



MASTER THESIS

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International Marketing
of *CAMPUS 02* University of Applied Sciences

DEVELOPMENT OF AN INSTRUMENT FOR ASSESSING AND DISPLAYING ORGANISATIONAL RESILIENCE IN FAMILY BUSINESSES

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Graz, 29.06.2018

Declaration of authenticity

I hereby certify that I have written the present thesis independently and without help from any third parties. I have not used any sources other than those which are clearly indicated and have duly provided details of the sources of both direct and indirect quotations.

The present piece of work and parts thereof have to date not been presented of this or any other examination board in the same or similar form, nor have they been published. The present version is the same as the electronic version submitted.

Graz, 29.06.2018

.....Michelle Hemmer.....

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Explanation of principle of equality

For readability purposes, gender-specific formulations have not been used in the present piece of work. It is, however, hereby expressly stated that when the masculine form is used to denote people, both sexes are being referred to.

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Zusammenfassung

Familienunternehmen tragen einen erheblichen Anteil zur Wirtschaft in der ganzen Welt bei. In Österreich sind 90% aller Unternehmen im Besitz von Familienunternehmen, wenn Einzelunternehmen miteinberechnet werden, welche rund 60% betragen. Jedoch muss jedes Familienunternehmen viele Veränderungen, Probleme oder sogar Krisen bewältigen, die durch VUCA oder das „Drei-Kreise-Modell“ verursacht werden können. Deshalb muss ein Familienunternehmen resilient sein, was bedeutet, dass es in Bezug auf bestimmte Veränderungen und Vorkommnisse widerstands- und anpassungsfähig sein muss.

Das Ziel dieser Masterarbeit ist die Bewertung und Darstellung von organisationaler Resilienz in Familienunternehmen durch die Entwicklung eines Instruments. Dadurch wird die Basis für Verbesserungsmaßnahmen bezüglich der organisationalen Resilienz in bestimmten Bereichen des Familienunternehmens gelegt. Insgesamt wurden acht Interviews mit Experten der organisationalen Resilienz und acht Interviews mit Experten von Familienunternehmen durchgeführt, um das mittels Theorie entwickelte Instrument anzupassen bzw. zu bestätigen. Außerdem wurde das angepasste Instrument vier Mal mit Geschäftsführern von Familienunternehmen getestet, um die praktische Durchführbarkeit zu bestätigen und Verbesserungsvorschläge einzuholen.

Das Instrument wurde mithilfe von Microsoft Excel entwickelt und hat die folgende Struktur, welche auch nach den Anpassungen der Experten beibehalten wurde: Gewichtung der Dimensionen und Faktoren, Bewertung der Dimensionen und Faktoren sowie Umwandlung in *Anpassungsfähigkeit* und *Widerstandsfähigkeit*.

Zuerst bestand das Instrument aus drei Dimensionen mit untergeordneten Faktoren. Im Zuge der Experteninterviews wurden die drei bestehenden Dimensionen bestätigt und weitere wurden hinzugefügt. Insgesamt wurden zwei weitere Dimensionen ausgewählt. Die folgenden Dimensionen bilden die Basis für das Instrument: *Produkt-/ Dienstleistungs-Exzellenz*, *Zuverlässigkeit von Prozessen*, *Individuelle Stärken*, *Kultur* und *Führung*. Zwischen vier und sechs Faktoren wurden den jeweiligen Kategorien untergeordnet. Die Experten haben die von ihnen gewählten Faktoren zusätzlich definiert, um ein allgemeines Verständnis zu schaffen.

Wie zuvor angeführt, besteht das Instrument aus einem Teil der Gewichtung. Die Probanden mussten die Faktoren gewichten, um Standard-Gewichte zu erhalten. Jedoch wird empfohlen, die Gewichtung erneut durchzuführen, da die Berechnung nicht proportional durchgeführt werden konnte. Dies wurde durch die individuellen Einteilungen und überschneidenden Auswahlen verursacht.

Der letzte Teil des Interviews war die Zuteilung der Faktoren zu den Fähigkeiten *Anpassungsfähigkeit* oder/ und *Widerstandsfähigkeit*. Die Ergebnisse zeigen, dass die Faktoren eher die *Anpassungsfähigkeit* (62%) fördern.

Abstract

Family businesses contribute a significant part to the economy all over the world. Overall, 90% of Austrian businesses are family businesses, if the sole traders (about 60%) are included. However, a family business has to deal with many changes, problems or even crises, which can be caused through VUCA or also through the “Three-Circle-Model”. Therefore, a family business has to be resilient, which means that it has to be resistant and adaptable regarding certain occurrences and changes.

The aim of this master thesis is the assessment and display of organisational resilience in family businesses by developing an instrument to enable further measures for the improvement of organisational resilience in certain areas of the family business. Hence, eight interviews with experts regarding organisational resilience and eight interviews with experts regarding family businesses were executed in order to adapt and confirm the theoretical developed instrument. Furthermore, the adapted instrument was tested by four CEOs of family businesses in order to confirm the practical feasibility and ask for improvements.

The theory-based instrument had the following structure, which was retained for the adapted instrument, and was developed with *Microsoft Excel*: weighting of the dimension groups and factors, rating of the dimension groups and factors as well as transformation into *adaptability* and *resistance*.

Before, it consisted of three different dimension groups and sub-ordinated factors. In the course of the expert interviews, the three existing dimension groups were confirmed and many more were added. Two additional dimension groups were selected. The following dimension groups build the basis: *product/ service excellence*, *process reliability*, *individual strengths*, *culture* and *leadership*. Between four and six factors were sub-ordinated to these categories. The experts had to define the selected factors as well in order to generate a common understanding.

As it is listed above, the instrument consists of a weighting part. The experts had to weight the factors to define fixed weights. However, it is recommended to execute the weighting again because it could not be proportional calculated, which is caused by many different classifications with overlapping choices of the experts.

