance within the organization.	,365
Q11. The internal systems and procedures support <u>innovation</u> .	,331
Q20. <u>Making suggestions</u> about internal improvements and innovations is common within your organization.	,318
Q18. Teamwork is a very common practice in the company.	,293
Q14. The <u>sharing of knowledge</u> and experience is common within your organization (e.g. by sharing best-practices).	,279
Q16. All the members of the organization share the same aim, to which they feel committed.	,237
Q12. Employees in your organization actively improve their professional competencies.	,235
Q19. Employees in your organization actively explore the current market and related new developments.	,235
Q13. Information about the latest innovations and changes in the organization is continuously given to the staff.	,222
Q17. There are opportunities to learn (e.g. visit to other parts of the organization, internal training programs, etc.) so as to make employees aware of the different duties within the organization.	,221
Q15. Employees are informed about the strategies and aims of the organization.	,184

Data source: author’s own construction

The explanation of the more direct impact of organizational learning on competitive capacity derives, according to the author, from the fact that items of organizational learning, e.g. the possibility to make suggestions about internal improvements (item Q20), have in terms of a timeline logically a more direct influence on the items of competitive capacity, e.g. motivation of employees, whereas the influence timewise on items of economic performance, e.g. turnover and profit margin, takes longer to manifest itself and in the interim period more influencing variables tend to intervene and ergo are watering down the measureable effects and add to statistical noise when measuring the effects.

Furthermore, sustaining the original research hypothesis (H1), namely organizational learning positively influences organizational performance, it can be noted that all items of organizational learning are positively correlated with both economic performance and competitive capacity and therefore positively contribute to the overall organizational performance.

As concrete measures for implementation in business enterprises the author suggests based on the facts presented above measures first in the field of knowledge acquisition such as the strengthening of operational research and development. And second in the field of improvement attitude with concrete measures including the setup of internal processes supporting active involvement in development and change processes, e.g. using a corporate proposal system.

Impact of human resource management on organizational performance factor scores

As done with organizational learning, in order to evaluate the predictive power of **HRM on the factor score economic performance** in a first step a **hierarchical multiple regression analysis** was conducted. As shown in the table Hierarchical multiple regression ANOVA HRM on on page 218 in the appendix the control variables (Model 1: 0.011) predict to a statistically significant degree changes in economic performance when evaluating on the same grounds of significance as explained above. The variables of HRM (Model 2: 0.262) however, can under the same condition not be further evaluated, as their influence is found not to be statistically significant.

Results of the **multiple regression analysis** of the single items of HRM, namely Q1-Q9, show that only two single variables (Q1: 0.088, Q9: 0.090) can be counted as significant predictors for economic performance, as shown in the appendix in table Level of significance multiple regression analysis economic performance for HRM on page 220. These two items

also add some explanatory power. Q1 with a correlation of 0.109 / 10.9% and Q9 with a correlation of 0.108 / 10.8%. Table 34 on page 113 gives the full details.

It therefore can in the eyes of the author be concluded that the theoretical construct of HRM as a whole does not have significant explanatory power when it comes to economic performance. However, within the theoretical construct of HRM there are variables, namely talent management (Q1: 0,109), employee participation (Q9: 0,108), and performance-linked reward policies (Q5: 0,099) that do have significant predictive power and some level of correlations that should be taken into account.

Table 34: Multiple regression economic performance by HRM component matrix

Correlations	
Q1. The organization takes HR <u>measures for identifying, recruiting, and retaining employees</u> for key positions and functions.	,109
Q9. Employees (i.e. non-management) are <u>involved in decision processes</u> ; for example when establishing strategic plans or discussing new policies.	,108
Q5. The organization's <u>reward policies are performance-linked</u> .	,099
Q2. The organization has long-term forecast for strategic workforce planning.	,098
Q6. Leadership development has a high significance in HR of the organization.	,093
Q8. There is a long-term strategy in the organisation concerning the need for further education and training of employees.	,081
Q4. Employees are being appraised based on evaluations from supervisors, peers, and customers.	,062
Q3. The organization takes measures to refine its employer brand and in doing so distinguishes itself from competitors in a positive way.	,054
Q7. Measures for Vocational Education and Training (VET) have a high significance in the organization.	,032

Data source: author’s own construction

Accordingly management should not neglect HRM altogether when it comes to actively sustaining economic performance but should much rather critically select the single measures. Active involvement of employees is seen as item also contributing to economic performance triggering the suggestion to setup structures fostering employee participation in decision making, e.g. by implementing bottom-up processes on a corporate strategic level or expert teams working on the level of operational policies and practices. Furthermore, HR measures in the field of recruitment and retaining of key positions (talent management) within the business enterprise are as suggested by the data likely to sustain also the economic

performance. The author suggests for implementation in business enterprises a talent management scheme. Furthermore, it is suggested that special attention is given to the retainment of key positions, e.g. by implementing career-pathing models offering long-term perspectives to key talents.

In order to evaluate the predictive power of **HRM on the factor score competitive capacity** in a first step a **hierarchical multiple regression analysis** was conducted. As shown in the table Hierarchical multiple regression ANOVA HRM on on page 218 in the appendix both the control variables (Model 1: 0.027) and the variables of HRM (Model 2: 0.002) predict to a statistically significant degree changes in competitive capacity when evaluating on the same grounds of significance as explained above. Table 35 below gives details.

Table 35: Hierarchical multiple regression HRM on competitive capacity model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.245 ^a	.060	.041	.974
2	.442 ^b	.196	.127	.929

Data source: author's own construction

Furthermore, as shown in the table above the percentage of variability in the dependent variable that can be accounted for by all the predictors, i.e. control variables and variables of HRM, went up from 6% to 19.6%. The change in R² is a way to evaluate how much predictive power was added to the model by the addition of another set of variables in this case the items of HRM. In this case the net effect is 13.6% of variability of competitive capacity explained by HRM. In the mind of the author therefore HRM can be seen as an important predictor for competitive capacity.

Results of the **multiple regression analysis** of the single items of HRM, namely Q1-Q9, show that all but one single variables (Q4: 0,197) can be counted as significant predictors for **competitive capacity**, as shown in the appendix in table Level of significance multiple regression analysis competitive capacity for HRM on page 220. In addition, all items have a positive correlation with the factor score of competitive capacity. Table 36 on page 115 gives the account in detail.

It can be shown that the item of strategic workforce planning (item in questionnaire Q2: 0,327) has the most significant impact on organizational performance in terms of general competitiveness and human resource performance. Employee participation (Q9: 0,266) has the second most significant impact. The third most significant item is leadership development (Q6: 0,257) from the item pack of HRD and the combined item pack of the factor HRD, namely leadership development, vocational education and training (Q7: 0,211), and strategic training and development (Q8: 0,230) can be seen as important predictor for competitive capacity.

Table 36: Multiple regression competitive capacity by HRM component matrix

Correlations	
Q2. The organization has long-term forecast for <u>strategic workforce planning</u> .	,327
Q9. Employees (i.e. non-management) are <u>involved in decision processes</u> ; for example when establishing strategic plans or discussing new policies.	,266
Q6. <u>Leadership development</u> has a high significance in HR of the organization.	,257
Q1. The organization takes HR measures for identifying, recruiting, and retaining employees for key positions and functions.	,253
Q3. The organization takes measures to refine its employer brand and in doing so distinguishes itself from competitors in a positive way.	,231
Q8. There is a long-term strategy in the organisation concerning the need for <u>further education</u> and training of employees.	,230
Q7. Measures for <u>Vocational Education and Training (VET)</u> have a high significance in the organization.	,211
Q5. The organization's reward policies are performance-linked.	,153
Q4. Employees are being appraised based on evaluations from supervisors, peers, and customers.	,069

Data source: author's own construction

In the mind of the author with regards to the original hypothesis (H4), namely human resource management positively influences organizational performance, the results of the multiple regression analysis support the assumption to some degree, as all single items of HRM have a positive correlation with both economic performance and competitive capacity. However, the effects on economic performance cannot be further evaluated as the results are statistically not significant and therefore the hypothesis has to be rejected for the economic/financial side or

economic performance. Nonetheless, for the side of human resource performance and general competitiveness or competitive capacity the hypothesis can be accepted.

In addition, answering the research question (H3), namely human resource management positively influences organizational learning, the results clearly support the hypothesis as all items of HRM are positively correlated with organizational learning even if the correlations of some single items are relatively weak and the explanatory power is somewhat limited. This finding also is coherent with the results from the regression analyses of the factor scores showing HRM accounts for around 69% (0.693) of the variance in organizational learning.

The explanation of the more powerful impact of human resource management on competitive capacity derives, according to the author, from the fact that items of human resource management, e.g. a long-term workforce planning (item Q2) and the involved career path possibilities for employees, have in terms of a timeline logically a more direct influence on the items of competitive capacity, e.g. motivation of employees, whereas the influence timewise on items of economic performance, e.g. turnover and profit margin, takes longer to manifest itself and in the interim period more influencing variables tend to intervene and ergo are watering down the measurable effects and add to statistical noise when measuring the effects. Also, economic performance, i.e. economic/financial items are much more influenced by external factors like macroeconomic ramifications and therefore cannot easily be influenced by measures taken in a business enterprise in terms of HRM. On the other side competitive capacity, i.e. general competitiveness and human resource performance is much more dependent on internal factors like motivation of staff etc. that can more directly be influenced by internal HRM measures.

Furthermore, the findings described above are for management in business enterprises a clear signal to enhance certain aspects of HRM in order to sustain competitive capacity such as strategic long-term workforce planning. This is true even more as via the strong correlation between competitive capacity and economic performance it can be expected that also financial/economic factors are positively influenced.

3.5 Testing interdependencies via Structural Equation Modeling

Structural Equation Modeling (SEM) is a powerful technique that can combine complex path models with latent variables (factors). Using SEM, the author could further specify the

confirmatory factor analysis models and the regression models. Therefore, the next step of statistical analysis models the structural relationship between the latent constructs of HRM, organizational learning and the dimensions of organizational performance, economic performance and competitive capacity. The models encompass also the measurement models with the items indicating a latent construct or variable. The advantage of SEM is the simultaneous analysis of an implied covariance matrix (implied by the theoretically grounded dependencies of the variables) and the empirical covariance matrix. The goodness-of-fit of these models is evaluated by the degree of discrepancy between the assumed and empirical covariance matrices. Also, indirect and direct effects can be modeled as an explicit error structure of latent constructs.

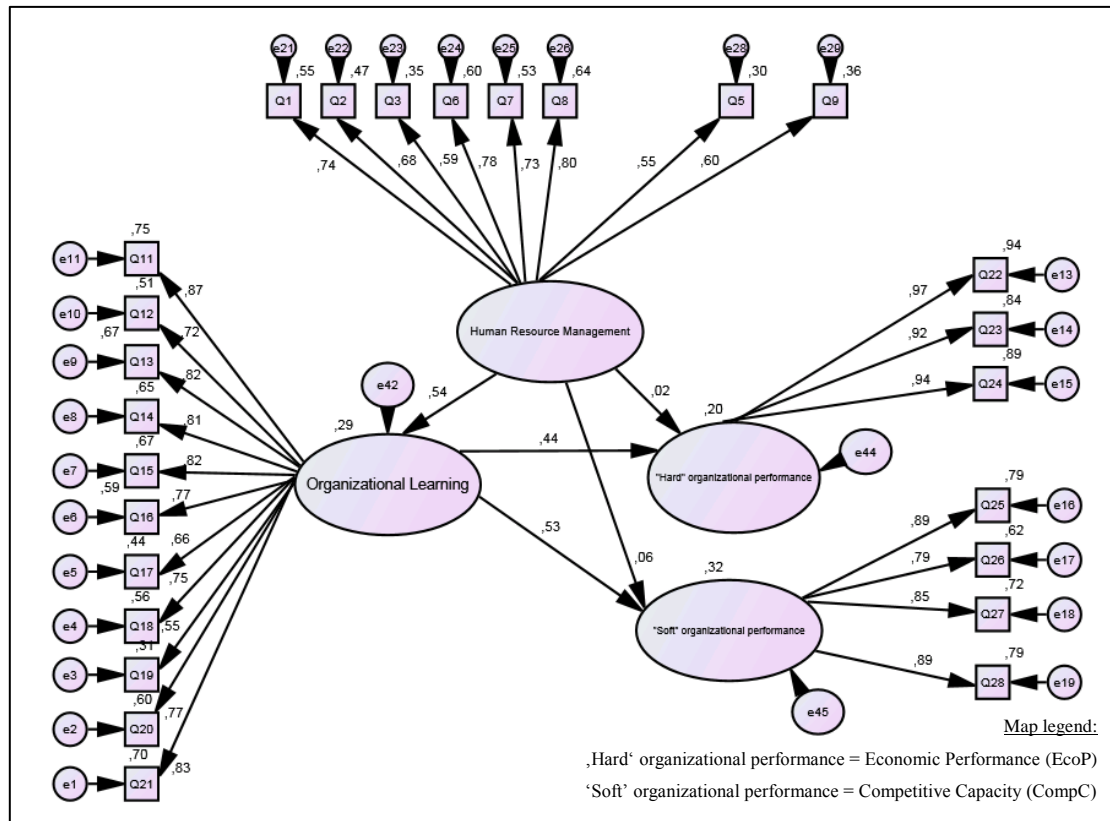
First of all, the global model which assumes a linear direct relationship of HRM and organizational learning on the dimensions of organizational performance is calculated. Then a reverse or alternative model is presented which models organizational learning as construct depending on organizational performance and HRM. Furthermore, in-depth analyses of the sample takes place by the computation of SEM by different groupings, namely the size of the business enterprise and the business sector.

Arrows in the following figures indicate a directed path with the value of the actual standardized path coefficient attached. In the case of arrows in the measurement model arrows represent the factor loading of each item with their respective variance attached above a rectangle. Double arrows directing to both variables indicate a covariance with its value attached close to the respective arrow. The explained variance of dependent latent variables or constructs is given above the respective circles. The e-parameters represent the error terms in the equations since a SEM basically consists of a series of equations which are solved simultaneously; in this case via the maximum likelihood estimation.

Structural Equation Modeling Base Model, organizational performance as dependent construct

In line with the main hypothesis in this model the structural relationships are modeled in a way that facets of organizational performance as latent construct dependent upon HRM and organizational learning. The model shows an acceptable RMSEA of 0.12, which can be explained by the heterogeneity of the sample, i.e. different sectors on the one hand and more importantly by the aim of the hypotheses to be tested. The aim is to test the impact of

organizational learning and HRM on organizational performance and not to find all items explaining variance in organizational performance. Figure 5 on page 118 gives full details on the outcome and the SEM.



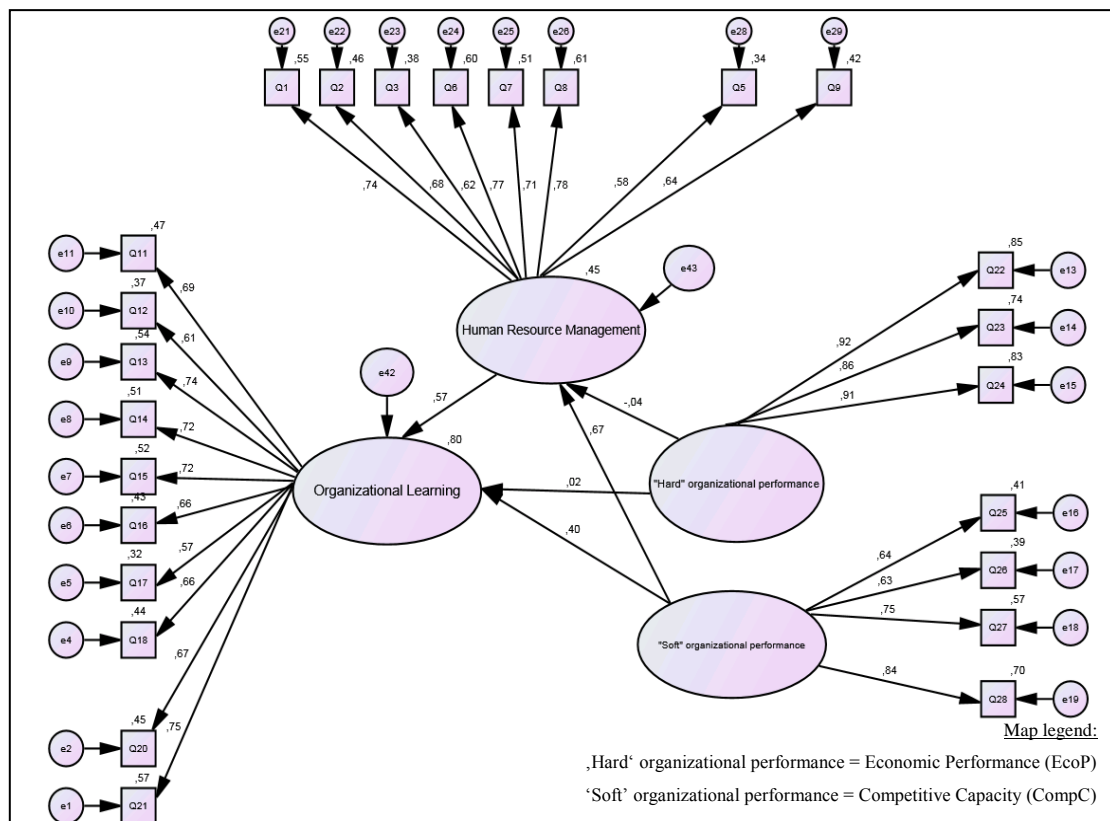
Data source: author's own construction

Figure 5: SEM Base Model, organizational performance as dependent construct

The model shows no substantial path coefficient from HRM on both economic performance and competitive capacity with indirect influences via organizational learning which has a quite strong effect on both dimensions of organizational performance (0.44 and 0.53). The outcomes underline the findings of the regression analysis computed above. Furthermore, the researcher concludes that for both economic performance and competitive capacity a large proportion of variance can be explained by variables which could not be included in the model, as the research model is in accordance with the hypotheses set up to determine exclusively the impact of organizational learning and HRM on organizational performance.

Structural Equation Modeling Alternative Base Model, organizational performance as independent construct

Testing the H2, namely that organizational performance positively influences organizational learning, a second SEM was computed. Figure 6 on page 119 gives accordingly the SEM in which the (supposed) causal relationship is reverse modeled so that the dimensions of organizational performance influence organizational learning both directly and indirectly via the path on HRM.