The last part of the interview was the allocation of the factors to the competences *adaptability* or/ and *resistance*. The primary market research revealed that the factors rather support the *adaptability* (62%).

Table of contents

List of figures	XI
List of tables	XIII
List of abbreviations	XIII
1 Introduction	1
1.1 Initial situation	1
1.2 Challenge formulation	2
1.3 Objectives	2
1.3.1 Company objectives	2
1.3.2 Thesis objective.....	3
1.4 Research questions.....	3
1.5 Hypotheses	3
1.6 Frame of reference.....	4
2 Organisational resilience	5
2.1 Definition of organisational resilience	5
2.2 Distinction to individual resilience.....	7
2.3 Classification/ factors of organisational resilience	9
2.4 Models of organisational resilience	16
2.5 Allocations of all factors to three different dimension groups	21
2.5.1 Factors regarding product/ service excellence	22
2.5.2 Factors regarding process reliability	23
2.5.3 Factors regarding people behaviour	24
3 Family businesses.....	25
3.1 Definition of family businesses	25
3.2 Characteristics of family businesses	27
3.2.1 Structure	27
3.2.2 Three-Circle-Model.....	28
3.2.3 Entrepreneur.....	32

3.2.4	Family	33
3.2.5	Values, culture, goals	36
3.2.6	Take-over/ succession.....	37
3.2.7	Employees.....	38
3.2.8	Governance.....	38
3.2.9	Relative advantages/ disadvantages	39
4	Organisational resilience in family businesses	40
4.1	Characteristics regarding organisational resilience	40
4.2	Contribution to adaptability and resistance.....	44
4.3	Summarising representations.....	48
5	Theoretical models and methods for assessing and displaying selected criteria	50
5.1	Cost utility analysis.....	50
5.1.1	Weighting of the decision criteria	51
5.1.2	Rating of the decision criteria	52
5.1.3	Calculation of the value benefit.....	52
5.2	Rating methods	52
5.2.1	Scales of measurement.....	52
5.2.2	Rating scale.....	54
5.2.3	Scale of constant sums	55
5.2.4	Magnitude scale	55
5.2.5	Choice of a rating instrument.....	55
5.3	Display methods.....	57
5.3.1	Bar graphs	57
5.3.2	Plots	58
5.3.3	Pie charts.....	59
5.3.4	Spider Charts.....	59
5.3.5	Choice of a display method	60
6	Instrument for assessing and displaying organisational resilience	61

6.1	Assessment through the <i>cost utility analysis</i>	61
6.2	Self-assessment through a <i>rating scale</i>	63
6.3	Spider Charts	64
6.4	Transformation into <i>adaptability and resistance</i>	65
7	Research design	68
7.1	Research method.....	68
7.2	Research sample	70
7.3	Data collection.....	70
8	Primary market research	72
9	Analysis and interpretation of the results.....	75
9.1	Definitions	75
9.1.1	Analysis	75
9.1.2	Interpretation	77
9.1.3	Conclusion of the definitions.....	81
9.2	Individual selection of dimension groups and factors	82
9.2.1	Analysis	82
9.2.2	Interpretation	89
9.2.3	Conclusion of the dimension groups and factors	95
9.3	Weighting of the dimension groups and factors	97
9.3.1	Analysis	97
9.3.2	Interpretation	98
9.3.3	Conclusion of the weighting.....	99
9.4	Transformation into <i>adaptability and resistance</i>	100
9.4.1	Analysis	100
9.4.2	Interpretation	101
9.4.3	Conclusion of the transformation into the competences	101
9.5	Conclusion of the primary market research.....	102
10	Testing of the instrument	103

11	Completed instrument	105
11.1	Assessment through the <i>cost utility analysis</i>	105
11.2	Self-assessment through a <i>rating scale</i>	105
11.3	Transformation into <i>adaptability</i> and <i>resistance</i>	107
12	Testing of the hypotheses	109
13	Recommendations.....	110
13.1	For executing family businesses	110
13.2	For future researchers.....	111
14	Conclusion.....	113
	Bibliography.....	114
	Appendix	124

List of figures

Figure 1: Frame of reference (own presentation)	4
Figure 2: Model of Trigon (based on Trigon Entwicklungsberatung 2017)	17
Figure 3: Model regarding resilient indicators of Resilient Organisations (Resilient Organisations 2018)	17
Figure 4: Model of Cranfield University (Denyer 2017).....	18
Figure 5: BSI’s model for organisational resilience (Kerr no year, p. 8)	19
Figure 6: <i>Three-Circle-Model</i> (based on Simon/Wimmer/Groth 2005, p. 92)	29
Figure 7: Summarised elaborations <i>product/ service excellence</i> (own presentation)	48
Figure 8: Summarised elaborations <i>process reliability</i> (own presentation).....	48
Figure 9: Summarised elaborations <i>people behaviour</i> (own presentation).....	49
Figure 10: Example of a <i>bar graph</i> (own presentation)	58
Figure 11: Example of a <i>scatter plot</i> (own presentation)	58
Figure 12: Example of a <i>pie chart</i> (own presentation)	59
Figure 13: Example of a <i>Spider Chart</i> (own presentation).....	59
Figure 14: Representation of the weighting within the <i>cost utility analysis</i> (own presentation)	62
Figure 15: <i>Rating scale</i> of the developed instrument (own presentation)	63
Figure 16: Representation of the self-assessment through the <i>rating scale</i> (own presentation)	64
Figure 17: Representation through a <i>Spider Chart</i> of the dimension <i>product/ service excellence</i> (own presentation)	65
Figure 18: Representation of the ratio between <i>adaptability</i> and <i>resistance</i> (own presentation)	66
Figure 19: Representation of the ratio between the real and maximum value regarding <i>adaptability</i> and <i>resistance</i> (own presentation)	66
Figure 20: Overall representation of the real value of <i>adaptability</i> and <i>resistance</i> in % (own presentation)	67
Figure 21: Contents of the <i>qualitative content analysis</i> (based on Naderer 2011, p. 418)	74
Figure 22: Describing factors of organisational resilience (own presentation).....	75
Figure 23: Two suggestions for merging factors (own presentation)	76

Figure 24: Number of indications regarding each dimension group (own presentation)	83
Figure 25: Dimension groups and factors of the final instrument (own presentation)	96
Figure 26: Distribution of the weights of the dimension groups in general (own presentation)	99
Figure 27: Overall percentages regarding the allocations to <i>adaptability</i> and <i>resistance</i> (own presentation)	101
Figure 28: Final example of the assessment through the <i>cost utility analysis</i> (own presentation)	105
Figure 29: <i>Rating scale</i> of the completed instrument (own presentation)	106
Figure 30: Final example of the self-assessment through the <i>rating scale</i> (own presentation)	107
Figure 31: Additional representation of the ratio between the real and maximum value regarding <i>adaptability</i> (own presentation)	108
Figure 32: Additional representation of the ratio between the real and maximum value regarding <i>resistance</i> (own presentation)	108

List of tables

Table 1: Classification of individual resilience (cf. Reivich/Shatté 2002, p. 65, 95, 123, 145, 168, 186; Mourlane 2017, p. 45)	8
Table 2: Allocation of factors to <i>product/ service excellence</i> (own presentation) .	22
Table 3: Allocation of factors to <i>process reliability</i> (own presentation)	23
Table 4: Allocation of factors to <i>people behaviour</i> (own presentation)	24
Table 5: Comparison of the system <i>family</i> and the system <i>business</i> (based on Mühlebach 2004, p. 18).....	28
Table 6: Advantages and disadvantages of family businesses (based on Baumgartner 2009, p. 32f.).....	39
Table 7: Elaborations regarding organisational resilience in family businesses (own presentation).....	47
Table 8: Empirical relevance of scales of measurement (based on Raab-Steiner/Benesch 2015, p. 33).....	54
Table 9: Figurative representation of the chosen rating instrument (own presentation)	55
Table 10: Example of a rating scale (based on Raab-Steiner/Benesch 2015, p. 59)	56
Table 11: Figurative representation of the chosen display instrument (own presentation)	60
Table 12: Statistical data experts (own presentation).....	72
Table 13: Statistical facts of the executing family businesses (own presentation)	103

List of abbreviations

VUCA	=	Volatility, uncertainty, complexity, ambiguity
SME	=	Small and medium-sized enterprises

1 Introduction

This master thesis deals with organisational resilience in family businesses. Therefore, an instrument to capture and represent organisational resilience within a family business is developed. The structure of the instrument is primarily based on the literature of the theoretical part. Afterwards this structure is confirmed or rather changed due to the results of the qualitative research and testing of the instrument within the empirical part.

1.1 Initial situation

In general, family businesses contribute a significant part to the economy all over the world. In Austria about 455,000 family businesses, which are 90%, are family businesses. This figure includes the sole traders as well. However, if they are excluded, still 30%, which are about 150,000 companies, are family businesses. Due to their turnover of around 616 billion Euros throughout Austria, which is calculated for the 30% and conduces 86% to the total turnover, and their continual growth they are considerable for the sustainable economy of Austria (cf. Duque 19.10.2017).

However, lots of changing phenomena exist, which affect every business, in this case family business. Nowadays, these changes are called “VUCA”, which stands for volatility, uncertainty, complexity and ambiguity (cf. Starecek 2013, p. 152). These four drivers strongly impact the whole environment of a family business. Volatility means that everything is changing very fast and therefore many problems and turbulences are caused through digitalisation or global competition, for example. A business has to adapt itself constantly. The term uncertainty describes the unpredictability, which causes a lack of security and a lack of future assumptions even through analysing the past. Complexity stands for mixed issues, various forces, influencing factors etc. and that provokes a reduced decision-making ability (cf. Chadha 2017, p. 14 - 15; Webb 2016, p. 10 - 11). “Ambiguity is about the haziness of reality and the mixed meanings of various conditions and circumstances” (Webb 2016, p. 11), which can lead to confusion.

Therefore, it is indispensable for every family business to deal and associate with a VUCA world. This means, that especially nowadays family businesses have to focus on the external as well as internal environment to avoid periods without effective strategies (cf. Free 2009, p. 14; Starecek 2013, p. 152).

Furthermore, the interaction of the three complex systems of a family business, which is called “Three-Circle-Model” and includes family, business and ownership, can cause additional problems or conflicts and this can affect the success and sustainability (cf. Burggraaf/Flören/Kunst 2008, p. 302).

In order to simplify the execution with crises or rather to deal with VUCA, a family business has to be resilient, which means that it has to be resistant and adaptable regarding certain occurrences and changes (cf. Danner-Schröder/Geiger 2016, p. 201).

1.2 Challenge formulation

In general, the challenge of this master thesis is to assess and display organisational resilience in family businesses. Due to that, the degree of resistance and adaption capabilities in certain areas can be enabled and the sustainable as well as successful future of a family business can be supported.

This means in detail, that an instrument to assess and display organisational resilience in family businesses has to be elaborated. In the course of that, useful dimensions have to be identified, which are classified into adequate factors to support the measurability particularly of organisational resilience within a family business. As a matter of fact, an instrument with the right dimensions and factors for the assessment and display of organisational resilience is required. The challenge is to elaborate an instrument including a self-assessment as well as a rating and display method.

1.3 Objectives

1.3.1 Company objectives

The main objective for CAMPUS 02 is the development of models and the use of associated instruments and processes to strengthen the resilience of Austrian family businesses.

Moreover, the objectives comprise the usage of generated knowledge from future master theses through

- Integration into teaching methods
- Commercialisation for PR purposes at CAMPUS 02
- Utilisation in publications and
- Possibly as entrance for collaborations with companies.