Data source: author's own construction

Figure 6: SEM Alternativew Base Model, organizational performance as independent construct

This model is theoretically plausible and empirically also acceptable as the RMSEA of 0.11 is not far away from a good fit. The model shows that organizational learning is mainly influenced by competitive capacity directly and indirectly by the effect of competitive capacity upon HRM which in turn influences the dependent latent construct. The outcomes of the SEM therefore substantiate the findings of the other testing methodes described above.

It can be shown on the one hand therefore that organizational learning and competitive capacity are explaining a substantial amount of variance of each other reciprocally. For

economic performance on the other hand the arrow of influence is shown to be more or less exclusively from organizational learning to economic performance. The **hypothesis H2, namely that organizational performance positively influences organizational learning**, accordingly can be substantiated for the theoretical construct of competitive capacity but not for economic performance.

Reverse causality, namely the notion that the connexion between HRM/organizational learning and organizational performance really is caused by organizational performance which than is effecting HRM and/or organizational learning, cannot be found for economic performance (Neuert 2017). On the other hand for competitive capacity it can be evidenced that the relationship of influence between organizational performance and HRM/organizational learning is mutual. In this case the relationship is a case of simultaneity because the causality goes both ways (Wanberg 2012).

In the mind of the author these findings are well explainable by the cause and effect relationships of the items encompassed in the theoretical constructs of competitive capacity and organizational learning, as e.g. positive change management as item of competitive capacity is likely to directly influence the positive attitude towards advancement/change as item of organizational learning. For economic performance items like turnover firstly, take timewise much longer to manifest and in the meantime much more intervening variables come into play and secondly, as the survey is based on self-evaluation also emotionally other influencing variables mix into perception and water down the measurability of the effects.

Results of Structural Equation Modeling by size

To further differentiate the findings and in order to be able to arrive at practical conclusions statistical analysis via SEM according to the size of the business enterprise is computed. Table 37 below shows the sample grouped by size of the business enterprise.

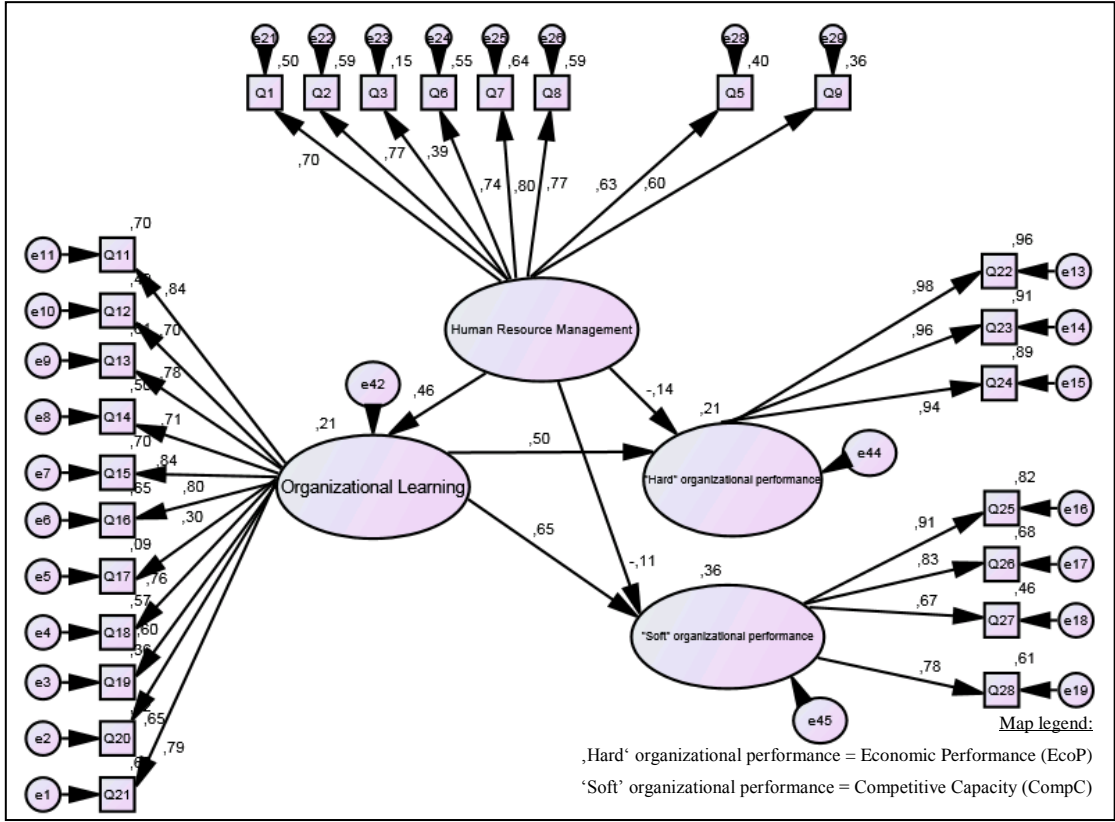
Table 37: Sample grouped by organizational size

		Frequency	Percent	Valid Percent
Valid	up to 100	39	22.0	24.7
	101 thru 500	63	35.6	39.9
	over 500	56	31.6	35.4
	Total	158	89.3	100.0
Missing	System	19	10.7	
Total		177	100.0	

Data source: author's own construction

As shown in the table above 24.7 percent of the Austrian business enterprises in the sample under consideration have up to 100 employees, roughly 40% fall in the category with 101 to 500 employees and big companies with over 500 employees make up a share of 35.4%.

The structural equation modeling (SEM) given in Figure 7 on page 121 indicates a comparably high dependence between organizational learning and the dimensions of organizational performance in big business enterprises with regard to their **number of employees, i.e. >500**. Figure 7 below evidences that the respective standardized regression or path coefficients are 0.5 for economic performance and 0.65 for competitive capacity.



Data source: author's own construction

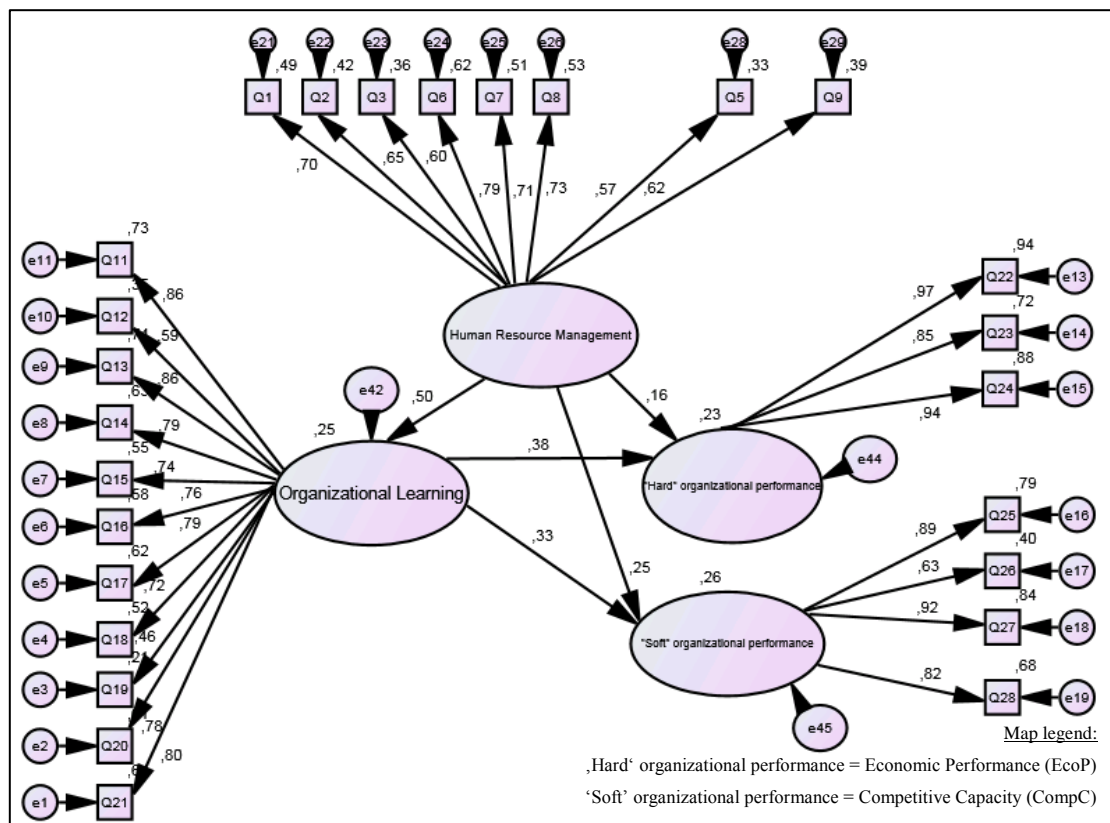
Figure 7: Structural Equation Modeling by size of business enterprise (over 500)

In the mind of the researcher this outcome leads to an important implication for big business enterprises and the inherent suggestion to focus on organizational learning in order to enhance organizational outcomes, both financial/economical ones and in terms of competitive capacity. Results suggest that items of organizational learning concerning knowledge

acquisition, interpretation and distribution as well as the general attitude towards organizational improvement tend to have greater impact on big business enterprises.

On the other hand, in this sub-goup HRM failed to evidence any positive impact on the other latent constructs of organizational performance.

Amongst the second sub-group with business enterprises of **medium size, i.e. 101-500 employees**, the high correlation of organizational learning with organizationa performance diminishes to 0.38 for economic performance and 0.33 for competitive capacity. In turn the path coefficient of the factor human resource management on competitive capacity has a moderate size of 0.25 which is statistically significant on the 90% level of confidence ($p=0.098$). Figure 8 below gives full details.



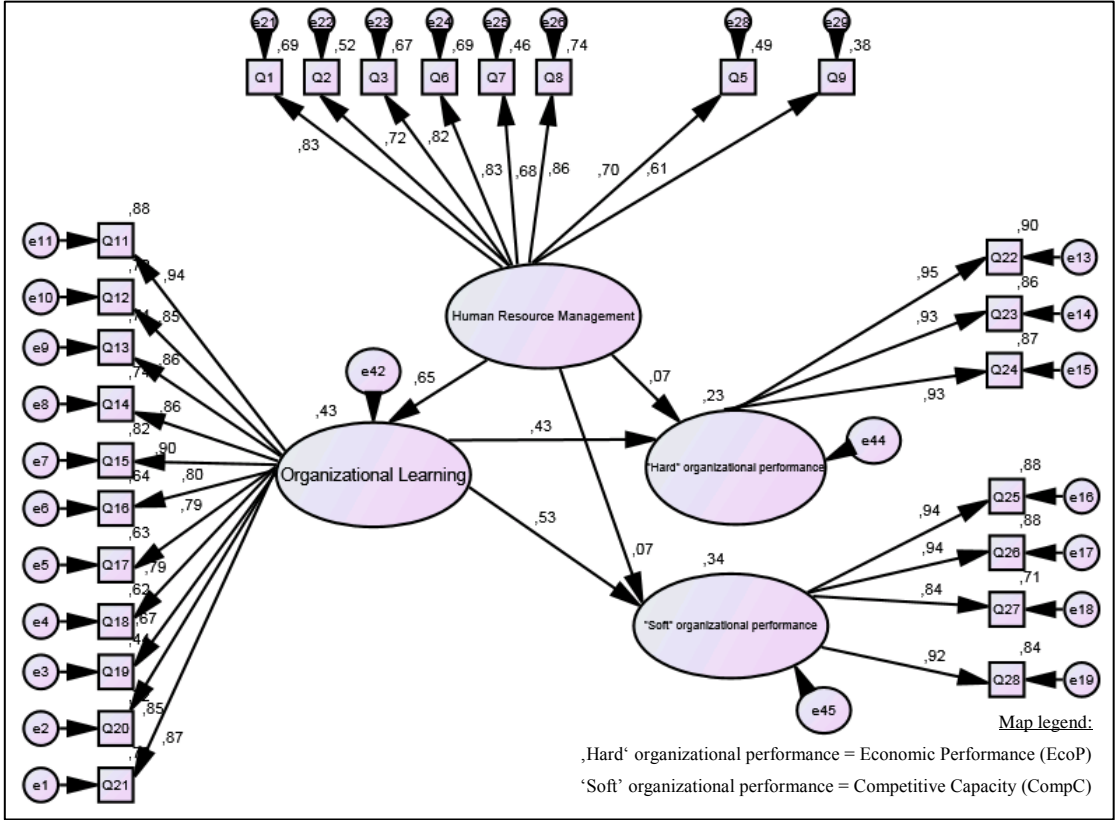
Data source: author's own construction

Figure 8: Structural Equation Modeling by Organisational size (101 thru 500)

In the mind of the author the outcome suggest that with the size of the company the importance of the impact of organizational learning versus HRM tends to shift. Accordingly, the suggestions for medium-sized business enterprises is to focus also on HRM in order to

enhance their organizational performance, both for financial/economic and human resource performance indicators. The results suggest that HRM measures that can be taken within the business enterprise, e.g. in rewards and compensation or human resource development (HRD), will take effect especially in middle-sized organizations whereas in big organizations (>500 employees) an even broader approach, namely organizational learning addressing issues such as knowledge distribution and interpretation is needed in order to enhance organizational performance.

In the third sub-group of **small business enterprises, i.e. up to 100 employees**, an important impact of HRM on the constructs of organizational performance can again not be revealed. Figure 9 below can show, as with big business enterprises a high correlation respectively contribution of organizational learning on the two dimensions of organizational performance with 0.43 for economic performance and 0.53 for competitive capacity.



Data source: author's own construction

Figure 9: Structural Equation Modeling by organizational size (up to 100)

In the eye of the author the result of the SEM by size of the business enterprise support the view that organizational learning is of considerable importance for all sizes of business organizations; but especially for big business enterprises with more than 500 employees. This can be attributed to the increasing need for all aspects of knowledge management throughout the business enterprise which is becoming more demanding the more employees have to be included in the processes.

Furthermore, it is interesting to note that a meaningful direct impact of HRM on competitive capacity seems to be limited on the sub-group of medium sized, i.e. 100-500 employees, business enterprises. For the other sub-groups HRM measures do not seem to be able to take effect. In the mind of the author in small organizations (up to 100) performance enhancing aspects can be transported via other informal channels, as personal relationships between staff members are usually much closer than in bigger organizations and furthermore formal HRM structures often do not exist or only exist in an rudimentary form. Whereas in big organizations (>500 employees) an even broader approach, namely organizational learning addressing issues such as knowledge distribution and interpretation is needed in order to enhance organizational performance.

Results of Structural Equation Modeling by sector

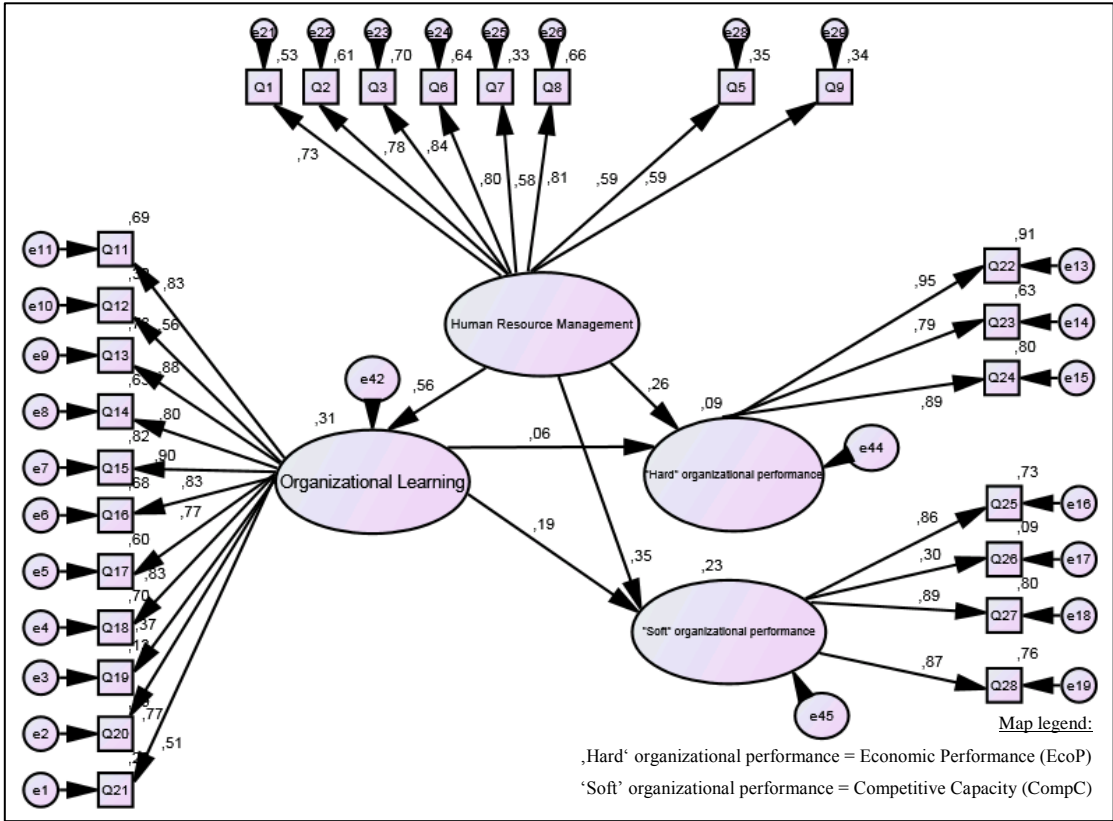
Furthermore, a sub-group analysis was performed by business sector. Due to the makeup of the data, namely the number of responses for each sector a statistically significant differentiation in the analysis can be only made between the sectors ‘Industry’ with an percentage of valid responses of 28.7 and ‘Crafts and Trades / Commerce’ with an percentage of valid responses of 30.0 versus ‘Other’ with a percentage of the valid responses of 41.3. A further differentiation by sectors is for reasons of statistical reliability not possible due to the heterogeneity within the remaining valid sample size. Table 38 below gives full details of the makeup of the sample:

Table 38: Sample grouped by business sector

	Frequency	Percent	Valid Percent
Other	62		41,3%
Industry	43		28,7%
Crafts and Trade/Commerce	45		30,0%
Total Valid	150	84,7%	100,0%
Missing	27	15,3%	
Total Responses	177	100%	

Data source: author’s own construction

The SEM for the sector **‘Industry’** evidences two interesting outcomes. First, the impact of HRM on competitive capacity is significant and with 0.35 much higher than in the general sample. And second, the influence of organizational learning on both dimensions of organizational performance is lower than in the general sample, but still positive and significant. Figure 10 below gives full details.

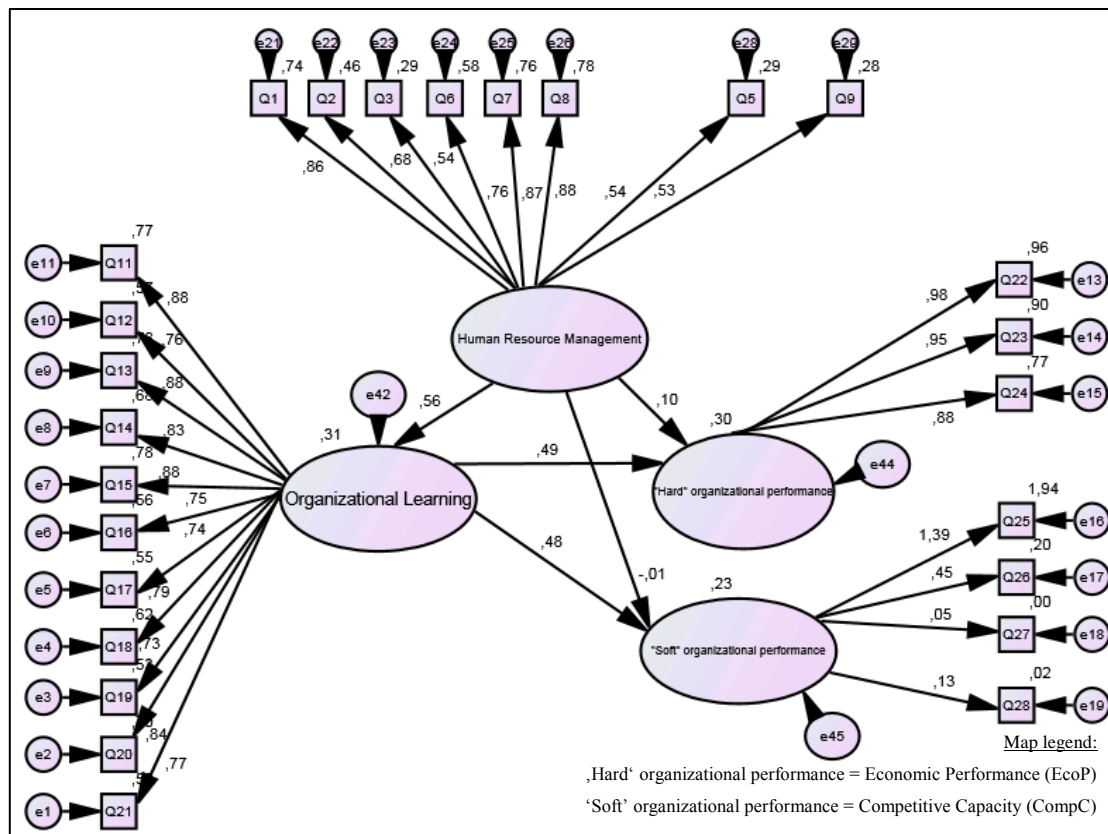


Data source: author’s own construction

Figure 10: Structural Equation Modeling by business sector ‘Industry’

In the mind of the author the results regarding HRM are sound with the findings of the SEM by size, as the majority (number 22 or 51.2%) of business enterprises in the sector of ‘Industry’ are middle-sized (between 101 and 500 employees) and the SEM of middle-sized business enterprises shows an above-average impact of HRM compared with the general sample.

The second business sector explicitly differentiated is **‘Crafts and Trades / Commerce’**. Figure 11 on page 126 gives full details of the SEM.

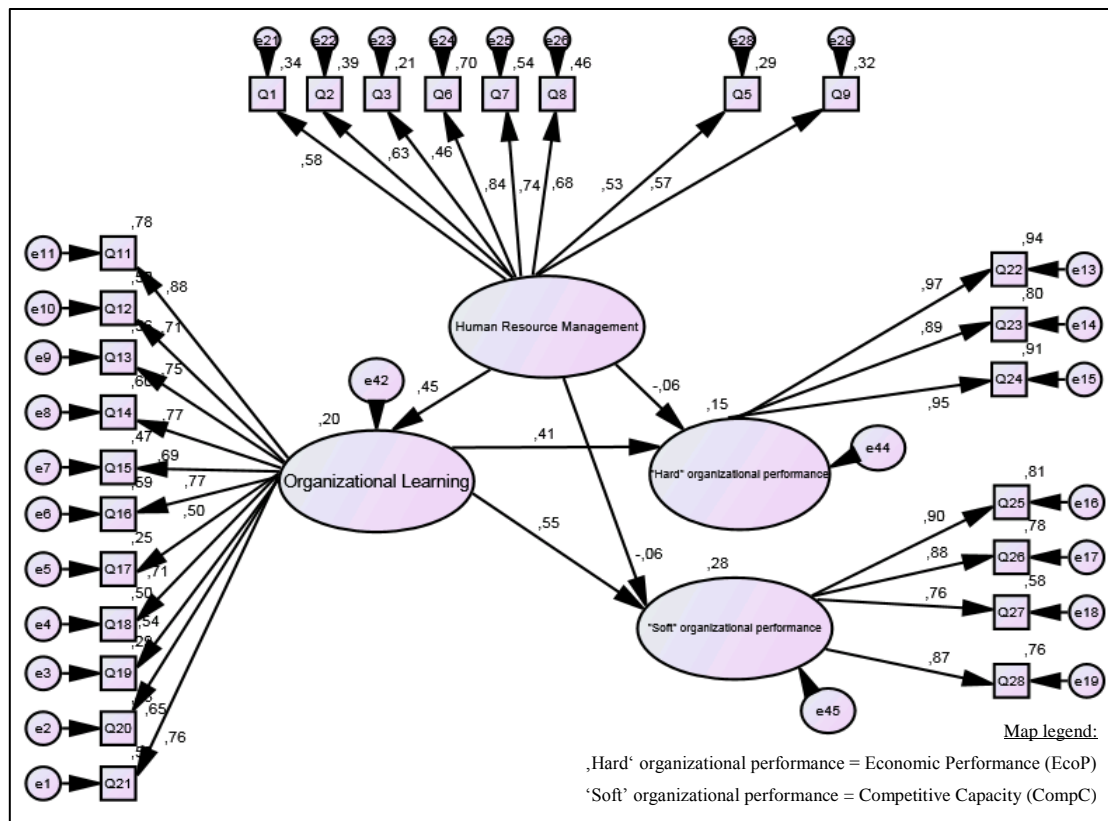


Data source: author's own construction

Figure 11: Structural Equation Modeling by business sector 'Crafts and Trades/Commerce'

By contrast the business sector 'Crafts and trades / Commerce' shows high standardized path-coefficients from organizational learning to both economic performance with 0.49 and competitive capacity with 0.48 and is therefore in line with the general sample.

The third aggregated business sector '**Others**' is made up by all remaining tested business sectors (Banking and Insurance, Transport and Communications, Tourism and Leisure, Information and Consulting) as defined by the Austrian Chamber of Commerce. Figure 12 on page 127 gives full details of the SEM.



Data source: author's own construction

Figure 12: Structural Equation Modeling by business sector 'Other'

The analysis did not reveal major differences between the sector of 'Crafts and Trades / Commerce' and evidences high path coefficients of organizational learning on the dimensions of organizational performance within the sectors with a magnitude of 0.41 for economic performance and 0.55 for competitive capacity which is of remarkable size.

The overall model fit measured by the widely used RMSEA (root mean square of approximation) was acceptable (RMSEA= 0.11) which indicates that not all relevant data to explain organizational performance and its dimensions had been included in the model. In the eye of the author this however, was not the aim of this work. The aim was to explain the impact of organizational learning and HRM on organizational performance which is rather substantial. In the mind of the author the results from this second sub-group analysis are consistent with the findings of the outcomes of the other SEM analysis and therefore underline their validity.

In general in the eyes of the researcher the results of the SEM models within different sub-groups of the underlying Austrian sample hint at a consistent and quite strong relationship of

organizational learning on both sub-dimensions of organizational performance. A further common pattern consists in the remarkable and sizeable relationship between human resource management and organizational learning around 0.5. The outcomes of the SEM analyses are therefore also in line with the findings from the other statistical methods and add to the general consistency of the results.

3.6 The findings of the research

The following section provides a synthesis of the empirical findings from this study with respect to the modified evidence-based hypotheses explained above. Table 39: Hypotheses test overview below gives account in detail about the acceptance or rejection of the a priori hypotheses based on the research findings with a check mark signaling acceptance and the x-symbol signaling rejection:

Table 39: Hypotheses test overview

Hypotheses	Accepted <input checked="" type="checkbox"/>	Rejected <input checked="" type="checkbox"/>
H1.EcoP: Organizational learning positively influences economic performance.	<input checked="" type="checkbox"/>	
H1.CompC: Organizational learning positively influences competitive capacity.	<input checked="" type="checkbox"/>	
H2.EcoP: Economic performance positively influences organizational learning.		<input checked="" type="checkbox"/>
H2.CompC: Competitive capacity positively influences organizational learning.	<input checked="" type="checkbox"/>	
H3.EcoP: Human resource management positively influences economic performance.		<input checked="" type="checkbox"/>
H3.CompC: Human resource management positively influences competitive capacity.	<input checked="" type="checkbox"/>	

Data source: author’s own construction

In the following the findings as basis for acceptance or rejection are discussed in detail with regards to the purpose of this dissertation, namely deeper insight into the interdependencies between organizational learning, human resource management and organizational

performance and a sharper delineation of the influencing items within the theoretical constructs.

1. A finding of the current work is that the original view is that the theoretical construct of organizational performance is *“a holistic approach incorporating the end results of all the organization’s work processes and activities directed at lasting competitive advantage”*. After an evidence-based reassessment the author suggests that two dimensions have to be separated. On the one hand economic performance, i.e. variables concerning financial or economic figures and on the other hand variables regarding intangible perceptions of non-financial figures of general competitiveness and human resource performance. The assumption of organizational performance has to be modified according to the evidence-based-research findings. The evidence-based need for separation of the construct of organizational performance was not to be expected, given the fact that the research community tend to assume that economic/financial success as a general rule goes together with general competitiveness and human resource performance.
2. A gap in existing literature poses the empirical evidence about the relationship between organizational learning and organizational performance. The main hypothesis (H1.EcoP) that organizational learning positively influences economic performance can be substantiated by the findings. The outcomes of a hierarchical multiple regression analysis evidence that organizational learning can be seen as an important predictor for economic performance as a sufficient amount of predictive power in terms of variability explained can be attributed. This was underlined by a series of Structural Equation Models (SEM) in a variety of subgroups according to organizational size and sector all showing strong relationships between organizational learning and the tested economic/financial items of general business situation, turnover/volume, and profits.

The predictive power of organizational learning for economic performance is sufficiently proven. Furthermore, it is interesting to see that the highest correlations are found for the item pack of the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and attitude towards change. Evidencing therefore that active involvement of staff in the organization explains variation in e.g. turnover and profit margins. Also, the items of the factor knowledge acquisition, especially research and development as well as innovation show high impact. Furthermore, results point out

that items of the factor knowledge distribution, namely knowledge sharing and information on strategies and aims positively impact on economic/financial performance.

3. A gap in existing literature poses the empirical evidence about the relationship between organizational learning and organizational performance. The second part of the main hypothesis (H1.CompC) that organizational learning positively influences competitive capacity also can be substantiated. The outcomes of a hierarchical multiple regression analysis show that organizational learning can be seen as predominant predictor for competitive capacity as a large amount of predictive power in terms of variability explained can be attributed. Furthermore, the analysis reveals that especially the item pack of the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and attitude towards change have a significant impact. Furthermore, the item pack of the factor knowledge acquisition, namely research and development as well as innovation have a meaningful positive impact on competitive capacity.
4. Given the fact that organizational learning explains more variance of competitive capacity, i.e. items like employee satisfaction, than it does for economic performance, i.e. items like profitability, and that competitive capacity on its part has considerable influence on economic performance, it can be concluded that the influence of organizational learning on economic performance is also an indirect process rather than a direct gain of profitability. This notion is also substantiated by the conducted Structural Equation Modeling analysis.
5. A gap in existing literature poses the direction of influence between organizational learning and organizational performance. The findings of the conducted Structural Equation Modeling analysis point out for the sub-hypothesis that economic does not performance positively influences organizational learning (H2.EcoP) that the arrow of influence is more or less exclusively from organizational learning to economic performance. The sub-hypothesis accordingly cannot be substantiated.
6. A gap in existing literature poses the direction of influence between organizational learning and organizational performance. For the sub-hypothesis that competitive capacity positively influences organizational learning (H2.CompC) in a conducted SEM analysis it can be shown that organizational learning and competitive capacity are explaining a

substantial amount of variance of each other reciprocally. The sub-hypothesis accordingly can be substantiated.

These findings are well explainable by the cause and effect relationships of the items encompassed in the theoretical constructs of competitive capacity and organizational learning, as e.g. positive change management as item of competitive capacity is likely to directly influence the positive attitude towards advancement/change as item of organizational learning. For economic performance items like turnover firstly, take timewise much longer to manifest and in the meantime much more intervening variables come into play and secondly, as the survey is based on self-evaluation also emotionally other influencing variables mix into perception and water down the measurability of the effects or else create statistical noise.

7. The sub-hypothesis human resource management positively influences economic performance (H3.EcoP) cannot be substantiated. Correlations of the factor scores of human resource management and economic performance were statistically not significant. Therefore it can be concluded that the theoretical construct of human resource management as a whole does not have significant explanatory power with regard to economic performance. However, within the theoretical construct of human resource management there are items that do have significant predictive power, namely talent management and employee participation. With regards to the Structure Equation Modeling economic performance is in the majority of sub-groups being analyzed not directly connected to human resource management which gives rise to the conclusion that human resource management works rather indirect via organizational learning.
8. The sub-hypothesis human resource management positively influences competitive capacity can be supported (H3.CompC). The outcomes of a hierarchical multiple regression analysis suggest that human resource management can be seen as an important predictor for competitive capacity as a sufficient amount of predictive power in terms of variability explained can be attributed. Furthermore, multiple regression analysis suggests that long-term staff planning is the most meaningful single item explaining alterations in competitive capacity followed by employee participation. The third most significant item is leadership development from the item pack of human resource development and the

combined item pack of the factor human resource development, namely leadership development, vocational education and training, and strategic training and development can be seen as important predictor for competitive capacity. These findings are filling a gap in the existing literature on the concrete tangible impact on human resource development on performance.

The results of the alternative Structure Equation Modeling which allow for the explicit modeling of latent factors and their error structure as well as indirect and direct relationship between the latent factors show rather weak relationships of human resource management and competitive capacity. With the explicit exemption of the sub-groups of middle-sized business enterprises and the sector of 'Industry' which show a strong relationship. In the mind of the author the results are sound, as the majority (number 22 or 51.2%) of business enterprises in the sector of 'Industry' are middle-sized (between 101 and 500 employees).

The explanation of the more powerful impact of human resource management on competitive capacity derives, first from the cause-effect relationship of the single items included in the theoretical constructs and second from the fact that items of human resource management, e.g. a long-term workforce planning and the involved career path possibilities for employees, have in terms of a timeline logically a more direct influence on the items of competitive capacity, e.g. motivation of employees, whereas the influence timewise on items of economic performance, e.g. turnover and profit margin, takes longer to manifest itself and in the interim period more influencing variables tend to intervene and ergo are watering down the measurable effects and add to statistical noise when measuring the effects. The same is true for the emotional distance that tends to widen over time and which might influence the outcome as the data gathering is based on self-evaluation.

4 Best-practice-example of practical implementation of research in Austrian companies

The findings of this research project have been implemented by the author in the course of different organizational development projects with the title Apprentice-Academy including 187 participating apprentices in 10 business enterprises from a variety of different business sectors in Austria. The table Table Appendix 4. 1: Overview over business enterprises with implemented Apprentice-Academy on page 221 gives an overview over the involved business enterprises. As a best-practice example the following chapter will introduce the realization in a business organization in the sector of industry with headquarters in Salzburg/Austria which has also recently been published (Schreder 2017).

New six-legged approach to integrated organizational development

Different gaps in existing literature have been identified in the beginning of this work with the aim of closing at least some of them by finding by ways of an evidence-based research model. This was achieved by including relevant test items of interest into the measurement model. Evidence from the current research was enabling the author to identify different single items that have especially important impact on different aspects of organizational performance. First, it can be evidenced for **human resource management** that the item of

- talent management (Q1) and employee participation (Q9) have a direct impact on all aspects of organizational performance, i.e. economic/financial performance, general competitiveness, and human resource performance.
- Second, it can be shown that the combined item pack of the factor HRD, namely leadership development (item in questionnaire: Q6), vocational education and training (Q7), and strategic training and development (Q8) as well as the item of strategic workforce planning (Q2) have the most significant impact on organizational performance in terms of general competitiveness and human resource performance.

Third, for **organizational learning** results support the view that

- the combined item pack of the factor improvement attitude, namely active involvement in development (Q19), active suggestions on improvements (Q20), and attitude towards change (Q21) have a significant impact on all tested dimensions of organizational performance.

- Forth, results point out that the combined item pack of the factor knowledge distribution, namely information flow (Q13), knowledge sharing (Q14) and information on strategies and aims (Q15) positively impact on economic/financial performance.
- Fifth, results underline the importance of the items comprised in the factor of knowledge acquisition, especially research and development (Q10) and innovation (Q11). These items however are not suitable for incorporation in the development approach discussed as the target group of apprentices could only to a very limited degree be involved in the aforementioned activities.

According to Meifert (2013) the greatest obstacles in practical terms when it comes to implementing an organization development approach is the complexity of the field, i.e what is encompassed and what is useful dependent on corporate strategy etc.? In an attempt to achieve maximum impact on organizational performance the Apprentice-Academy was set up to cover most of the items that have been evidenced to have the most significant positive influence. This of course is also the demand of business enterprises as the ability of every business enterprise to survive in a competitive environment is directly connected to its collective, human capital, relevant knowledge, and technical competencies. Recent research in the field of HR confirm this connection and point out that this trend is going to become more important in coming years (Strack et al. 2014, 18 seqq.). This is also underlined by the head of human resource development in the described international industrial enterprise when stating that *“the decisive competitive advantage in our organization increasingly stems from technical knowledge and personal development of our employees⁷”*. Human resource practitioners and experts⁸ from different business sectors also underline that work-related organizational development strengthens both innovative capacity and motivation of employees and furthermore, would help to optimize productivity via better knowledge and know-how of staff. This is important, as in today's knowledge-based societies economic competitiveness is based on knowledge and advantage in knowledge (Kuo 2011, 582).