1.3.2 Thesis objective

The main objective of this master thesis is the assessment and display of organisational resilience in family businesses by developing an instrument to enable further measures for the improvement of organisational resilience in certain areas of the family business.

1.4 Research questions

Subsequent the main research question of this master thesis is headed:

- How can organisational resilience in family businesses be systematically captured and represented?

The following sub-questions support the answering of the main research question, which is mentioned above:

- What does organisational resilience mean?
- What are the influencing factors of organisational resilience in family businesses?

1.5 Hypotheses

The following hypotheses are elaborated for this master thesis:

H0: The elaborated dimensions are suited to support the visualisation of organisational resilience.

H1: The factors of each dimension are allocated to the right dimension.

H2: The chosen factors for the instrument are the most appropriate to support the assessment and display of organisational resilience.

1.6 Frame of reference

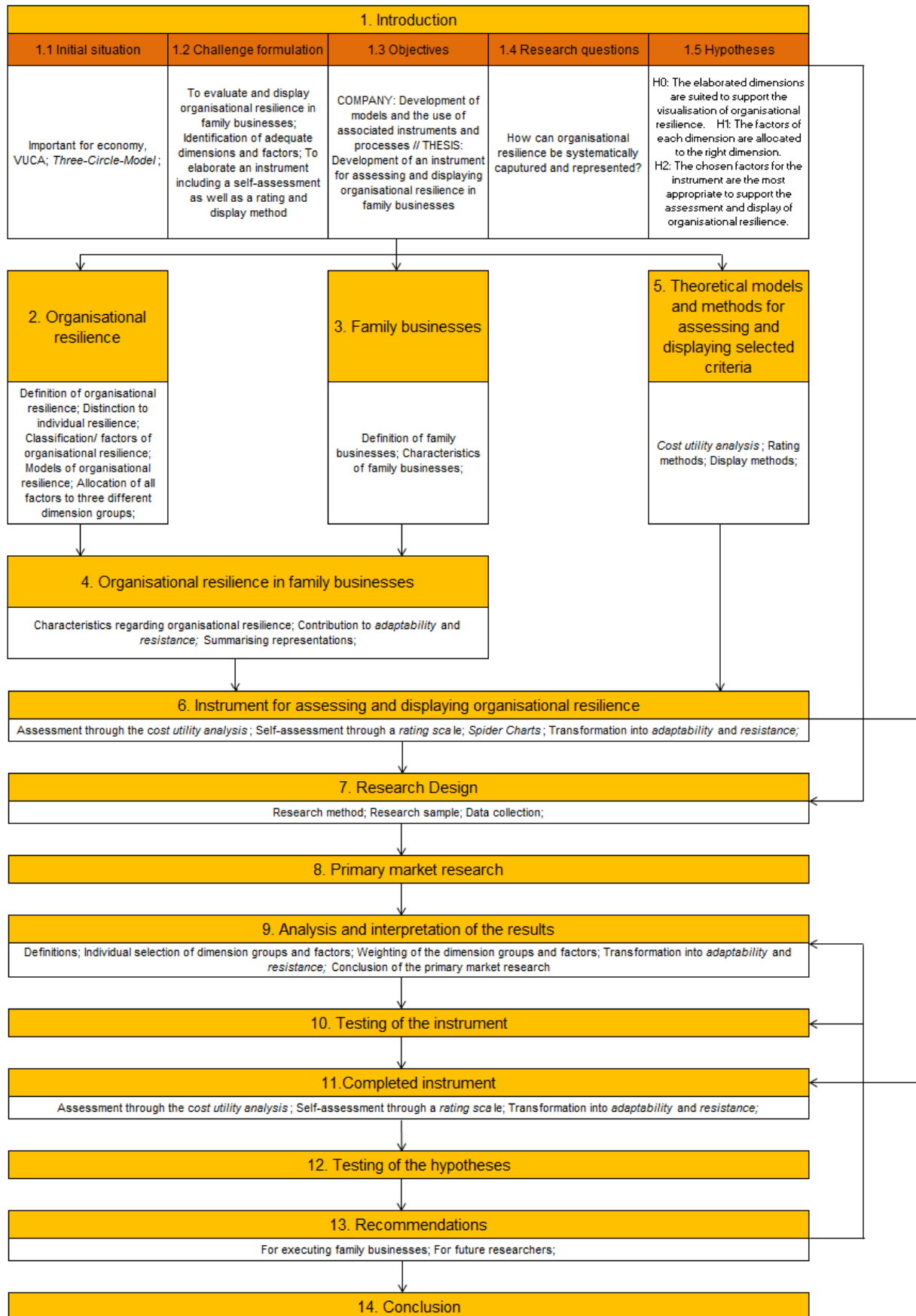


Figure 1: Frame of reference (own presentation)

2 Organisational resilience

At the beginning of this chapter, the term organisational resilience is described. Afterwards individual resilience is defined as well in order to make a distinction. Furthermore, different classifications including various factors regarding organisational resilience are elaborated to detect important factors for the instrument. The next sub-chapter consists of four different models, which were developed by different institutes to describe and calculate organisational resilience. One model is chosen to build the basis for the factors. At the end of this chapter, the elaborated factors are allocated to the different dimensions within the chosen model to build the foundation for the following chapters.

Initially, the term resilience was used in materials management and control. It means that a material is able to get into its original form after being changed into another form (cf. Kaz 2016, p. 44). Nowadays, the term resilience is widely used in two different areas: individual and organisational resilience.

2.1 Definition of organisational resilience

The following detailed definition regarding organisational resilience, which is based on BSI Group, is used as the general definition for this master thesis:

“Organizational Resilience is the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to survive and prosper. It reaches beyond risk management towards a more holistic view of business health and success. A resilient organization is one that not merely survives over the long term, but also flourishes - passing the test of time. Organizational Resilience is a strategic imperative for an organization to prosper in today’s dynamic, interconnected world. It is not a one-off exercise, but achieved over time and for the long-term. Mastering Organizational Resilience requires the adoption of excellent habits and best practice to deliver business improvement by building competence and capability across all aspects of an organization. This allows leaders to take measured risks with confidence, making the most of opportunities that present themselves” (BSI Group no year a).