⁷ Interview with the head of human resource development of the described industrial enterprise, who wished to remain anonymous due to internal privacy policies and data protection directives. Date of interview: 15.05.2017

⁸ An overview over the experts is given in the appendix in the table Pre-study: Overview of experts for guided-interviews

Consequently, the ability for long-term success and survival of every single business enterprise – regardless of the business sector – depends on the work-related knowledge and competencies of its human capital. This seems to be all the more true as technology driven change processes are happening at increasing velocity causing permanent transformation of competitive ramifications on a global scale (Kuo 2011, 581).

Decisive for the competitiveness of any business enterprise is to translate these theoretical findings into its operational processes and procedures. As a best-practice example in the following the author reports the aims and the content and the methodical implementation of a organizational development project in an internationally operating industrial enterprise with headquarters in Salzburg/Austria where the set up is strategically and functionally integrated via the so-called „Apprentice-Academy“. In accordance with the findings of the research the main items respectively item packs that have been found to positively impact on organizational performance have been integrated in the development measure. Table 40: Content items of the Apprentice Academy below gives a detailed account:

Table 40: Content items of the Apprentice Academy

ITEM (PACK)	PRACTICAL IMPLEMENTATION
TALENT MANAGEMENT	Attracting and recruiting the best apprentices by being the most attractive place to work (employer brand).
STRATEGIC WORKFORCE PLANNING	Supervision on a regular basis by the HR department for career pathing and matching organizational demand with possible fields of application.
HUMAN RESOURCE DEVELOPMENT	Focused development of the most talented apprentices beyond normal measurement standard.
EMPLOYEE PARTICIPATION	Mentoring by certified apprentice trainers including involvement in policy advancement in the field of apprenticeship training.
IMPROVEMENT ATTITUDE	Integration of apprentices in the organization by actively involvement in change and development processes fostering a corporate culture of merit.
KNOWLEDGE DISTRIBUTION	Annual job-rotation of apprentices to ensure broad base of vocational training.

Data source: author’s own construction

The compiled set of measures is set up as an integrated system that interlocks the single items horizontally with each other and aligns them vertically with the corporate and HR strategy.

Leaning on Meifert (2013) complex development programmes can not be implemented in one step but need to be undertaken in an accordated stepping. In this case the author proposes a new six-legged approach towards a sound and comprehensive organizational development programme. Leaning on this approach has proven to be helpful in a number of development projects undertaken by the author in practical life, as it provides an comprehensive framework as guideline and therefore reduces complexity and enables a successful project management. Of course it is no cooking recipy because there is no ,one-size-fits-all‘, as the suitable approach in an organization is contingency on the specific ramifications (strategy, business sector and situation etc.) and as Becker (2016) points out depends on the ,level (degree/stage) of maturity‘ of an organization. For the suggested framework the form of a house has been chosen, as it underlindes that the single items or legs are very closely related to each other and cannot stand alone. All legs are interacting with each other. The figure below gives a graphical summary of the approach:



The figure is the author’s own construction

Figure 13: Six-legged approach to integrated organizational development

Bearing the aforementioned in mind the logical first leg and the base to build on all further elements is talent management with the specific aim to find, attract and recruit the most talented apprentices in the field. This is literally as well as figuratively the foundation that all further development policies can be built on and reflects the human capital of the organization. The second leg and the strategic roof under which all concrete single policies can be soundly implemented is strategic workforce planning with the aim to identify the necessary workforce for each job description and to allocate them according to long-term planning. With the base and the roof established the concrete policies can be implemented as pillars sustaining the construction. The third element is the pillar of human resource development with the aim of lasting work-related personal and professional development of the participants. The fourth element is the pillar of employee participation enacting as both motivator for employees and means of retention in the organization. The fifth element is a policy for improvement attitude securing ongoing advance and positive change management in the sense of a corporate culture based on merit. And last not least the sixth element is a policy for knowledge distribution securing that all relevant information is present in all parts of the organization.

Furthermore, it is according to Truss (2012) important to vertically align a development approach to the corporate and HR strategy in order to streamline the setting of goals with the implementation of concrete policies and measures.

Goals of the new six-legged organization development approach

The aims and the benefit of the series of measures under the heading “apprentice academy” lie on the one side in the support for training enterprises in the field of human resource and on the other side in the assistance for individuals in terms of general employability. In the following both aspects are described in detail.

Benefits for training enterprises

Within this general direction of impact the concrete aims and the resulting benefits for the training enterprise are:

- Attraction and recruitment of talent for key positions (talent management) and consequently an advantage in the field of human capital.
- Focused development of the most talented apprentices beyond normal measurement standard and consequently gain in human resource performance.

- Strategic workforce planning and the inherent long-term planning security for organizational processes and procedures.
- Employee participation and involvement in policy advancement in the field of apprenticeship training.
- Integration of apprentices in the organization, its change and development processes and the consequent strengthening of the corporate identity (retainment).
- Positive attitude towards change and improvement fostering a corporate culture based on merit.
- Annual job-rotation of apprentices to ensure broad base of knowledge distribution and gains in the consequent higher flexibility and motivation of staff.

Based on the personal experience of the author as well as according to renowned researchers in the field (cf. Ulrich 2009) human resource management is seen increasingly in terms of benefit aspects in the sense that HR is asked to contribute to value-added in the respective business enterprise. Under these circumstances employability management, i.e. following Kres (2007) securing the employability of staff as strategic objective, is important. This requirement can be met by implementing the discussed development measure and can also be proven by using suitable HR metrics. This is important as the field of human resource management has to operate economically (Galon 2007).

Benefits for individual employees (apprentices)

Alongside the perspective of the business enterprise human resource always also has a person-centred focus and consequently the development measure have the dimension of an individual benefit and individual aims in terms of employability management.

This aspect is of growing importance as rapidly changing ramifications and technological development entail a decrease of job security and ergo a general ability to participate in the world of employment becomes crucial (Raeder 2003). Aims and benefits for the individual staff member before this background are:

- Promotion of the personal development in the sense of work-related human resource development and related gain in efficient working method
- Acquisition of key qualifications for further career-pathing
- Promotion of motivation and resulting gain in efficient working method

The strategic objectives and benefits of the organizational development measure can be seen from both the perspective of the employer as well as the employee. To get a better grasp of the concrete configuration in the following the implementation in a renown training enterprise is reported.

Best-practice example of company-specific goals and benefits in a training enterprise

The industry group who wished to remain anonymous due to internal privacy policies and data protection directives is operating in the sector of industry and a renown training enterprises in in Austria which recruits new apprentices annually. Apprenticeship training is seen as strategically important as part of organizational development and encompasses a set of measures taken in vertical alignment with corporate and HR strategy. Furthermore, the single measures are aligned horizontally in order to interlock with and sustain each other.

The vision of corporate HR is to work person-centered and design processes and procedures accordingly. This requirement is put into practice company-wide and for all groups of employees so that all HR functions are vertically aligned with that goal and horizontally integrated with each other. The aim is a centrally controlled apprenticeship training with individual focus of development during the whole duration of the apprenticeship with the following three underlying principles:

- Three-legged principle (vocational training on-the-job, in vocational college and company training centers) including detailed training schedules
- Mentoring by certified apprentice trainers
- Accompanying development supervision of the HR department

Table 41: Subgoals of apprenticeship on page 140 gives an overview of the subgoals of the apprenticeship in the business enterprise in question. As it can be deduced from the table the training enterprise pursues six different but aligned goals in the fields of talent management, human resource development (HRD), strategic workforce planning, employee participation, improvement attitude, and knowledge distribution. The training enterprises has introduced this programme in cooperation with the author in 2014. In the following section the methodically and content-related implementation is discussed.

Table 41: Subgoals of apprenticeship in best-practice example

TALENT MANAGEMENT	STRATEGIC WORKFORCE PLANNING	HUMAN RESOURCE DEVELOPMENT	EMPLOYEE PARTICIPATION	IMPROVE MENT ATTITUDE	KNOWLEDGE DISTRIBUTION
Subgoal: Attracting and recruiting the best apprentices by being the most attractive place to work (employer brand)	Subgoal: Supervision on a regular basis by the HR department to match areas of application with personnel requirement	Subgoal: Focused development of the most talented apprentices beyond normal measurement standard	Subgoal: Mentoring including involvement in policie advancement	Subgoal: Integrati on in the organizat ion by actively fostering a corporate culture of merit	Subgoal: Annual job-rotation of apprentices to ensure broad base of vocational training
Goal: most attractive employer brand for internal and external talents					

Data source: author's own construction

As can be seen from the description of contents above, the topic areas of the different fields are on the one hand coordinated under a content-related point of view and in their temporal course (horizontal alignment) and on the other hand are aligned with the corporate strategy (vertical alignment) in order to form an integrated complete model. The implementation of the organizational development measure took place in the year 2014; so after a three year apprenticeship period the first group of business apprentices successfully completed in 2016. The success of the development approach is underlined by the head of human resource development of the described industrial enterprise, who wished to remain anonymous due to internal privacy policies and data protection directives when stating that the „*individual modules and coaching sessions are very popular with our apprentices. That we are on the right track with our new human resource development measure is proven by the great commitment with which our young talents participate. Also feedback of our apprentice trainers and apprentices underline that the tailor-made development programme makes a lasting impact. A complete success therefore for our company and our apprentices*“.

Conclusions and suggestions

The research strategy of this work is to first based on gaps in previous research to conceptualize an independent theoretical research scheme, second to evidence-based modify the research scheme and by ways of different analytical methodes arrive at relevant findings, and third to make out of the findings suggestions for moth future research in management science and practical implementation in business enterprises.

Conclusions of the research

1. A conclusion from the meta-analysis is that although the majority of preveious research sustains the notion of organizational learning and/or human resource management positively influencing organizational performance the postulated connection is dependent on the specific circumstances and settings of the research conducted. Organizational learning and human resource management can act as a mediator by which organizational performance is influenced in a positive way. Also, organizational learning and/or human resource management can influence only certain partial aspects of organizational performance, with stronger results for non-financial than financial performance.
2. A conclusion of the partial factor analysis is that the construct of organizational performance has to be divided into two evidence-based constructs, namely economic performance, incorporating the items from the theoretical dimension of economic performance on the one hand and and competitive capacity on the other, encompassing the items from the theoretical dimension of both general competitiveness and human resource performance.
3. An evidence-based conclusion is that the application of certain aspects, i.e. items or bundles of items, of human resource management and organizational learning can ameliorate organizational performance significantly. For economic performance these aspects are: within human resource management - talent management, and employee participation. Within organizational learning the aspects are improvement attitude and knowledge distribution. For competitive capacity these aspects are: within human resource management - strategic workforce planning, human resource development. Within organizational learning – improvement attitude.

4. A current gap in research seemingly poses the possible direction of influence between organizational learning and organizational performance. Only few scientific studies tried to clarify the relationship with regard to establish recursive relationship. A conclusion from the current research is that the direction of influence is mutual for organizational learning and competitive capacity. To the contrary, no mutual influence could be evidenced between organizational learning and economic performance, where the direction of influence was found to be one-way, namely organizational learning influences economic performance but not vice versa.
5. Organizational learning can be seen as an important predictor for economic performance, as consistent outcomes of different statistical analysis evidence that a sufficient amount of predictive power in terms of variability explained can be attributed. Furthermore, it can be shown that the highest correlations are found first for the item pack of the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and general attitude towards change. Second, also the items of the factor knowledge acquisition, especially research and development and innovation show high impact.
6. Organizational learning can be seen as a predominant predictor also for competitive capacity. In different statistical analysis consistently a large amount of variability of competitive capacity is explained by organizational learning. Results evidence that especially two item packs are important: first, the factor improvement attitude, namely active involvement in development, active suggestions on improvements, and general attitude towards change have significant impact and second, the factor knowledge acquisition. Here, especially the items research and development and innovation have a meaningful positive impact.
7. Human resource management does not directly impact on financial/economic organizational performance in the majority of subgroups being analyzed. Nonetheless it can be shown that human resource positively impacts on economic performance via indirect profitability by the mediating constructs of organizational learning and competitive capacity.

8. A conclusion is that human resource management positively influences competitive capacity, i.e. items of general competitiveness and human resource performance. These outcome is consistent for different statistical methods and impact is strongest for sub-groups middle-sized business enterprises and the sector of 'Industry'.
9. Results show organizational learning is of considerable importance for all sizes of business enterprises; but especially for the sub-group of big business enterprises with more than 500 employees.
10. From the findings for the sub-groups of business enterprises in the sector of 'Industry' and for middle-sized business enterprises (101 thru 500 employees) an important and above-average impact of human resource management on both sides of organizational performance (economic performance and competitive capacity) can be concluded.

Suggestions for practical implementation in business enterprises

The overall significance of the subject in general and the current study – for business enterprises in Austria – should not be underestimated as substantial resources are being bound by organizational learning and human resource management and any organization needs to consider resource allocation carefully. Part of the purpose of the dissertation is the development of an independent evidence-based research model and the subsequent research on it which allows for respective suggestions for practical management implementation which are detailed in the following:

1. Management in business enterprises should focus on organizational learning in order to improve economic/financial performance in the long run, such as turnover and profit margins. In other words, improving the economic resilience of the organization can be achieved by improving organizational learning. Especially measures in the field of the improvement attitude, e.g. through a corporate proposal system or employee participation models, are recommended as the corresponding test items evidenced significant impact. In the same manner also policies targeting the item pack of the factor knowledge distribution, namely information flow and knowledge sharing are recommended. Concrete measures should include e.g. job-rotation and enrichment to ensure broad base of work-related knowledge and competencies.

2. Organizational learning is of pivotal importance in explaining competitive capacity. Hence, measures in the field should be taken. As concrete measures for implementation in business enterprises the author suggests based on the facts presented above measures first in the field of knowledge acquisition such as the strengthening of operational research and second in the field of improvement attitude measures including the setup of internal processes supporting active involvement of the staff, e.g. using a corporate proposal system. Also, active involvement of employees in e.g. decision processes should be undertaken in order to achieve an amelioration of satisfaction of staff and the chances of finding new staff in order to secure the long-term survival of an organization.
3. A clear suggestion out of the findings described above is to enhance certain aspects of HRM in order to sustain competitive capacity. This is true even more as via the strong correlation between competitive capacity and economic performance it can be expected that also economic factors are positively influenced. The first proposition for implementation in the HR departments of business enterprises therefore is to establish measures and processes directed at long-term strategic workforce planning including succession planning, career-pathing. Second it is suggested to focus on the field of human resource development (HRD) incorporating the whole HR-architecture, i.e. programmes for leadership development as well as vocational education and training for employees.
4. As organizational learning has an especially large impact in the sub-group of business enterprises with more than 500 employees, the clear suggestion for management especially in big business enterprises is to focus on the items of organizational learning such as the acquisition of knowledge via research and development or the improvement attitude, i.e. to suggest improvements and innovation, of employees to enhance business outcomes.
5. A suggestion for HR management in in the sub-groups of 'Industry' and middle-sized business enterprises (101 thru 500 employees) is to foster human resource management to enhance desired outcomes on the one hand in the field of financial/economic figures and on the other hand regarding general competitiveness; such as reputation, and in the field of human resource performance; items such as employee satisfaction. Suggested policies

should at least include an integrated and strategically set up talent management and long-term workforce planning.

6. A specific suggestion concerns the practical implementation via public bodies, namely the Austrian Federal Economic Chamber with its aim to support Austrian business enterprises in their effort to be competitive players on both national and global level is to bring its policies into line with the findings of this study. Concrete measures should include first awareness-raising initiatives concerning the importance of organizational learning / HRM and second consulting and support in the implementation of relevant internal processes e.g. supporting innovation.
7. A suggestion for HR managers out of the findings of this research is to implement a comprehensive organizational development programme including the items respectively item packs that were found to be of most importance in bettering organizational performance. The programme should include first the elements of talent management, strategic workforce planning, human resource development (HRD), and employee participation. Second policies should be set up in the fields of improvement attitude sustaining active involvement of staff in change management and also in the field of knowledge distribution to enhance the information flow and sharing of knowledge.

Suggestions for future research in management science

As shown above the scale of this debate regarding the interdependencies between organizational learning / human resource management and organizational performance is extensive and multifaceted even at the local level. To generate achievable policy strategies and development targets there is need for more research to substantiate the above findings and to further extend the results to specific areas/regions, branches or sizes of business enterprises. The author also suggests further research with different samples to replicate the factor structure of the theoretical grounded dimensions. Part of the purpose of the dissertation is the development of an independent evidence-based research model and the subsequent research on it which allows for respective suggestions for further research in management science which are detailed in the following:

1. This research has thrown up many questions in need of further investigation on the nature of the linkage between organizational learning / HRM and organizational performance.

What is now needed is a cross-national study involving organizations from outside Austria respectively peer-groups from different countries to substantiate the findings for Austrian organizations.

2. As the chosen method of data collection was a questionnaire based on self-evaluation and the resulting possible subjectivity of the outcome based on the assessment of the respondents further research should try to provide objective data by using more objective macro data.
3. The author suggests that the association of the theoretical concepts (HRM, organizational learning and organizational performance) is investigated in future studies using different sets of measurement items to extend the explanatory power of the findings and eventually find generalizable underlying patterns.
4. Research is also needed to further differentiate the theoretical concept of organizational performance to determine the various variables describing the different spheres, e.g. the competitive capacity and economic performance. Large randomized studies could provide more definitive evidence.

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Appendices

Appendix 1: Organization of Questionnaire

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Questionnaire electronic survey in English including answering options

Table Appendix 1.1: Questionnaire electronic survey in English including answering options

<u>No.</u>	<u>Question</u>	<u>Answer (possibilities)</u>
Q1	The organization takes HR measures for identifying, recruiting, and retaining employees for key positions and functions.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q2	The organization has long-term forecast for strategic workforce planning.	fully agree mostly agree mostly disagree fully disagree

Q3	The organization takes measures to refine its employer brand and in doing so distinguishes itself from competitors in a positive way.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q4	Employees are being appraised based on evaluations from supervisors, peers, and customers.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q5	The organization's reward policies are performance-linked.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q6	Leadership development has a high significance in HR of the organization.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q7	Measures for Vocational Education and Training (VET) have a high significance in the organization.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q8	There is a long-term strategy in the organisation concerning the need for further education and training of employees.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q9	Employees (i.e. non-management) are involved in decision processes; for example when establishing strategic plans or discussing new policies.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree
Q10	Research and development (RandD) is of high significance within the organization.	unknown to me or n/a fully agree mostly agree mostly disagree fully disagree

Q11	The internal systems and procedures support innovation.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q12	Employees in your organization actively improve their professional competencies.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q13	Information about the latest innovations and changes in the organization is continuously given to the staff.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q14	The sharing of knowledge and experience is common within your organization (e.g. by sharing best-practices).	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q15	Employees are informed about the strategies and aims of the organization.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q16	All the members of the organization share the same aim, to which they feel committed.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q17	There are opportunities to learn (e.g. visit to other parts of the organization, internal training programs, etc.) so as to make employees aware of the different duties within the organization.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q18	Teamwork is a very common practice in the company.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q19	Employees in your organization actively explore	fully agree

	the current market and related new developments.	mostly agree mostly disagree fully disagree unknown to me or n/a
Q20	Making suggestions about internal improvements and innovations is common within your organization.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q21	Employees have a positive attitude towards a continuous advancement of the organization.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q22	The organizations business situation is better than sectoral average.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q23	The development of the organizations turnover/volume of sales is better than sectoral average.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q24	The development of the organizations' profits is better than sectoral average.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q25	The reputation of the organization is better than sectoral average.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q26	The customer/client loyalty of the organizations is higher than sectoral average.	fully agree mostly agree mostly disagree fully disagree unknown to me or n/a
Q27	The organization handles changes and changing conditions in its environment better than	fully agree mostly agree

	sectoral average.	<p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p>
Q28	The employees of the organization are more satisfied with their employer than on sectoral average.	<p>fully agree</p> <p>mostly agree</p> <p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p>
Q29	It is easier for the organization to find qualified work force for vacant positions (e.g. skilled worker positions, apprenticeships etc.) than it is on sectoral average.	<p>fully agree</p> <p>mostly agree</p> <p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p>
Q30	Vocational Education and Training (VET) has a positive effect on the development of the organization.	<p>fully agree</p> <p>mostly agree</p> <p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p>
Q31	Human Resource Management (HRM) has a positive effect on the development of the organization.	<p>fully agree</p> <p>mostly agree</p> <p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p>
Q32	In which industry sector of the Federal Economic Chamber works the organization you are employed with?	<p>mostly agree</p> <p>mostly disagree</p> <p>fully disagree</p> <p>unknown to me or n/a</p> <p>Crafts and Trades</p> <p>Industry</p> <p>Commerce</p> <p>Banking and Insurance</p> <p>Transport and Communications</p> <p>Tourism and Leisure</p> <p>Information and Consulting</p> <p>other industry sector</p> <p>respectively no member of the Federal Economic Chamber</p> <p>unknown to me or n/a</p>
Q33	How many employees work with the organization you are employed with?	<p>1 to 25</p> <p>26 to 50</p> <p>51 to 100</p> <p>101 to 150</p> <p>151 to 250</p> <p>251 to 500</p>

Q34	How many apprentices work with the company?	more than 500 none 1 to 5 6 to 10 11 to 20 21 to 30 31 to 50 more than 50
Q35	Which of the following tasks are included in your work responsibilities?	Manager with responsibility for HR department Personnel manager Person responsible for HRD Member of HR department Organizational Development Person responsible for further education and training other

Data source: author's own construction

Pre-study: summary of main outcomes

Table Appendix 1.2: Pre-study summary of main outcomes

<u>Question</u>	<u>Answers</u>
(pre-1) Do you feel that company specific human resource development as tool of HRM, i.e. in comparison to general or non-specific human resource development measures, enhances the success of such measures in a significant way?	The opinions of the dialogue partners differed somewhat but in general the tenor was that the success of individualized VET depends strongly on the quality of the specifications by the initiator (mostly the employer) or else depends very much on the very situation and context.
(pre-2) Do you feel that the value of organizational learning and HRM can be measured in terms of increased and more lasting business success?	<p>On this question the general opinion was that motivation and innovational power were general benefits of organizational learning/HRD. The staff would be better trained and more skilled and therefore more able and productive.</p> <p>One dialogue partner even pointed out that it could be measured that turnover was rising as consequence of HRM and in years where individual HRM was stopped, the turnover also would have begun to drop significantly.</p> <p>On the other hand, especially very skilled people that would have had a lot of good further education and training tended to follow their own career paths which often lead them away from the company.</p> <p>So, the overall impact for the company as a whole would be difficult to state.</p>
(pre-3) Do you feel that organizational learning and HRM pays off in terms of organizational performance? And if so, do the costs of the regarding investments are justified by the return?	<p>The answers were unilateral and clear: In the opinion of the dialogue partners the cost-benefit-ratio is absolutely positive in the long run; however, not necessarily in the short run.</p> <p>One dialogue partner here stressed the point that as an extra benefit of human resource development as part of HRM measures amongst the companies' employees their networking abilities would increase.</p>

Data source: author's own construction

Pre-study: Overview of experts for guided-interviews

Table Appendix 1.3: Pre-study overview of experts for guided-interviews

No. of represented company	Business sectors⁹	Group by size (no. of employees)¹⁰	Practical experience and background of expert
1	Commerce, Tourism and Leisure	Up to 100 (no. of employees 84)	Over 15 years of human resource management experience with special focus on human resource development
2	Industry	Over 500 (no. of employees 537)	Over 30 years of HRM experience; over 10 years of which as personnel director responsible for around 700 employees.
3	Crafts and Trades, Commerce, Information and Consulting	101 thru 500 (no. of employees 133)	Over 10 years as CEO including practical experience in organizational learning and development as well as HR issues.
4	Information and Consulting	Up to 100 (no. of employees 14)	Over 5 years of experience as specialist in human resource development with university background in organizational learning.
5	Crafts and Trades, Commerce, Information and Consulting	101 thru 500 (no. of employees 225)	Over 10 years of experience in the HR department with focus on human resource development.
6	Crafts and Trades, Industry, Commerce, Transport and Communications, Tourism and Leisure, Information and Consulting	Over 500 (no. of employees 1.498)	Over 15 years of practical HR experience and university background in HRM.
Names of business enterprises and interview partners are known to the author. The business enterprises and/or interview partners chose for reason of general privacy policy to remain anonymous.			

The table is the author's own construction

⁹ Active business sectors as defined by the Austrian Federal Economic Chamber, date 26.05.2017

¹⁰ Number of employees by the end of 2016 according to the data source of the Austrian Federal Economic Chamber, date 26.05.2017

Electronic survey: external reviewers of questionnaire

Table Appendix 1.4: Electronic survey: external reviewers of questionnaire

<u>External reviewer</u>	<u>Organization</u>	<u>Position</u>	<u>Review questions</u>
Prof. (FH) Dr. Gölzner	University of Applied Sciences Salzburg	Head of the department for Organizational Development	initial run of questionnaire review for: <ul style="list-style-type: none"> ▪ conclusiveness ▪ exclusiveness ▪ validity
Ass. Prof. Dr. Vilka	University of Latvia	Head of Economic Faculty	
MMag. Aigner	Independent researcher	university graduate	Initial run of questionnaire review for: <ul style="list-style-type: none"> ▪ handling ▪ time frame ▪ comprehensibility
Mag. Schraffl	Academic	university graduate	
Mag. Haslinger	Academic and executive	Head of department for Organizational Development/ Institute for Economic Promotion Vienna	
Mag. Schütze	Academic and executive	Head of department for Organizational Development/ Institute for Economic Promotion Styria	
Mag. Nowak	Academic and executive	Head of department for Organizational Development/ Institute for Economic Promotion Lower Austria	

Data source: author's own construction

Compilation of test items for organizational learning

Table Appendix 1.5: Compilation of test items for organizational learning

Factor in current theoretical scheme	Author(s), year and suggested OL items (The fields with a coloured background were chosen as items for the current work; complements by the researcher are in <i>italic</i>)	
	(López et al. 2005)	(Kuo, 2011)
Knowledge Acquisition	Knowledge Acquisition <ul style="list-style-type: none"> ▪ Cooperation agreements with other companies, universities, technical colleges, etc., is promoted. (external) ▪ The company is in touch with professionals and expert technicians. (external) ▪ The organization encourages its employees to join formal or informal networks made up of people from outside the organization. (external) ▪ The employees attend fairs and exhibitions regularly. (external) 	Learning practice <ul style="list-style-type: none"> ▪ Employees in your organization actively improve their professional competencies

	<ul style="list-style-type: none"> ▪ There is a consolidated and resourceful RandD policy. (internal) ▪ New ideas and approaches on work performance are experimented continually (internal) ▪ Organizational systems and procedures support innovation (internal) 	
Knowledge Distribution	<p>Knowledge Distribution</p> <ul style="list-style-type: none"> ▪ All members are informed about the aims of the company. ▪ Meetings are periodically held to inform all the employees about the latest innovations in the company. ▪ The company has formal mechanisms to guarantee the sharing of best practices among the different fields of activity ▪ There are individuals within the organization who take part in several teams or divisions and who also act as links between them. ▪ There are individuals responsible for collecting, assembling and distributing employee' suggestions internally. 	<p>Information sharing pattern</p> <ul style="list-style-type: none"> ▪ Your organization encourages employees to share work experiences or learning reflections. ▪ Employees in your organization actively explore the current market and related new product information
Knowledge Interpretation	<p>Knowledge Interpretation</p> <ul style="list-style-type: none"> ▪ All the members of the organization share the same aim, to which they feel committed. ▪ Employees share knowledge and experience by talking to each other. ▪ Teamwork is a very common practice in the company ▪ The company develops internal rotation programs so as to facilitate the shift of the employees from one department or function to another ▪ The company offers other opportunities to learn (visits to other parts of the organization, internal training programs, etc.) so as to make individuals aware of other people's or departments' duties. 	
	<p>Organizational Memory</p> <ul style="list-style-type: none"> ▪ The company has databases to store its experiences and knowledge so as to be able to use them later on. ▪ The company has directories or e-mails filed according to the field they belong to, so as to find an expert on a specific issue at any time. ▪ The company has up-to-date databases of its clients. ▪ There is access to the organization's database and documents through some kind of network (Lotus Notes, intranet, etc.). ▪ Databases are always kept up-to-date. ▪ All the employees in the organization have access to the organization's databases. ▪ Employees often consult the databases. ▪ The codification and knowledge administration system makes work easier for the employees. 	
Improve ment Attitude		<p>Inquiry climate</p> <ul style="list-style-type: none"> ▪ Employees in your organization actively explore the current market and related new product information. <p>Achievement mindset</p>

		<ul style="list-style-type: none"> Employees in your organization set work-related goals and try to accomplish them.
	<ul style="list-style-type: none"> <i>Employees have a positive attitude towards a continuous advancement of the organization.</i> 	

Data source: author's own construction

Compilation of test items for human resource management

Table Appendix 1.6: Compilation of test items for human resource management

Factor in current theoretic al scheme	Author(s), year and suggested HRM items (The fields with a coloured background were chosen as items for the current work; complements by the researcher are in <i>italic</i>)	
	(Boston Consulting Group and World Federation of People Management Associations 2012a)	(Kuo, 2011)
Staffing	<ul style="list-style-type: none"> p. 13 "Compared with companies with low-rated capabilities, companies with highly rated capabilities are ... 3.3x more likely to implement long-term forecasting ..." p. 15 "Proficient companies were [] 2.8 times more likely [] to have an established process for refining their employer brand" 	<ul style="list-style-type: none"> Your organization has standardized operation procedures and policies for recruiting. (Personnel staffing)
Appraisal	<ul style="list-style-type: none"> <i>The organization takes HR measures for identifying, recruiting, and retaining employees for key positions and functions.</i> 	
Rewards and Compensation		<ul style="list-style-type: none"> Your organization's reward policies are performance-based. (Reward and compensation)
Training and Development	<ul style="list-style-type: none"> p. 8 "... need to place greater emphasis on developing further leaders ... Moreover, companies need to make leadership planning an integral part of their people planning efforts ..." 	<ul style="list-style-type: none"> Your organization values individual training as well as team training (Training and development)
	<ul style="list-style-type: none"> <i>Measures for Vocational Education and Training (VET) have a high significance in the organization.</i> 	
	<ul style="list-style-type: none"> <i>There is a long-term strategy in the organization concerning the need for</i> 	

	<i>further education and training of employees.</i>
Employee Participation	<ul style="list-style-type: none"> When establishing strategic plans or discussing new policies, your organization invites employees (non-management) to participate.

Data source: author's own construction

Overview of critical HRM topics and mapping with HRM dimensions

Table Appendix 1.7: Overview of critical HRM topics and mapping with HRM dimensions

<u>Critical HRM topics</u> (cf. Boston Consulting Group and World Federation of People Management Associations, 2010)	<u>Dimension of HRM</u>
<ul style="list-style-type: none"> Managing talent ranks over several years at the top. Identifying, attracting, and retaining talent continues to be the most important future HR topic. Talent management in this context will be referred to as the composition of all HR measures taken by an organization in order to secure its long-term needs for key positions and functions (cf. Ritz, 2011). Managing talent in addition ranks no. four of the most important future HR topics in a survey conducted by Koller (2012). 	Staffing
<ul style="list-style-type: none"> Strategic workforce planning also maintained its ranking as a crucially important topic for the future over several years, as companies struggle with forecasting long-term scenarios for workforce supply and demand. 	Staffing
<ul style="list-style-type: none"> According to an Austrian HR survey (cf. Koller, 2012) the issue of 'Employer Branding' was the most important future topic in HR. 	Staffing
<ul style="list-style-type: none"> Improving performance management and rewards is a topic that separates strong and weak companies. In terms of OP (as measured by revenue and profitability growth). It was ranked the second-highest HR capability by high-performing companies but only ninth by low performing ones (cf. Boston Consulting Group and World Federation of People Management Associations, 2010: 5) 	<ul style="list-style-type: none"> Appraisal and Compensation

<ul style="list-style-type: none"> ▪ Improving leadership development was rated second highest again over a period of several years and has risen in importance over the years. ▪ It was also the second most prevalent topic according to Koller (2012) 	Human resource development
<ul style="list-style-type: none"> ▪ Employee engagement suffered during the past years because of layoffs and cutbacks. 	Employee participation

Data source: author's own construction

Compilation of test items for organizational performance

Table Appendix 1.8: Compilation of test items for organizational performance

Factor in current theoretical scheme	Author(s), year and suggested OP items (The fields with a coloured background were chosen as items for the current work; complements by the researcher are in <i>italic</i>)		
	(Pérez López 2005)	(Gurbuz and Mert 2011)	
Economic performance	<ul style="list-style-type: none"> ▪ <i>The organizations business situation is better than sectoral average.</i> 		
	<ul style="list-style-type: none"> ▪ Degree of satisfaction concerning financial profitability ▪ Degree of satisfaction concerning growth in sales ▪ Degree of satisfaction concerning growth in profits ▪ Degree of satisfaction concerning sales margins 	Perceived financial and market performance: <ul style="list-style-type: none"> ▪ Average sales volume growth over the past three years ▪ Average profit over the past three years ▪ Average market share growth over the past three years ▪ Average return on investment over the past three years 	
General Competitiveness	<ul style="list-style-type: none"> ▪ The firm has a good reputation in its sector ▪ <i>Its customer loyalty is high</i> ▪ The employees are satisfied working in the firm ▪ <i>The firm easily adapts to the changing conditions of the environment</i> ▪ The firm has a level of innovation higher than the sector average 	Perceived operational performance: <ul style="list-style-type: none"> ▪ <i>Company image and reputation in public</i> ▪ Degree of product and service quality ▪ Degree of efficiency of customer expectancy ▪ Degree of customer satisfaction 	

	<ul style="list-style-type: none"> ▪ The firm has a high success rate in new product launches ▪ The products supplied by the firm are considered high quality 		
<p>Human resource performance</p>	<ul style="list-style-type: none"> ▪ The employees are satisfied working in the firm 		<ul style="list-style-type: none"> ▪ Your organization has multiple recruiting strategies to attract talents (Employee attraction) ▪ Your organization provides well-designed wellness programs to retain employees (employee retention) ▪ Your organization values the interactions between management and staff, and among staff members (Employee relation)
	<ul style="list-style-type: none"> ▪ <i>It is easier for the organization to find qualified work force for vacant positions (e.g. skilled worker positions, apprenticeships etc.) than it is on sectoral average.</i> 		

Data source: author's own construction

Appendix 2: Details Information on Findings from Literature Review

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Notions of Organizational Learning by scientific discipline

Table Appendix 2.1: Notions of Organizational Learning by scientific discipline

<u>Literature on</u>	<u>Notion of Organizational Learning by scientific discipline</u>
Economy	Learning is seen either as quantitative improvement in activities or as a form of intangible and vaguely defined positive outcome (Dasgupta 2012).
Business Management	Learning is equated with sustainable comparative competitive efficiency (M. Dodgson 1993).
Innovation	Learning as factor for promotion of comparative innovation efficiency (Hamel 1991).
Entrepreneurship	Organizational Learning was considered an attribute of entrepreneurship and risk taking (Naman and Slevin 1993; Sykes and Block 1989).
Leadership	OL was seen to facilitate leadership (Meen, David E., and Mark Keough 1992; Slater and Narver 1995).
Organizational structures	OL was perceived as part of organic structures (Gupta, Anil K., and Vijay Govindarajan 1991; Woodman, Richard W., John E. Sawyer, and Ricky W. Griffin 1993).
Strategic planning	OL as part of decentralized strategic planning processes (Day, G. S. 1990; Hart, Stuart L. 1992).
Individual development	OL as part of individual development (Garvin 1993).

Data source: author's own construction

Aspects of organizational learning by scientific discipline

Table Appendix 2.2: Aspects of organizational learning by scientific discipline

<u>Field of research/interest</u>	<u>Aspects of organizational learning by scientific discipline</u>
Economic history	<ul style="list-style-type: none"> ▪ The explanation of the importance of Organizational Learning for the development of new industries and technologies (Rosenberg 1976). ▪ The development of formal research and development (RandD) as institutionalized learning mechanisms (Mowery 1981).
Industrial economy	<ul style="list-style-type: none"> ▪ OL was also debated in the context of its effect on productivity (Arrow 1962), ▪ as well as its effect on industrial structures (Dosi 1982).
Strategic management	<ul style="list-style-type: none"> ▪ Organizational Learning was explored with focus on the “dynamic capabilities” theory (Teece, David J., Gary Paul Pisano, and Amy Shuen 1990). ▪ The connections between OL and innovation has been analyzed on a strategic management level (Mark Dodgson 1991; Loveridge, Ray. 1990).
Management research	<ul style="list-style-type: none"> ▪ As (large-sized) corporations attempted to find ways for developing strategy, structure and systems which would be more adaptable and responsive to internal and external environmental changes the concept of Organizational Learning was very appealing (P. M. Senge 1990c). ▪ OL is furthermore considered to be a key to competitive advantage (Michael Porter 1985). ▪ Technological change in products, markets, and processes directly influences a company’s strategy and Organizational Learning becomes a key in new product development processes (Rothwell 1994).