In addition, Ms Fiorella Iannuzzelli from PricewaterhouseCoopers describes organisational resilience within the statement *“Resilience is about getting ahead of change so that you can survive and thrive.”* (The Economist Intelligence Unit 2015, p. 2).

A resilient organisation can be described as the following: *“A resilient organization is adaptive, agile, robust and competitive – harnessing experience and embracing opportunity to pass the test of time.”* (Kerr no year, p. 2).

Moreover, a resilient organisation is capable of the following aspects:

- Development of intelligent supply-chain structures, which can flexibly react to supply and demand changes
- Possession of a successful business culture, which motivates employees and faces challenges
- High-risk collaboration with trade partners to enable quick penetration into markets as well as launching of products before competitors do
- Cooperative patterns of relationships
- Creation of benefits through certain situations, which can have a negative influence too (cf. Sheffi 2006, p. 289)

Many authors generally divide organisational resilience into adaptability and/ or resistance (cf. Fisch 2013, p. 9 & 16; Heller/Elbe/Linsenmann 2012, p. 214; Hoffmann 2016, p. 1). Therefore, these two terms are shortly described:

- **Adaptability**
The ability of learning, which means that a business is open for changes and constantly evolves, is required for adaptability. The ability of adaption describes businesses, which are capable of permanently adapting themselves internally regarding external changes through the environment, like specific labour practices (cf. Kasper/Schmidt 2015, p. 272; Sackmann 2017, p. 298).
- **Resistance**
A resistant business is able to stand serious challenges and benefit from this experience (cf. Fisch 2013, p. 9). Synonyms for resistance are: stability, robustness or consistency (cf. Duden no year).

Mr Denyer from Cranfield University also describes within an interview that a business has to be both – flexible as well as consistent or rather adaptable and resistant, which indicates paradoxical thinking, in order to have survive and thrive (cf. BSI Group 2017b).

2.2 Distinction to individual resilience

The characteristics of employees also contribute a share to the resilience of a business. Characteristics are in this case skills and abilities, emotions, behaviours as well as self-regulation processes. The following examples support the resilience of an employee, which is allocated to individual resilience, and in the course of that, the resilience of the organisation: intelligence, self-efficacy, self-discipline, sociality, emotional stability, empathy, eagerness to experiment, creativity and cognitive flexibility. Moreover, the named characteristics influence the structure of systems or rather sub-systems of an organisation, like teams and tasks (cf. Van der Vegt/Essens/Wahlström/George 2015, p. 973).

The paragraph above illustrates the existing connection between individual and organisational resilience. Organisational resilience requires the resilience of leaders and employees, which is allocated to individual resilience (cf. Högl/Weiß 2018, p. 1). However, individual resilience is delimited because it is no subject of this master thesis. Nevertheless, it is subsequently described in order to be able to make a distinction between organisational and individual resilience.

Lots of explanations and studies for individual resilience exist. Many people did research in this area and it is getting, especially these days, more and more important and known.

Individual resilience defines the resistance and adaption capabilities of a person in a challenging environment or in new situations. This means in more detail, that a resilient person is able to stand pressure and stress and is capable of certain emotions, like fun, interest or hope. Other essential competences, like being positive for new things, staying calm during changes etc., forward transformation and avoid stress. In nature, a sponge could be used as an example because if it is full of water, it is able to get its form back afterwards. A positive aspect is that individual resilience can be enhanced through training (cf. Kaz 2016, p. 44; cf. Danner-Schröder/Geiger 2016, p. 202).

The following seven columns on the left side of the table were investigated by Ms Reivich and Mr Shatté to define individual resilience (cf. Reivich/Shatté 2002, p. 65, 95, 123, 145, 168, 186). However, these phrases are hard to understand without an additional definition. Therefore, simplified phrases on the right side of the table are listed and have been elaborated by Mr Murlane (cf. Murlane 2017, p. 45):

Reivich, Shatté	Murlane
1 Learning your ABCs	1 Controlling of emotions
2 Avoiding thinking traps	2 Control of impulses
3 Detecting icebergs	3 Causal analysis
4 Challenging beliefs	4 Realistic optimism
5 Putting it in perspective	5 Persuasion of self-efficacy
6 Calming and focusing	6 Goal orientation
7 Real-time resilience	7 Empathy

Table 1: Classification of individual resilience (cf. Reivich/Shatté 2002, p. 65, 95, 123, 145, 168, 186; Murlane 2017, p. 45)

Summarised, it can be said, that individual resilience describes humans, who are able to have a good and healthy life even if they grew up under risky and/ or catastrophic conditions (cf. Hoffmann 2016, p. 4).

Consideration should also be given to the resilience of humans, who are executing a leading position. Mr Murlane conducted a study with partners, which is about the seven columns of individual resilience, like it is mentioned above. In general, leading persons assess themselves as significantly more resilient than people without a leading position. However, this was just a self-assessment and it has not been proved until today. Nevertheless, the study shows that leaders are capable of trusting their employees and consultants, if essential documents are analysed and prepared by them (cf. Murlane 2015, p. 131 - 132).

The ability of resilience permits three important and supporting aspects for leaders, which are mentioned below:

- Managing pressure consequently and composed
- Having the ability of coping negative emotions regarding uncertainty or reverses
- Harnessing scarce resources in an effective and efficient way (cf. Murlane 2015, p. 133)

2.3 Classification/ factors of organisational resilience

Various classifications or rather contributing factors of organisational resilience exist. Therefore, a couple of categorisations are mentioned in this chapter. Due to these different classifications the foundations for chapter 2.5 are laid and furthermore, a good overview of organisational resilience can be conveyed.

The research on the different classifications of organisational resilience is reasoned by the required factors for the instrument.