Data source: author’s own construction

Meta-analysis on research on the relationship between organizational learning and HRM, and organizational performance

Table Appendix 2.3: Meta-analysis on research on the relationship between organizational learning and HRM, and organizational performance

<u>Author year of publication</u>	<u>Title</u>	<u>Purpose and Findings (Abstracts)</u>	<u>Agreement on positive connection between organizational learning / HRM and organizational performance</u> FA = full agreement PA = partly agreement DA = disagreement	<u>Comment by the author</u>
(Huselid 1995)	The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance	The study evaluates the links between systems of Human Resource Management in terms of High Performance Work Practices and firm performance. Results based on sample of nearly one thousand firms indicate that there is an economically and statistically significant impact on turnover and productivity and short- and long-term measures of corporate financial performance.	FA	As Vocational Education and Training is a part of HRM the findings strongly support the hypothesis of this work.
(Becker and Gerhart 1996b)	The Impact of Human Resource Management on Organizational Performance: Progress and Prospects	The study describes why HRM decisions are likely to have an important and unique influence on organizational performance. suggestions intended to help researchers studying these questions build a more cumulative body of knowledge that will have key implications for both theory and practice. "	FA	As HRM is seen by the author as part of Organizational Learning the findings of the study can be seen as at least in part sustaining the hypothesis of this work.
(Guest 1997)	Human resource management and performance: a review and research agenda	There is a growing body of evidence supporting an association between HRM practices and various measures of OP. However, it is not clear why this association exists. This paper argues that to provide a convincing explanation of this association we need to improve our theoretical and analytic frameworks in three key areas. These are the nature of HRM, and especially the rationale for the specific lists of HR practices; the nature of organizational performance; and the linkage between HRM and performance.	FA	The results seem to sustain the hypothesis of this research that organizational learning positively influences organizational performance.
(Baker and Sinkula 1999)	The synergistic effect of market orientation and learning orientation on Organizational Performance	This empirical study supports the viewpoint that OL is likely to indirectly affect OP by improving the quality of its market-oriented behaviors and directly influence OP by facilitating the type of generative learning that leads to innovations in products, procedures, and systems and therefor creating a sustainable competitive advantage.	FA	The results suggest a positive link between Organizational Performance organizational learning for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Goh 2001)	THE LEARNING ORGANIZATION : AN EMPIRICAL TEST OF A NORMATIVE PERSPECTIVE	This paper proposes a framework for understanding the concept of a learning organization from a normative perspective. A questionnaire was developed to operationally measure the described management practice attributes of a learning	DA	The results seem to contradict the notion that learning capability leads to higher organizational performance in terms of financial results but a

		organization. Using a sample of four organizations and 612 subjects, support was found for three a priori predictive hypotheses derived from a conceptual framework. Implications of the results and further empirical research are discussed, especially for linking learning organization attributes to performance using larger samples and multiple measures.		significant and positive relationship to job satisfaction (Goh 2001; Goh, Elliott, and Quon 2012).
(Bontis 2002)	IT competency and firm performance: is organizational learning a missing link?	n/a	FA	The empirical study has shown the existence of a positive relationship between organizational learning and organizational performance (Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan 2011)
(Calantone, Cavusgil, and Zhao 2002)	Learning orientation, firm innovation capability, and firm performance	Contemporary organizations require a strong learning orientation to gain competitive advantage. Based on in-depth interviews with senior executives and a review of the literature, the present investigation delineates four components of learning orientation: commitment to learning, shared vision, open-mindedness, and intraorganizational knowledge sharing. A framework is tested using data from a broad spectrum of US industries. Learning orientation is conceptualized as a second-order construct. Its effect on firm innovativeness, which in turn affects firm performance, is examined. The results generally support theoretical predictions, and some interesting findings emerge.	FA	The results suggest a positive link between organizational performance and organizational learning for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Brockman and Morgan 2003)	The Role of Existing Knowledge in New Product Innovativeness and Performance	n/a	FA	With regard to the relationship between organizational learning and organizational performance the study has found organizational learning as a key element for improving organizational performance (Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan 2011)
(Vlado and Škerlavaj 2003)	ORGANIZATIONAL LEARNING AND ITS IMPACT OF FINANCIAL AND NONFINANCIAL PERFORMANCE	Conclusion: Main goal of our contribution was to develop theoretical and empirical framework to simultaneously test impact that organizational learning process has on organizational performance – in financial and non-financial terms. Using data for 100 Slovenian companies with more than 100 employees gathered in June 2003, 3 hypotheses were tested. Arguments for Freeman's Stakeholder theory proved to be	FA	The authors see a clear connection between organizational learning and organizational performance in both financial and non-financial terms.

		ethical as well as purely financial in their nature. Companies that invest more efforts in achieving higherlevel organizational learning gain both in financial and non-financial terms.		
(Guest 2003)	Human Resource Management and Corporate Performance in the UK	Using objective measures of performance, greater use of HRM is associated with lower labour turnover and higher profit per employee but not higher productivity. After controlling for previous years' performance, the association ceases to be significant. Using subjective performance estimates, there is a strong association between HRM and both productivity and financial performance. The study therefore confirms the association between HRM and performance but fails to show that HRM causes higher performance.	DA	The results seem to (partly) contradict the notion that HRM leads to higher organizational performance.
(Lee and Choi 2003)	Knowledge Management Enablers, Processes, and Organizational Performance: An Integrative View and Empirical Examination	The authors state that <i>"Knowledge is recognized as an important weapon for sustaining competitive advantage ..."</i> To establish credibility between knowledge creation or Organizational Learning and Organizational Performance, organizational creativity was incorporated into the model. Organizational creativity was found to be critical for improving OP.	PA	The authors evienv that organizational learning can act as a mediator by which organizational performance is influenced in a positive way.
(Hult, Ketchen, and Nichols 2003)	Organizational learning as a strategic resource in supply management	This study considers the potential role of organizational learning as a strategic resource in supply management. A model of learning in supply management processes is examined using samples representing three nodes of one Fortune 500 organization's supply chains (internal SBU customers, n=141; corporate buyers, n=115, and external suppliers, n=58). Organizational Learning is viewed as a composite construct arising from four tangible indicators: team-, systems-, learning-, and memory-orientations (each of those orientations is measured with four to five items). The results indicate that learning has a positive effect on a set of learning consequences, supply management consequences, management consequences, and performance consequences.	FA	The results seem to sustain the hypothesis of this research project that there is a positive relationship between learning capability and financial performance (Yang, Watkins, and Marsick 2004; Goh, Elliott, and Quon 2012).
(Jashapara 2003)	Cognition, culture and competition: an empirical test of the learning organization	This research examines the principal assumption underlying the learning organization literature that organizational learning leads to increased organizational performance and explores the role of OL, culture and focused learning on OP. The	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).

		study is based on a stratified sample of 181 UK construction firms and adopts a structural equation methodology. As no scales exist from prior research, a new instrument is developed for a learning organization. The results suggest that double-loop learning and cooperative cultures have a positive effect on OP. The effect of competitive forces means that OL focused on efficiency and proficiency leads to competitive advantage in the UK construction industry.		
(Tippins and Sohi 2003)	IT competency and firm performance: is organizational learning a missing link?		FA	The empirical study has shown the existence of appositve relationship between organizational learning and organizational performance (Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan 2011)
(Hartog and Verburg 2004)	High performance work systems, organisational culture and firm effectiveness	The HRM literature emphasises the importance of people in enhancing firm performance or even creating competitive advantage. This study provides further evidence on the link between so-called high performance work systems and firm performance and relates these to organisational culture. In total 175 organisations from different sectors in the Netherlands participated. Senior HR managers were questioned on HRM practices and chief executives on organisational culture. Three different groups of personnel are distinguished in the measures: core employees, managers and specialist professional staff. One high performance work system could be distinguished, consisting of a combination of practices with an emphasis on employee development, strict selection and providing an overarching goal or direction. Results of regression analyses controlling for sector, firm size and age show a significant impact of this system on several performance outcomes (perceived economic outcomes, beyond contract and absenteeism), as well as positive relationships with three organisational culture orientations. Practices that are not part of this combination also show some positive (but limited) links with culture and outcomes.*	FA	The findings of the study suggest that HRM supports organizational performance.
(Yang, Watkins, and Marsick 2004)	The construct of the learning organization: Dimensions, measurement, and	This research describes efforts to develop and validate a multidimensional measure of the learning organization. An instrument was developed based on a critical review of both the conceptualization and practice of this	FA	The results seem to sustain the hypothesis of this research project that there is a positive relationship between learning capability

	validation	construct. Supporting validity evidence for the instrument was obtained from several sources, including best model-data fit among alternative measurement models, nomological network among dimensions of the learning organization, and organizational performance outcomes. Acceptable reliability estimates were obtained for the seven proposed dimensions. Consequently, the instrument, Dimensions of the Learning Organization Questionnaire, was recommended for use in organizational studies.		and financial performance (Yang, Watkins, and Marsick 2004; Goh, Elliott, and Quon 2012).
(Fernandes, Mills, and Fleury 2005)	Resources that drive performance: an empirical investigation	Findings – In general, resources seemed to be correlated to performance, but further details appeared: employee competency presented no correlation with performance; environmental factors related to demand seemed to be the strongest performance determinant; employee satisfaction showed association with all BSC perspective.	DA	The results contradict the hypothesis of this work. However the researcher state as research limitations <i>The research circumstances are quite particular and should not be generalized to other organizations..”</i>
(Hoffman, Hoelscher, and Sherif 2005)	Social capital, knowledge management, and sustained superior performance	The article aims to extend understanding in the field of knowledge management by examining how knowledge management can affect Organizational Performance. The article describes the relationship between knowledge management and how it helps organizations achieve a sustained superior Organizational Performance. The results suggest that organizations with high levels of social capital have more knowledge-management capabilities than organizations with low levels of social capital.	PA	The results seem to sustain the hypothesis of this research project although the research focus is on knowledge management and not specifically organizational learning .
(Kontoghiorghes, Awbre, and Feurig 2005)	Examining the relationship between Learning Organization (LO) characteristics and change adaptation, innovation, and Organizational Performance	Organizational Learning characteristics were found to be the strongest predictors of rapid change adaptation, quick product or service introduction, and bottom line Organizational Performance: open communications and information sharing; risk taking and new idea promotion; and information, facts, time, and resource availability to perform one's job in a professional manner.	FA	The results seem to clearly sustain the hypothesis of this research project although the research focus is on knowledge management and not specifically on organizational learning.
(Pérez López et al. 2005)	Organizational Learning as a determining factor in business performance	The results provide support for the view that Organizational Learning contributes positively both to innovation and competitiveness and to economic/financial results. Furthermore, the results show a positive relationship between innovation and competitiveness and economic/financial results.	FA	The results seem to clearly sustain the hypothesis of this research project although the research focus is on knowledge management and not specifically on organizational learning .
(Wall 2005)	The romance of human resource management and	It is often assumed that research over the last decade has established an effect of HRM practices on organizational performance.	PA	The authors argue that the overall effect of organizational learning on

	business performance, and the case for big science	Our critical assessment of existing studies finds that, although collectively they have opened up a promising line of inquiry, their methodological limitations make such a conclusion premature. We argue that future progress depends on using stronger research methods and design that, in turn, will require large-scale long-term research at a level of magnitude that probably can only be achieved through partnerships between research, practitioner and government communities. We conclude that progress so far justifies investment in such big science.		organizational performance is not clear respectively the direction of correlation is not predetermined.
(Galbreath and Galvin 2006)	Accounting for performance variation: how important are intangible resources?	The results suggest that, in the main, intangible resources do explain performance variation, even when measured against other potential performance impacting factors. The results suggest that capabilities, conceptualized as an intangible resource, might not be the firm's most important, contrary to theory. Further, this study suggests that future research might best be served by exploring relationships between resources and the degree to which resource combinations are important to firm performance	PA	Although results point in the direction that intangible resources – as is the knowledge and knowhow of a company's personal obtained via OL/HRM – sustain OP, the research focus is to wide as to transfer the results directly to the research question in this work.
(García-Morales, Llorens-Montes, and Verdú-Jover 2006)	Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship	Considers OI and OL jointly to promote organizational entrepreneurship and to increase competitive advantages. Empirically reflects the need to strengthen different strategic capabilities to achieve an adequate level of both organizational issues and thus improve performance and encourage entrepreneurship.	FA	Findings support the view of a positive relationship between organizational learning and organizational performance (Kuo 2011).
(Hanvanich 2006)	The Relationship of Learning and Memory With Organizational Performance: The Moderating Role of Turbulence	Drawing on organizational theory, contingency theory, dynamic capability theory, and empirical data collected from managers, the authors demonstrate that when environmental turbulence is considered, the relationships of Organizational Learning and memory to Organizational Performance and innovativeness contrast greatly. In general, the strength of the relationship between OL orientation and OP is stronger in highly turbulent environments than in environments with low turbulence.	FA	The results suggest a positive link between organizational learning and organizational performance for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Khandekar and Sharma 2006)	Organizational Learning and performance: Understanding Indian scenario in present global context	The paper finds that the OL, which largely gets reflected through HRM activities, has a positive correlation with OP.	FA	Results report a positive association between learning capability and the measured organizational performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Keskin 2006)	Market orientation,	The results show that firm innovativeness	FA	The results suggest a

	learning orientation, and innovation capabilities in SMEs: An extended model	positively affects firm performance; firm learning-orientation positively influences firm innovativeness; firm market-orientation positively impacts firm learning orientation; firm learning-orientation mediates the relationship between firm market-orientation and firm innovativeness; and firm market-orientation indirectly impacts firm performance via firm innovativeness and learning.		positive link between Organizational Performance Organizational Learning for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Marqués and Simón 2006)	The effect of knowledge management practices on firm performance	This paper shows how the firms that adopt knowledge management practices obtain better results than their competitors.	FA	The results seem to sustain the hypothesis of this research project that organizational learning positively influences organizational performance.
(Prieto and Revilla 2006)	Assessing the Impact of Learning Capability on Business Performance: Empirical Evidence from Spain	It is widely recognized that the development of learning capability is key to achieve a durable competitive advantage. However, the analysis of the relevance of learning capability to improve business performance and, thus, the organizational competence has been insufficiently developed in literature. Based on data from 111 Spanish companies, this article explores the link between learning capability and the improvement of business performance by comparing how the main dimensions of learning capability—stocks of knowledge and flows of learning—impact on performance, in terms of both non-financial and financial performance. The results show that those organizations with the highest levels in their knowledge stocks and learning flows obtain a superior performance.	FA	Results report a positive association between learning capability and the measured organizational performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Ruiz-Mercader, Meroño-Cerdan, and Sabater-Sánchez 2006)	Information technology and learning: Their relationship and impact on organisational performance in small businesses	Results show that individual learning along with individual and collaborative information technologies have a positive and significant impact on organisational learning. On the other hand, unlike individual and collaborative information technologies, individual and organisational learning have shown significant and positive effects on organisational performance. Therefore, information technology has a significant impact on outcomes only when in a proper context of learning is in place. Small businesses in sectors with high knowledge-intensity levels are more likely to use more frequently information technology tools and organisational learning practices.	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Spicer 2006)	Organizational Learning in Smaller Manufacturing Firms	Data are presented from a number of samples of small- and medium-sized enterprises in the UK that indicate that the organizational learning orientation measure exhibits acceptable reliability and validity.	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott,

		Furthermore, a number of relationships between organizational learning and financial and non-financial performance were observed. The implications of the findings for research, policy and the management of learning within organizations are discussed.		and Quon 2012).
(Wu and Cavusgil 2006)	Organizational learning, commitment, and joint value creation in interfirm relationships	In this study, we underline the importance of distinguishing firm-specific and collaboration-specific benefits in managing interfirm relationships. We propose that strong commitment to collaboration enables firms to transform their idiosyncratic resources into higher rents for the alliance as well as themselves. We extend the organizational learning inquiry into an alliance setting and identify three factors that can facilitate commitment in interfirm relationships. The findings reinforce the importance of organizational commitment in generating higher value in interfirm relationships. We also examine some contingencies in which commitment may affect alliance performance and firm performance distinctively.	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Chen 2007)	The effect of organizational change readiness on organizational learning and business management performance	n/a	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Lin and Kuo 2007)	The mediate effect of learning and knowledge on Organizational Performance	The results show that Human Resource Management (HRM) has a direct and significant impact on Organizational Learning. Human Resource Management influences Organizational Performance indirectly through OL. In addition, OL has direct and significant influences on OP.	FA	The results seem to strongly support the hypothesis of this work that HRM positively impacts organizational performance.
(Jiang and Li 2008)	The relationship between Organizational Learning and firms' financial performance in strategic alliances: A contingency approach	This study examines the relationship between Organizational Learning and firm-level financial performance in the context of strategic alliances. Results suggest a significant, positive, and strong relationship between Organizational Learning and financial performance.	FA	The results seem to sustain the hypothesis of this research project that organizational learning positively influences organizational performance.
(Flores, Catalanello, Rau, Saxena 2008)	Organizational learning as a moderator of the effect of strategic planning on company performance	n/a	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).