Mr Weick and Ms Sutcliffe define a business as organisational resilient, when it is able to anticipate, to survive crises without real damages and to develop strategies for avoiding crises. They have elaborated five abilities, which support organisational resilience:

1. Focusing on mistakes

Mistakes should actively be addressed and detected, which means, that mistakes are desired.

2. Avoiding simplifications

The dealing with simplification does not support the business for building new perspectives. A business is able to benefit of every situation, when it focuses on more complex imaginations.

3. Sensibility regarding operational processes

Resilient organisations are capable of monitoring their own operations very precisely as well as of identifying and handling aberrations in an early stage. This is due to the close connection between the sensibility for relationships and sensibility for operational processes.

4. Striving for flexibility

This means, that a business should aim flexibility and resistance in order to react to unexpected changes. Flexibility is defined by the ability of recognising mistakes very early and the ability of improvisations.

5. Respecting skilled knowledge and competences

The last ability implies that the decision-making-process is delegated to the responsible expert independently from the hierarchical position (cf. Weick/Sutcliffe 2010, p. 10 - 18).

The second definition or rather classification of organisational resilience, which is mentioned within this master thesis, is from Ms Danner-Schröder and Mr Geiger. With reference to their study, they have elaborated four essential abilities, which have central relevance:

1. Ability to build a structure very fast in turbulent environments

Especially, in very unpredictable and complex environments it is important to build own structures. This means, building known patterns and frames through routines within a turbulent environment in order to enable a familiar environment. Due to that, the business and its employees are able to operate and focus on the issue.

2. Ability of reducing complexity very fast

Reducing complexity means in this case, to prioritise through focusing on the most relevant aspects and excluding disruptive impacts. Thus, external factors of the environment are not able to distract the situation. The complexity is reduced by obeying defined action steps as well. Based on that, the business is able of keeping overview and gaining orientation.

3. Ability of flexible using of routines

Trained and known individual routines should be assembled appropriately to a situation. A single routine is accomplished in the same way every time, solely the composition varies. A prediction about the application and/ or order of single routines regarding an issue is previously not possible. Therefore, a business should be able to assemble trained and known individual routines regarding certain situations to enable the dealing with unexpected challenges.

4. Ability to learn

Continual learning before and after handling a problem, crisis or change is prerequisite for further issues. Common training or discussions support the learning of the involved employees as well as the knowledge and trust of each other. Therefore, similar mistakes can be avoided (cf. Danner-Schröder/Geiger 2016, p. 204 - 206).

A further classification originates from Mr Reeves, Mr Levin and Mr Ueda, who separate the classification into structural and leading parts. Their classification, which consists of six principles, is based on how to make complex, adaptive systems more resistant:

1. Heterogeneity (structural)

A business has to be heterogeneous regarding employees, ideas as well as intentions or purposes. Employees should be hired with reference to different personalities, backgrounds, education and experiences. However, employees hardly question the business and its logic, take risk or develop new ideas. Therefore, the leading level should change cultural parts in the business and create an environment, in which risk and innovation is highly accepted.

2. Modularity (structural)

A complex, adaptive system, which is based on modularity, consists of several parts, which are loosely connected to each other. As a consequence, crises or shocks are hardly transferred from one to the other part and enables robustness. However, this assumes the willingness to compromise due to the modularity, strong connections cannot be built.

3. Redundancy (structural)

The advantage of this principle is that different parts are capable of assuming the same role. For example, part B can undertake the function of part A, if it does not work and has to be replaced for a certain situation.

4. Planning (leading)

As it is already mentioned, the environment of a business is unpredictable. Therefore, it is indispensable to continuously execute research and to analyse the environment (competitors, trends, technologies, customers, suppliers etc), to gather hints and changes and to develop realistic scenarios. Especially, the technological area is highly innovative and changing very fast. Hence, businesses have to track competitors as well as businesses of other industries in order to minimise the surprise of successful innovations. Businesses have to deal with these innovations in an appropriate way, like developing new innovations, buying the successful ones or defend themselves with certain measures.

5. Adjustment (leading)

The ability of leading a business and simultaneously inventing it in an innovative way demands effective feedback control loops. Moreover, this ability is a condition for a VUCA world. A feedback control loop means that a system recognises and uses changes in its environment to strengthen desired characteristics. However, if a feedback control loop exists within a company, the cycle should not be too short because that could lead to instability.

6. Trust (leading)

A stable, complex adaptive system requires trust because this principle enables the establishment of rules of reciprocal treatment and the execution of agreements. It is also required that a manager ensures the creation of added value within the system to meet the needs of different interests and groups (cf. Reeves/Levin/Ueda 2016, p. 38 - 46).

The following definition is based on the categorisation of Ms Välikangas, who separated organisational resilience into five factors:

1. Diversity

This term means that the increase of the number of different perspectives, opinions as well as views within the business to submit and enhance the ability of adapting to changes.

2. Ingenuity

Due to the VUCA world and the economic crisis companies do rather not invest into additional resources. Therefore, a contrasting approach for organisational resilience is used: to forward creativity through scarcity of resources. The scarcity drives the ingenuity for innovation because missing resources are responsible for new and necessary ideas or rather creativity.

3. Robustness

The prerequisite for robustness is flexibility, which is described by staying active instead of freezing while turbulences arise. The following four traps reduce robustness of a business: a) cognitive trap: being prepared for changes and their analysis as well as adaptations to them; b) strategic trap: additional strategic alternatives are necessary; c) political trap: daring to take risk regarding certain investments; d) ideological trap: avoiding the optimisation of potential irrelevant business models;

4. Anticipation

A business should be capable of detecting threats or potential crises before they arise. Therefore, a company has to listen and to recognise quiet signals, which announce these decisive changes. Novel aspects should be analysed and elaborated, for example through applying the scenario technique, which means to have different perspectives onto the business regarding a certain situation.