(Hernaus, Miha, and Vlado 2008)	RELATIONSHIP BETWEEN ORGANISATIONAL LEARNING AND ORGANISATIONAL PERFORMANCE: THE CASE OF CROATIA	The focus of the paper is on the examination of organisational learning (OL) process and its link with organisational performance (OP) which was determined through operationalised OL and OP constructs. The research involved 202 Croatian companies employing more than 50 people. Besides determining the linkage between organisational learning and organisational performance, the research task was to determine which organisational performance measurement variables are the most and the least important, and even further, to identify the best and the worst predictable OP measurement items for each organisational learning variable. The most important finding of the study is the empirical evidence about existence of strong, statistically significant, positive relationship between organisational learning and organisational performance. In another words, organisations with development of their learning processes congruently increase their performance. The research also showed that employees' measures are the most strongly related with organizational learning process.	FA	The authors' findings support the view of the author of organizational learning sustaining organizational performance.
(Jiménez-Jimenez, Valle, and Hernandez-Espallardo 2008)	Fostering innovation: The role of market orientation and organizational learning	Findings show that, although market orientation and organizational learning foster innovation, the effect of the latter is comparatively higher. Moreover, the impact of market orientation and organizational learning on performance is completely mediated by innovation.	FA	The results suggest a positive link between organizational learning and organizational performance for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Lin, Peng, and Kao 2008)	The innovativeness effect of market orientation and learning orientation on business performance	The central finding is that learning orientation plays a full mediating role in the relationship between market orientation and innovativeness. The results indicate that organizational structure (formalization and decentralization) does not play a moderating role in the relationship between innovativeness and business performance; however, the extent of formalization of an organizational structure negatively correlates with business performance	FA	The results suggest a positive link between organizational learning and organizational performance for financial as well as non-financial variables (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Rhodes 2008)	An integrative model of organizational learning and social capital on effective knowledge transfer and perceived organizational performance	The results indicated that absorption capacity, learning intention and integration capability in organizational learning had the greatest positive relationship with process innovation in knowledge transfer. The findings suggest that organizational learning processes are more important than social capital networks within the integrated knowledge transfer framework and that management could utilize their limited	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).

		resources better to improve on organizational learning levers for greater effectiveness in knowledge transfer.		
(Wang 2008)	Entrepreneurial Orientation, Learning Orientation, and Firm Performance	Entrepreneurial orientation (EO) is a key ingredient for firm success. Nonetheless, an important message from past findings is that simply examining the direct effect of EO on firm performance provides an incomplete picture. Prior studies examined various internal and external factors that influence the EO–performance relationship. However, learning orientation has been a missing link in the examination of the relationship. Using data from 213 medium-to-large UK firms, this study finds that learning orientation mediates the EO–performance relationship, and the EO–learning orientation – performance link is stronger for prospectors than analyzers. The findings indicate that learning orientation must be in place to maximize the effect of EO on performance, and that learning orientation is an important dimension, along with EO, to distinguish prospectors from analyzers.	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Hsu, Lee, and Chih, Chiu 2009)	Organizational learning as an intervening variable in the life insurance industry	n/a	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Kodjo and Changjun 2009)	HRM Practices and Organizational Performance: An Empirical Analysis	We theorize about the assessment of HRM practices on perceptions of firm performance through Monte Carlo Method, and the Hausman’s Specification Test in the Ivorian framework. 320 enterprises were surveyed and factor analysis of 13 bundles of HRM practices was undertaken. The confirmation of the findings through simulation permitted the examiner to authenticate the reliability of the results in using the HST. The results of this paper highlight that in the Ivorian context there are significant connections between HRM practices and firm performance; that the strategic alignment of HRM is also a driver for firm performance.	FA	The findings support the hypothesis that HRM positively influences organizational performance.
(Rose, Kumar, and Pak 2009)	The Effect Of Organizational Learning On Organizational Commitment, Job Satisfaction And Work Performance	The literature review reveals that there is a relationship between organizational learning organizational commitment, job satisfaction and work performance. However, it is apparent that the integrated relationships between these variables have not been found to be reported. Hence, we examine the relationship among these variables using a sample of public service managers in	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).

		Malaysia. Organizational learning was found positively related to organizational commitment, job satisfaction, and work performance. Organizational commitment and job satisfaction are also positively related with work performance and these variables partially mediate the relationship between organizational learning and work performance. Implication of the study and suggestions for future research been discussed in this paper.		
(Weldy 2009)	Learning Organization (LO) and transfer: strategies for improving performance	The importance placed on the LO and transfer of training as critical factors for improving performance and gaining a competitive advantage necessitate that both areas be further investigated. Any relationship between the LO and transfer of training could lead to OP improvements and enable organizations to remain competitive.	PA	The results point out that further research in the field is needed.
(Zack, McKeen, and Singh 2009)	Knowledge management and Organizational Performance: an exploratory analysis	The article states that knowledge management (KM) practices were found to be directly related to OP which, in turn, was directly related to financial performance. There was no direct relationship found between KM practices and financial performance.	FA	The results seem to sustain the hypothesis of this research project that organizational learning positively influences organizational performance. Interestingly enough the authors define organizational performance explicitly not as financial performance.
(Hung 2010)	Dynamic capability: Impact of process alignment and organizational learning culture on performance	The results of this study demonstrated that although organizational learning culture significantly affected performance, its influence was mediated by dynamic capability. Furthermore, this study provides supporting evidence for the hypothesis that process alignment influences performance directly and indirectly through dynamic capabilities.	PA	Results report a positive association between learning capability and the measured performance suggesting that OL has a mediating effect on OP.
(Wu, and Fang 2010)	Improving project performance through organizational learning: an empirical study	n/a	FA	Results report a positive association between learning capability and the measured performance (Baker and Sinkula 1999; Goh, Elliott, and Quon 2012).
(Gurbuz and Mert 2011)	Impact of the strategic human resource management on organizational performance: evidence from Turkey	Empirical results from a sample of Turkey's Top 500 firms-2007 demonstrate that SHRM and selection/development practices have direct and positive effects on financial/market performance and operational performance. However, only selection/development practices are	FA	The results seem to sustain the hypothesis of this research project that organizational learning positively influences organizational performance.

		found to have a positive effect on turnover.		
(Kuo 2011)	How to improve Organizational Performance through learning and knowledge?	The results indicate that Human Resource Management strategies result in better Organizational Learning, organizational innovation, and knowledge management capability, which ultimately contributes to achieving Organizational Performance; Organizational Learning improves organizational innovation and accumulates knowledge management capability; organizational innovation results in knowledge management capability development, which contributes to the establishment of organizational development; and technological companies should utilize organizational knowledge in order to enhance Organizational Performance.	FA	The results seem to sustain the hypothesis of this research project that organizational learning positively influences organizational performance. Furthermore the article shows the connection respectively causality between: human resource management influencing organizational learning influencing organizational performance.
(Mills and Smith 2011)	Knowledge management and Organizational Performance: a decomposed view	The results show that some knowledge resources (e.g. organizational structure, knowledge application) are directly related to Organizational Performance, while others (e.g. technology, knowledge conversion), though important preconditions for knowledge management, are not directly related to Organizational Performance.	FA	The results seem to support the hypothesis of this work that organizational learning in terms of knowledge application is directly related to organizational performance.
(Mottaleb and Sonobe 2011)	An Inquiry into the Rapid Growth of the Garment Industry in Bangladesh	The results indicate that the high education of manufacturers and enterprise performance are closely associated. Presumably – according to the authors - , this is because manufacturers have to upgrade their skills and know-how continuously in order to survive the intense competition.	FA	The results seem to support the hypothesis of this work that organizational learning in terms of knowledge application is directly related to organizational performance.
(Palacios-Marques, Ribeiro-Soriano, and Gil-Pechuan 2011)	The Effect of Learning-Based Distinctive Competencies on Firm Performance: A Study of Spanish Hospitality Firms	The authors state that few empirical studies have examined how the effect of OL on learning-based competencies. The study concludes that OL promotes creation of learning-based distinctive competencies, which, in conjunction with a knowledge management approach, has a positive causal relationship with OP. Learning-based distinctive competencies are essential to this model of OP, because the direct relationship between knowledge management and OP is not significant. It is worth noting that applying knowledge management practices weighs more heavily in the balance than does adoption of principles. Those practices are orientation towards the development, transfer, and protection of knowledge; continuous	FA	The results seem to support the hypothesis of this work that organizational learning in terms of knowledge application is directly related to organizational performance.

		learning; an understanding of the organization as a global system; development of an innovative culture; an approach based on people; and competence development and management based on competencies.		
(García-Morales, Jiménez-Barrionuevo, and Gutiérrez-Gutiérrez 2012)	Transformational leadership influence on organizational performance through organizational learning and innovation.	This study analyzes the influences of transformational leadership on organizational performance through the dynamic capabilities of organizational learning and innovation. Although these indirect interrelations are very important for improving organizational performance, previous research has not usually explored them. The study confirms these influences empirically, basing the analysis on a sample of 168 Spanish firms. The results reveal that (1) transformational leadership influences OP positively through organizational learning and innovation; (2) OL influences OP positively, both directly and indirectly through organizational innovation; (3) organizational innovation influences organizational performance positively.	FA	The findings support the view that organizational learning (indirectly) positively influences organizational performance.
(Dasgupta 2012)	Conceptual Paper: Organizational Learning and Its Practices	In the current world of business and organizations, the role of organization learning is enormous as it is the learning ability and knowledge base of an organization that creates the distinctive competitive advantage. This article reviews the literature on Organizational Learning.	FA	
(Goh, and Quon 2012)	The relationship between learning capability and Organizational Performance: A meta-analytic examination	The findings support a positive relationship between learning capability and Organizational Performance, with stronger results for non-financial than financial performance. This has significant implications for justifying the investment in building a learning capability in organizations.	PA	The findings support a positive relationship between organizational learning and organizational performance, with stronger results for non-financial than financial performance.
(Saunila 2012)	A conceptual framework for the measurement of innovation capability and its effects	Describing the linkage between innovation capability and Organizational Performance respectively how the measurement of the linkage can be handled. Results show the link between innovation capability and Organizational Performance.	PA	The results seem to sustain the notion that organizational learning fosters organizational performance as organizational learning and innovational capability are strongly linked.
(Park et al. 2014)	Learning organization and innovative behavior: The mediating effect of work engagement	The purpose of this study is to investigate the mediating effect of work engagement on the relationship between learning organization and innovative behavior. The study found that learning organization culture makes a direct and indirect impact on employees' innovative work behaviors. Results from hierarchical multiple	FA	The environment of organizational learning seems to have a positive impact on organizational performance via motivation.

		regressions and structural equation modeling supported that work engagement fully mediates the relationship between the learning organization and innovative work behaviors.		
(Tseng and Lee 2014)	The effect of knowledge management capability and dynamic capability on organizational performance	Findings – The results indicate that dynamic capability is an important intermediate organizational mechanism through which the benefits of KM capability are converted into performance effects at the corporate level. That is, KM capability enhances the dynamic capability of organizations. While dynamic capability, in turn, increases organizational performance and provides competitive advantages.	PA	The results of the study underline that ‘dynamic capabilities’ sustain organizational performance and as the notion of these ‘dynamic capabilities’ comes close to the one of organizational learning in a broader sense of this work, the results ergo seem to at least partly support the hypothesis.
(Rowland and Hall 2014)	Management learning, performance and reward: theory and practice revisited	Findings – Genuine integration of individual and organizational goals or transfer of learning from the individual to the organization is not evident. Few qualitative measures of organizational performance are employed. The impact of metrics such as EFQM on organizational effectiveness is nor discernible. Management learning and development is rarely measured even when it is encouraged by the organization. There is a clear divide between research, teaching and learning and workplace practice. Performance management systems create perceptions of unreliability and inequity.	DA	The evidence from the work do not support that organizational learning helps organizational performance
(Kaplan et al. 2014)	THE RELATIONSHIP BETWEEN ORGANIZATIONAL LEARNING AND FINANCIAL PERFORMANCE: A STUDY OF SMALL-SIZED BUSINESSES IN TURKEY	In this study, we investigate the relationship between organizational learning (commitment to learning, shared vision, open-mindedness and intra-organizational knowledge sharing) and financial performance in printing companies in Konya, Turkey. The findings of the research indicated that commitment to learning and intra-organizational knowledge sharing were positively and significantly correlated with financial performance. No significant relationship between shared vision, open mindedness and financial performance was found out. Regression analysis results show that intra-organizational knowledge sharing had positive effect on financial performance. Moreover, practical implications are discussed, and suggestions for the future research are made.	PA	The authors substantiate the causal linkage between organizational learning and financial performance but not with other dimensions of organizational performance.
(Mansour, Gara, and Gaha 2014)	Getting inside the black box: HR practices and firm performance within the Tunisian financial services industry	Purpose – The purpose of this paper is to explore, and eventually unlocking, the “black box” problem by addressing the potential mediating role of human capital and organizational commitment in the relationship between high performance work systems (HPWS) and perceived firm performance in the Tunisian financial	FA	According to the authors organizational learning positively influences organizational performance both directly and indirectly via mediating variables.

		industry. Findings – Data collected from 351 respondents suggest that HPWS positively affect perceived firm performance through first, enhancing the firms’ human capital; and second, developing positive organizational commitment attitude among employees. In addition, a direct relationship between HPWS and firm performance was found.		
(Theriou and Chatzoglou 2014)	The impact of best HRM practices on performance – identifying enabling factors	Findings – Results indicate that manufacturing firms pursuing best HRM practices achieve higher performance through the interaction of these practices with KM and organizational learning capability and the creation of OC. Practical implications – HR practitioners and/or managers should focus on establishing the appropriate mechanisms for integrating “best HRM practices” with learning, knowledge and OC in order to improve performance.	FA	Although the research focus is on HR practices the results clearly indicate a positive connection to organizational learning.
(Valmohamma di, and Ahmadi 2015)	The impact of knowledge management practices on organizational performance: A balanced scorecard approach.	The purpose of this paper is to present a holistic approach regarding evaluation of knowledge management (KM) practices on organizational performance. The effects of seven critical success factors (CSFs), namely leadership role, organizational culture, KM strategy, processes and activities, training and education, information technology, and motivation and rewarding system, on organizational performance in the framework of four perspectives of balance scored card (BSC) approach were surveyed. The results revealed that KM practices positively and meaningfully (though weak) impact overall organizational performance. This impact is significant only regarding growth and learning dimension and on the other dimensions is insignificant. Also, as customer and financial constructs were loaded on one factor based on the entity of their indicators we considered these two constructs as stakeholders construct.	PA	The study supports the findings of this dissertation in the sense that it supports the view that organizational learning impacts positively on general organizational performance. Economic / financial performance was not part of the study.
(Jain, and Moreno, 2015)	Organizational learning, knowledge management practices and firm’s performance: an empirical study of a heavy engineering firm in India.	The study aims at investigating the impact of organizational learning (OL) on the firm’s performance and knowledge management (KM) practices in a heavy engineering organization in India. Results were analyzed using the exploratory factor analysis and multiple regression analysis techniques. The findings showed that all the factors of OL, i.e. collaboration and team working, performance management, autonomy and freedom,	FA	The study substantiates the view that organizational learning improves organizational performance. The study is conducted in one division of a large public organization, hence generalizability is limited.

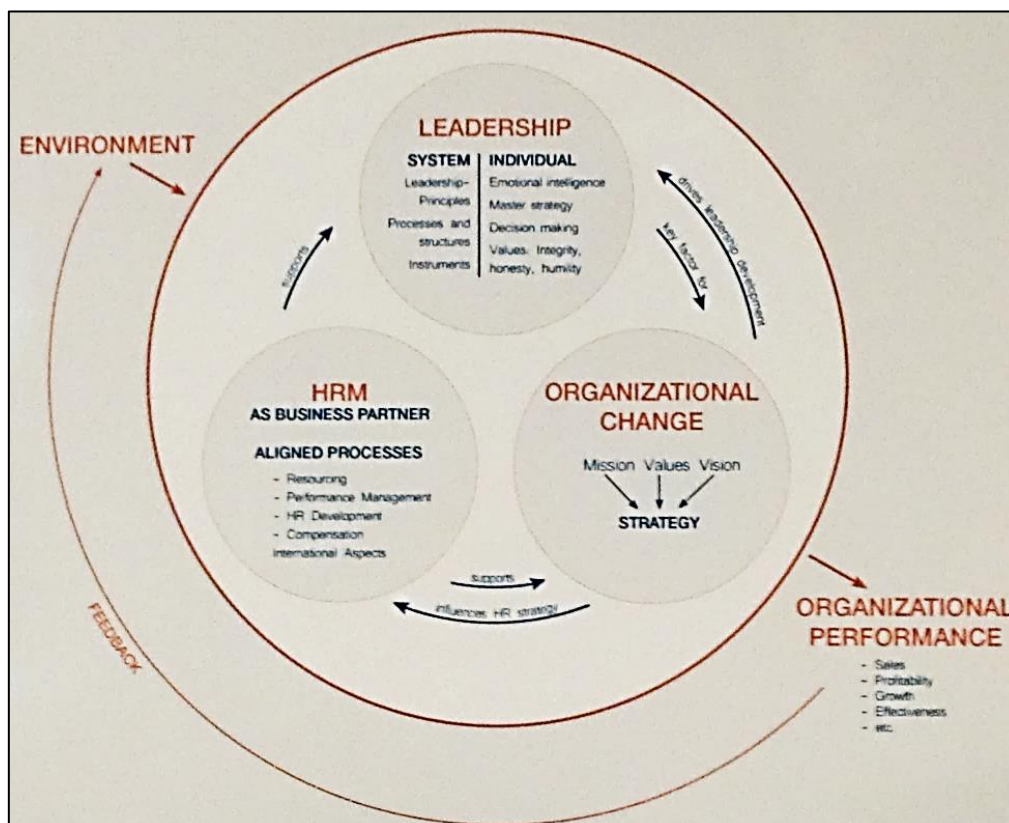
		reward and recognition and achievement orientation were found to be the positive predictors of different dimensions of firm's performance and KM practices.		
(Kasemsap, 2015)	Developing a framework of human resource management, organizational learning, knowledge management capability, and organizational performance. In Knowledge management for competitive advantage during economic crisis	This chapter introduces the framework and the practical concepts of Human Resource Management (HRM), organizational learning, Knowledge Management Capability (KMC), and organizational performance. Findings: HRM effectively acts as a trigger toward effective organizational learning and KMC processes, thus creating a valuable organizational performance.	PA	The findings of this study sustain the findings in this dissertation in so far as it is evidenced that HRM and organizational learning mediate a positive impact on organizational performance.
(Pokharel, and Choi 2015)	Exploring the relationships between the learning organization and organizational performance.	The purpose of this research is to evaluate the Dimensions of Learning Organization Questionnaire (DLOQ) framework from the perspective of public sector organizations. We have used performance indicator data after organizational learning inspired intervention in a semi-autonomous network of public sector organizations. Findings – We found evidence that confirms that the organizational level (particularly the system connection) has a positive impact on organizational performance and a mediating effect on the relationships between the individual/group levels of learning organization characteristics and organizational performance.	FA	The study sustains the findings in this dissertation in so far as a general positive impact of organizational learning as well as a mediating effect on organizational performance is evidenced.
(Chou, 2016)	Relationship Among Intellectual Capital Management, Organization Learning and Organization Performance.	This study discusses the relevance of intellectual capital management, organizational learning and Organizational Performance, and also goes a step further to study the impact of intellectual capital management to organizational learning and organizational performance. Findings: First of all, Intellectual capital management has a positive effect to organizational learning, indicating if an enterprise focusing on intellectual capital management will help enterprises organizational learning. Second, the impact of intellectual capital on organizational performance management is not significant, mainly because there are too many variables can affect organizational performance. Third, the impact of organizational learning on organizational performance is also not significant, because the outcomes of organization learning	PA	The study substantiates the findings of this dissertation in the sense that organizational learning directly influence organizational performance but financial/economic mediates performance.