5. Constancy

The culture of a resilient organisation signifies persistency, toughness and capacity for suffering. Such an organisation inclusive its parts, like employees, are able to stand lots of difficult situations, crises and so on (cf. Välikangas 2010, p. 92f.).

Another classification by Ms Heller, Mr Elbe and Ms Linsenmann is based on seven factors and is headed subsequently:

1. Optimism

In this case, it describes the basic attitude of the employees. The positive attitude towards the company and the trust into a positive future are essential.

2. Acceptance

The term acceptance defines the dealing of the company with success, loss or diverse conditions and a changing environment.

3. Goal- and solution-orientation

The approach for solving problems or focusing on goals depends on the organisation, its culture or rather strategy and leadership. In general, it relies on the activity level for dealing with projects, decisions and changes.

4. Orientation to chances and self-efficacy

It is the active influence into decisions, projects and strategies. Furthermore, it describes the formation of decision processes as well as strategies and the assessment of conditions regarding the affected situation.

5. Responsibility

It is about the awareness of a clear structure and rules regarding responsible areas and tasks.

6. Network-orientation

On the one hand it defines the (social) network of a company and on the other hand the searching for internal and external support.

7. Future orientation

It is about the anticipation and proactive structuring of the future and in the course of that, about the strategic positioning of a business (cf. Heller/Elbe/Linsenmann 2012, p. 221 - 225).

The following definition is derived from the seven individual columns after Ms Reivich and Mr Shatté, as it is mentioned in chapter 2.2. Mr Beyer and Mr Haller developed seven columns regarding organisational resilience, which describe the approach, attitude and orientation, in which businesses differ concerning long-term survival capability. However, the effectiveness of these columns assumes organisational structure, appropriate facilities and professionalism regarding dealing with the company's processes:

1. Accepting the situation

Resilient organisations are able to handle ambiguity concerning certain angles, to synchronise themselves, to occupy and monitor varying values as basis for evaluating the situation, to confide done assessments, to bear discrepancies within the organisation and to express worries and use them as basis for problem solving.

2. Future orientation/ trust

The positive basic attitude is prerequisite for a resilient business. People, who work within the company, trust into their diversity, their ability to create, their self-initiative and the network within society. These numerations are critical success factors, which support the successful dealing with crises and changes in the future.

3. Solution orientation (problem solving orientation)

A resilient business is capable of elaborating holistic solutions inclusive consequences. These solution approaches include customers and suppliers.

4. Activity orientation

Actions for activity orientation of resilient businesses are: orienting for implementation, proactivity, supporting the activity orientation of members, searching as well as finding upcoming challenges within the own responsible area and elaborating holistic solutions.

5. Self-responsibility

This term defines organisations, which act pre-emptive, search in advance for possible defective developments and crises, consider defective developments, take over responsibility and avoid searching for the guilty one(s).

6. Ability to develop contacts

Resilient businesses are capable of developing understanding for opposing interests, expressing self-initiative, supporting others and overcoming borders of departments, certain areas or even of the business.

7. Ability to design (future)

This column describes organisations, which consistently develop future visions on a common basis concerning values, act pre-emptive and take the initiative in order to be able to develop constructive ideas for the future within a certain time even if it entails serious changes (cf. Beyer/Haller 2016, p. 83 - 87).

The Economist Intelligence Unit conducted a study with experts or rather CEOs of companies regarding creating resilient organisations. In the course of that, these experts identified the following characteristics:

1. Proactive approach

A resilient organisation has to take the initiative and should not wait until another business gains the success by satisfying the existing needs of the customers through innovation.

2. Dynamic leadership

Ms Yee boils it down to the essence via the statement *“You need an instigator with the power to evolve the organisation”* (The Economist Intelligence Unit 2015, p. 15).

3. Responsiveness to change

Especially, through the VUCA world, everything is constantly changing very fast and in an unpredictable way. Therefore, it is indispensable for a business to adapt itself all the time.

4. Corporate culture

Every employee should be aware of the degree as well as type regarding his contribution to the company's success.

5. Keep being focused

As Mr Starecek either said, a business should avoid getting lost by doing and wanting too many things at the same time (cf. Starecek 2013, p. 153).

6. Long-term view

"You have to constantly look forward and know what to do when the next big thing occurs" (The Economist Intelligence Unit 2015, p. 15) was stated by Mr Brock (cf. The Economist Intelligence Unit 2015, p. 15).

2.4 Models of organisational resilience

Within this sub-chapter four models, which were elaborated and are applied by different institutes, are described. The reason for mentioning and explaining these models within this sub-chapter is that one of them is chosen and used as the basis for the classification of all factors in chapter 2.5.

"Trigon Entwicklungsberatung" elaborated a model, which is based on four dimensions. They describe resilience as the ability to cope with crises through having access to existing resources and to benefit from such an event (cf. Trigon Entwicklungsberatung 2017). Their concept is based on four dimensions:

- Me (as a leader): How can I strengthen my personal resilience?
- Team: How can we as a team use our resources and apply it solution-oriented?
- Organisation inside: What is required for the organisation in order to act lively and cautious?
- Organisation outside: How can the organisation use changes in its environment? (cf. Preissegger/Huemer no year)

Subsequently, the model, which consists of four dimension and four factors each is graphically represented (cf. Trigon Entwicklungsberatung 2017):