		usually shown on the individual task performance first, and then influence organizational performance via employee's performance.		
(Mansouri, and Goher, 2016).	Leading Different Dimensions of Organization Performance through Human Resource Management Practices.	The primary purpose of this research work is to find out how human resource management practices including training, staffing, performance appraisal, participation, and reward system can affect the performance of Malaysian Information and Communication Technology (ICT) companies. Company's performance is identified in this work in terms of innovation, learning and growth, and internal process. The results of analysis of 223 gathered data showed that human resource management practices have significant and positive impact on innovation, learning and growth, and internal process. In addition, this study showed that performance components can affect each other significantly and positively.	FA	The study sustains the findings in this dissertation in the sense that it evidences a significant and positive impact of HRM on components of organizational performance regarding general competitiveness and human resource performance. Economic / financial performance is not part of the research.
(Schreder 2017)	THE IMPACT OF ORGANIZATIONAL LEARNING AND HUMAN RESOURCE MANAGEMENT ON ORGANIZATIONAL PERFORMANCE: THE CASE OF AUSTRIAN BUSINESS ENTERPRISES	The purpose of this dissertation is deeper insight into the hypothesized interdependencies between organizational learning, human resource management and organizational performance and a sharper delineation of the influencing items within the theoretical constructs, where the development of an independent evidence-based research model of the linkages between these theoretical constructs and the subsequent research on it allows for respective scientific conclusions and suggestions for practical management implementation. Findings Organizational learning and HRM have been found to positively influence organizational performance in terms of general competitiveness and human resource performance whereas financial/economic performance is impacted significantly only via mediating effects.	PA	Authors own dissertation.
(Kim, Walkins, and Lu 2017)	The impact of a learning organization on performance: Focusing on knowledge performance and financial performance	Purpose The purpose of this study is to examine the relationships among a learning organization, knowledge and financial performance using the Dimensions of the Learning Organization Questionnaire and its abbreviated version. Findings The study found that a learning organization has a positive effect on knowledge performance; knowledge performance has a positive effect on financial performance; and knowledge performance fully mediates the	PA	The study substantiates the findings of this dissertation in the sense that organizational learning mediates financial/economic performance via the so-called knowledge performance

		relationship between a learning organization and financial performance.		
(Saridakis, Lai, and Cooper 2017)	Exploring the relationship between HRM and firm performance: A meta-analysis of longitudinal studies.	<p>This paper draws on meta-analysis techniques to estimate the effect size of the relationship between high performance work practices (HPWPs) and firm performance measures based on the available longitudinal studies.</p> <p>The results from statistical aggregation of eight longitudinal HRM-performance studies demonstrate an overall reported correlation of 0.287. Additionally we find that a set of integrated, mutually reinforcing HPWPs has a stronger impact on firm performance than do HRM practices individually and that, this effect is statistically invariant between operational performance and financial performance.</p>	FA	The results of the study support the findings of this dissertation in so far as the HRM has a positive impact on organizational performance; however that it is limited to the circumstances applicable.

Data source: author's own construction

Research Framework University of Applied Sciences Salzburg



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Figure Appendix 2.1: Research Framework University of Applied Sciences Salzburg

Research evaluation

Research evaluation: post–study summary of main outcomes

Table Appendix 1.9: Research evaluation: Post–study summary of main outcomes

Question	Answers
<p>(post-1) Do you experience that <u>economic performance</u>, i.e. turnover or profit margin development of a company, correlates with the extent of organizational learning, i.e. knowledge acquisition, distribution and interpretation and/or the improvement attitude, taking place within the company and under what circumstances?</p>	<p>The opinions of the dialogue partners differed somewhat but in general the tenor is clearly that</p> <ul style="list-style-type: none"> ▪ the alternative model is very plausible but depends on the circumstances. Namely whether or not (economic) success is channeled into organizational learning, i.e. knowledge acquisition, distribution etc. and the development of respective corporate structures fostering organizational learning. ▪ the connection is very plausible but dependent on the size of the company. In SME there is generally speaking no active organizational learning and/or human resource management. With growing size organizations realize respective structures to foster OL. On the other side it is the case that these structures are abolished once the organization needs to reorganize (e.g. because of changes in the market and/or bad management choices etc.). ▪ economic success and following fast growth can also lead to an organizations downfall if it does not succeed in the field of organizational learning, e.g. an innovative, i.e. learning, start-up that is growing too fast (because of economic success) and can not translate knowledge distribution etc. internally fast enough so that the organization stays effective and well organized. ▪ the connection also depends on the corporate culture. If there is an attitude towards learning, i.e. an improvement attitude, economic performance can be used to further strengthen organizational learning. but on the other hand economic performance cannot per se be used to introduce the improvement attitude.

<p>(post-2) Do you experience that <u>competitive capacity</u>, i.e. reputation, customer loyalty etc. of a company, correlates with the extent of organizational learning, i.e. knowledge acquisition, distribution and interpretation and/or the improvement attitude, taking place within the company and under what circumstances?</p>	<p>On this question the experts stressed the point that</p> <ul style="list-style-type: none"> ▪ there are certainly feedback processes from competitive capacity influencing organizational learning. Positive values of competitive capacity initiate positive socio-economic effects in general, positive corporate culture etc. However, there is also the danger of steady-state tendencies because the old-established processes and structures have been so successful in the past which is not necessarily true in the future. The connection therefore can be seen as cyclical: competitive capacity enables organizational learning which leads to more competitive capacity (and/or economic performance) and so on and also vice versa. ▪ in general terms the two (theoretical) constructs are much more interlinked with each other (than economic performance and OL) in a way that better competitive capacity, e.g. reputation, customer loyalty etc., necessitates a better organizational learning structure. The assumption therefore is very plausible.
<p>(post-3) Do you experience that <u>human resource management</u>, i.e. staffing, appraisal, rewards and compensation, and training and development within a company, correlates with the extent of organizational learning, i.e. knowledge acquisition, distribution and interpretation and/or the improvement attitude, taking place within the company and under what circumstances?</p>	<p>The answers were unilateral and clear. In the opinion of the dialogue partners</p> <ul style="list-style-type: none"> ▪ HRM can positively influence organizational learning when it is done the right way. However, it is important to note that HRM can be a necessary condition for organizational learning in the knowledge management areas, i.e. knowledge acquisition, distribution, and interpretation, but can never be a sufficient condition for it, because organizational learning is influenced also by other factors, e.g. leadership processes to initiate and moderate the improvement attitude. ▪ organizational learning depends very much on the improvement attitude or willingness to learn and management in order to implement the improvement attitude via corporate structures. ▪ the assumption is plausible, because an

	organization that values HRM is much more likely to incorporate organizational learning in its corporate structure. The two (theoretical) concepts are again very much connected with each other and reciprocal effects/interdependencies are absolutely plausible.
(post-4) Do you experience that the direction of influence can be set from organizational performance, i.e. economic performance and/or competitive capacity, to organizational learning and under what circumstances?	On this question the experts stressed the point that <ul style="list-style-type: none"> ▪ both directions are plausible. The connection can up to a certain extent be described a feedback loop that can turn both ways.

Data source: author's own construction

Post-study: Overview of experts for teleconferences

Table Appendix 1.10: Post-study: Overview of experts for teleconferences

No. of expert	Institute	Practical experience and background of expert
1	Research Institute for Vocational Education and Training (Forschungsinstitut Betriebliche Bildung f-bb)	Over 20 years of research experience in the field of strategy and organizational development as well as research evaluation on an international level. Chair of research institute for research evaluation.
2	Private, state-accredited University of Applied Sciences and Management (Hochschule der Bayerischen Wirtschaft HDBW)	Over 35 years of practical experience in organizational development and over 15 years of research experience in organizational development and as university chair of the Private, state-accredited University of Applied Sciences and Management.
3	bbw Group - The Educational Association of the Bavarian Economy	Over 15 years of research expertise and practical experience as research associate in national and international research projects with special focus on organizational development.
4	Independent researcher	Over 10 years of academic experience as university lecturer and researcher as well as long-standing experience as independent researcher in the field of organizational development.
Names of institutions and interview partners are known to the author. The institutions and/or interview partners chose for reason of general privacy policy to remain anonymous.		

The table is the author's own construction

Appendix 3: Detailed Results of Analysis

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Reliability Analysis

*Reliability statistics human resource management***Table Appendix 3.1: Reliability statistics human resource management**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,856	,859	9

Data source: author's own construction

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1.	16,70	26,907	,656	,505	,832
Q2.	16,36	27,432	,644	,462	,834
Q3.	16,71	28,453	,557	,344	,843
Q4.	16,36	29,056	,381	,168	,862
Q5.	16,33	28,447	,515	,322	,847
Q6.	16,47	26,262	,645	,463	,833
Q7.	16,71	28,102	,631	,500	,836
Q8.	16,20	27,078	,695	,572	,829
Q9.	15,71	27,735	,528	,324	,846

Data source: author's own construction

*Reliability statistics organizational learning***Table Appendix 3.2: Reliability statistics organizational learning**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,850	,859	12

Data source: author's own construction

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q10.	22,60	41,997	,405	,376	,852
Q11.	22,72	41,636	,592	,457	,833
Q12.	22,99	44,193	,542	,350	,838

Q13.	23,36	42,515	,640	,557	,831
Q14.	23,03	42,599	,617	,476	,832
Q15.	23,28	43,017	,589	,501	,834
Q16.	22,82	42,974	,509	,380	,839
Q17.	22,94	42,919	,492	,304	,841
Q18.	23,53	44,186	,551	,395	,838
Q19.	22,99	45,232	,299	,160	,855
Q20.	23,12	41,922	,614	,426	,832
Q21.	22,96	42,115	,536	,408	,837

Data source: author's own construction

Reliability statistics organizational performance

Table Appendix 3. 3: Reliability statistics organizational performance

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,874	,873	8

Data source: author's own construction

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q22.	18,66	48,725	,736	,668	,847
Q23.	18,38	48,661	,708	,809	,850
Q24.	18,24	47,797	,739	,810	,846
Q25.	18,95	52,254	,589	,416	,863
Q26.	18,72	50,280	,582	,404	,864
Q27.	18,53	50,430	,645	,449	,857
Q28.	18,52	51,290	,563	,449	,866
Q29.	18,30	54,737	,491	,415	,872

Data source: author's own construction

Reliability statistics overall research model

Table Appendix 3.4: Reliability statistics overall research model

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,878	,912	34

Data source: author's own construction

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronba ch's Alpha if Item Deleted
Q1.	79,20	327,675	,545	,663	,872
Q2.	78,86	328,139	,567	,608	,872
Q3.	79,18	331,245	,471	,558	,874
Q4.	78,79	333,082	,331	,313	,876
Q5.	78,79	328,697	,534	,502	,873
Q6.	78,96	327,637	,508	,657	,873
Q7.	79,17	332,769	,465	,615	,874
Q8.	78,67	329,376	,531	,636	,873
Q9.	78,18	326,009	,565	,589	,872
Q10.	78,37	325,166	,446	,502	,874
Q11.	78,51	324,404	,613	,656	,871
Q12.	78,77	332,750	,490	,492	,874
Q13.	79,17	330,644	,531	,663	,873
Q14.	78,82	328,232	,574	,619	,872
Q15.	79,06	330,975	,503	,636	,873
Q16.	78,60	330,214	,474	,481	,874
Q17.	78,74	329,264	,467	,441	,874
Q18.	79,36	331,884	,530	,498	,873
Q19.	78,82	333,495	,360	,438	,875
Q20.	78,89	326,849	,559	,574	,872
Q21.	78,74	324,941	,581	,575	,872
Q22.	78,41	322,868	,454	,723	,873
Q23.	78,10	323,066	,431	,829	,874
Q24.	77,94	321,664	,450	,849	,873
Q25.	78,68	324,415	,457	,542	,873
Q26.	78,46	321,667	,441	,558	,874
Q27.	78,23	317,181	,585	,654	,870
Q28.	78,24	315,143	,599	,616	,870
Q29.	78,01	333,639	,293	,572	,877
Q30.	79,36	335,357	,348	,655	,876
Q31.	79,31	334,216	,358	,712	,875
Q32.	76,70	327,363	,148	,310	,890
Q33.	75,70	336,363	,114	,632	,884
Q34.	77,46	347,445	-,058	,647	,893

Data source: author's own construction

Partial Factor Analysis

Extraction partial factor analysis HRM

Databasis: V002_HRM_FA_ord.scale_all samples aggr..spv

Excluded items: Q4, Q9

Table Appendix 3.5: Extraction Partial Factor Analysis HRM

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,878
Bartlett's Test of Sphericity	Approx. Chi-Square	548,444
	df	36
	Sig.	,000

Rotated Component Matrix^a

--

a. Only one component was extracted. The solution cannot be rotated.

Data source: author's own construction

Extraction partial factor analysis organizational learning

Databasis: V002_OL_FA_ord.scale_all samples aggr..spv

Excluded items: Q10, Q16, Q17, Q19

Table Appendix 3.6: Extraction partial factor analysis organizational learning

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,859
Bartlett's Test of Sphericity	Approx. Chi-Square	428,406
	df	28
	Sig.	,000

Rotated Component Matrix^a

--

a. Only one component was extracted. The solution cannot be rotated.

Data source: author's own construction

Extraction partial factor analysis organizational performance

Databasis: V001_OP hardandsoft_FA_ord.scale_all samples aggr..spv

Excluded items: none

Table Appendix 3.7: Extraction partial factor analysis organizational performance

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4,298	53,721	53,721	4,298	53,721	53,721	3,648
2	1,131	14,135	67,856	1,131	14,135	67,856	3,351
3	,818	10,224	78,080				
4	,535	6,685	84,765				
5	,488	6,095	90,860				
6	,368	4,604	95,464				
7	,252	3,154	98,618				
8	,111	1,382	100,000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Data source: author's own construction

Hierarchical Multiple Regression Analysis

Databasis: V003_ordinal scale_databasis_factor analysis.sav

Hierarchical multiple regression ANOVA organizational learning on economic performance

Table Appendix 3.8: Hierarchical multiple regression ANOVA organizational learning on economic performance

ANOVA ^c						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9,732	3	3,244	3,375	,020 ^a
	Residual	138,410	144	,961		
	Total	148,142	147			
2	Regression	26,813	15	1,788	1,945	,024 ^b
	Residual	121,329	132	,919		
	Total	148,142	147			

Data source: author's own construction

*Hierarchical multiple regression ANOVA organizational learning on competitive capacity***Table Appendix 3.9: Hierarchical multiple regression ANOVA organizational learning on competitive capacity**

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,834	3	2,611	2,726	,046 ^a
	Residual	136,987	143	,958		
	Total	144,820	146			
2	Regression	50,898	15	3,393	4,733	,000 ^b
	Residual	93,922	131	,717		
	Total	144,820	146			

Data source: author's own construction

*Hierarchical multiple regression ANOVA HRM on economic performance***Table Appendix 3.10: Hierarchical multiple regression ANOVA HRM on economic performance**

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10,707	3	3,569	3,830	,011 ^a
	Residual	139,775	150	,932		
	Total	150,481	153			
2	Regression	14,367	12	1,197	1,240	,262 ^b
	Residual	136,114	141	,965		
	Total	150,481	153			

Data source: author's own construction

*Hierarchical multiple regression ANOVA HRM on competitive capacity***Table Appendix 3.11: Hierarchical multiple regression ANOVA HRM on competitive capacity**

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8,983	3	2,994	3,159	,027 ^a
	Residual	141,209	149	,948		
	Total	150,192	152			
2	Regression	29,367	12	2,447	2,836	,002 ^b
	Residual	120,825	140	,863		
	Total	150,192	152			

Data source: author's own construction

Level of significance multiple regression analysis economic performance for organizational learning

Table Appendix 3.12: Level of significance multiple regression analysis economic performance for organizational learning

	REGR factor score 1 for analysis 1
Sig. (1-tailed) REGR	.
Q10.	,009
Q11.	,016
Q12.	,050
Q13.	,153
Q14.	,034
Q15.	,048
Q16.	,069
Q17.	,091
Q18.	,133
Q19.	,002
Q20.	,003
Q21.	,004

Data source: author's own construction

Level of significance multiple regression analysis competitive capacity for organizational learning

Table Appendix 3.13: Level of significance multiple regression analysis competitive capacity for organizational learning

	REGR factor score 1 for
Sig. (1-tailed)	Q10. ,000
	Q11. ,000
	Q12. ,002
	Q13. ,003
	Q14. ,000
	Q15. ,012
	Q16. ,002
	Q17. ,003
	Q18. ,000
	Q19. ,002
	Q20. ,000
	Q21. ,000

Data source: author's own construction

Level of significance multiple regression analysis economic performance for HRM

Table Appendix 3.14: Level of significance multiple regression analysis economic performance for HRM

Sig. (1-tailed)	"Q1.	,088
	Q2.	,112
	Q3.	,252
	Q4.	,221
	Q5.	,109
	Q6.	,124
	Q7.	,347
	Q8.	,156
	Q9.	,090

Data source: author's own construction

Level of significance multiple regression analysis competitive capacity for HRM

Table Appendix 3.15: Level of significance multiple regression analysis competitive capacity for HRM

Sig. (1-tailed)	"Q1.	,001
	Q2.	,000
	Q3.	,002
	Q4.	,197
	Q5.	,028
	Q6.	,001
	Q7.	,004
	Q8.	,002
	Q9.	,000

Data source: author's own construction

Appendix 4: Practical Implementation and approbation

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Table Appendix 4. 1: Overview over business enterprises with implemented Apprentice-Academy

No. of represented business enterprise	Business sectors	Number of participats
1	Commerce	20
2	Industry	15
3	Crafts and Trades, Transport and Communications, Tourism and Leisure, Information and Consulting	30
4	Crafts and Trades, Commerce, Information and Consulting	21
5	Industry	15
6	Crafts and Trades	14
7	Industry, Commerce	17
8	Crafts and Trades, Industry, Commerce, Transport and Communications, Tourism and Leisure	15
9	Crafts and Trades, Commerce, Transport and Communications, Information and Consulting	20
10	Industry, Commerce	20
Business enterprises: 10		Participats: 187
Names of business enterprises and interview partners are known to the author. The business enterprises and/or interview partners chose for reason of general privacy policy to remain anonymous.		

Data source: author's own construction