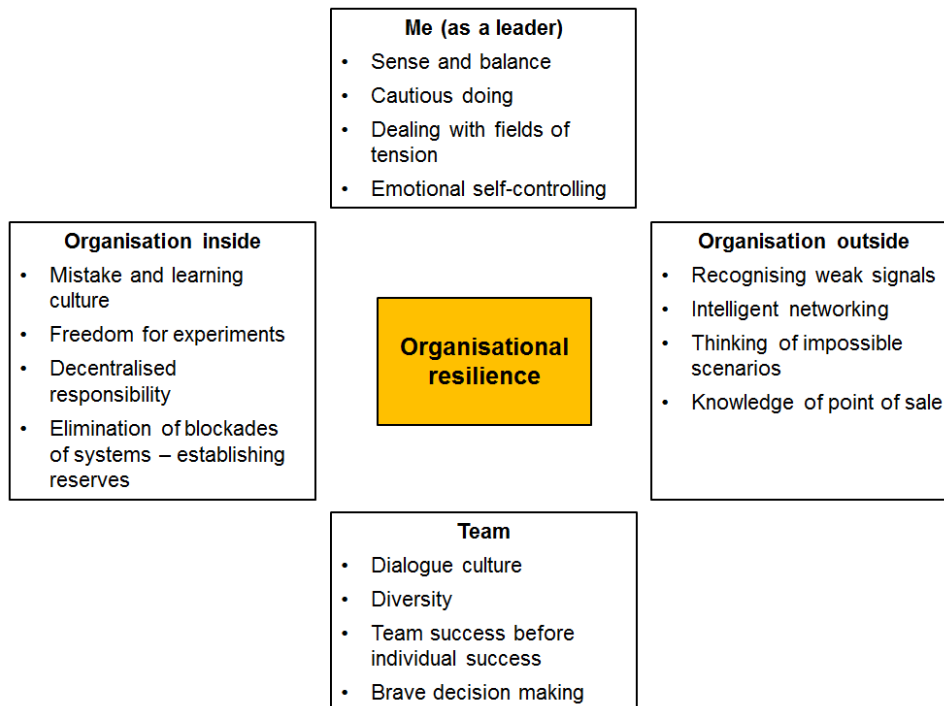


Figure 2: Model of Trigon (based on Trigon Entwicklungsberatung 2017)

The next model is based on elaborations of “Resilient Organizations”. The figure below gives an overview of their development (cf. Resilient Organisations 2018):



Figure 3: Model regarding resilient indicators of Resilient Organisations (Resilient Organisations 2018)

The figure shows, that their model consists of three interdependent attributes and 13 indicators of resilience. The indicators are allocated as follows:

1. Leadership and culture
 - a. Leadership
 - b. Staff engagement
 - c. Situation awareness
 - d. Decision making
 - e. Innovation and creativity
2. Network and relationships
 - a. Effective partnerships
 - b. Internal resources
 - c. Leveraging knowledge
 - d. Breaking silos
3. Change ready
 - a. Unity of purpose
 - b. Planning strategies
 - c. Stress testing plans
 - d. Proactive posture (cf. Resilient Organisations 2018)

“Cranfield University” developed a model under the direction of Mr Denyer. Before the model is explained, it is subsequently headed (cf. Denyer 2017):

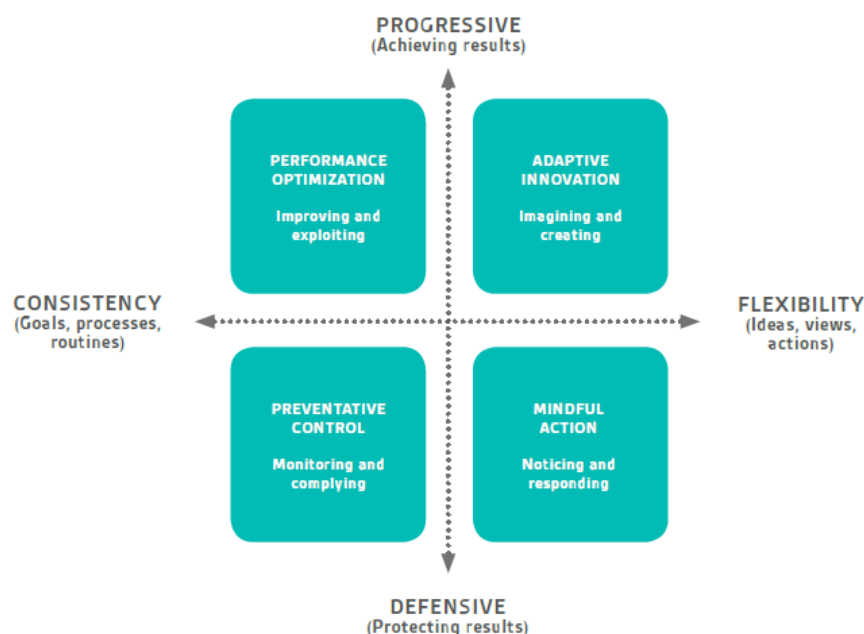


Figure 4: Model of Cranfield University (Denyer 2017)

The model is based on two core drivers and two core approaches. One driver is *defensive*, which means to stop bad occurrences. The opposite is *progressive*, which stands for making things happen. With reference to the approaches, they are divided into *consistency* and *flexibility* (cf. BSI Group 2017b). Due to that, four quadrants emerge as it is illustrated within the figure. Mr Denyer reveals that various businesses have different approaches in order to achieve organisational resilience. He also states that the approaches have to be connected as well as applied with reference to different situations. However, he remarks *“The challenge for organisations is that there are tensions between the different quadrants...”* (BSI Group 2017b).

Following, the last model for organisational resilience of “BSI Group” is represented. Mr Kerr, the CEO, intensively deals with the topic organisational resilience and is definitely an expert (cf. Kerr no year, p. 8):



Figure 5: BSI’s model for organisational resilience (Kerr no year, p. 8)

Three main requirements are defined as necessary:

- *Product excellence*
“Truly resilient businesses innovate, creating new products and markets, always staying one step ahead of competitors” (Kerr no year, p. 8).
- *Process reliability*
“Reliable processes, delivered consistently over time, are fundamental to achieving and maintaining high customer satisfaction” (Kerr no year, p. 9).

- *People behaviour*

“Organisations that have passed the test of time have achieved alignment between customer expectations and employee belief” (Kerr no year, p. 9).

Additionally, three important areas have been identified for achieving organisational resilience within a business:

- Operational resilience

It is the comprehension of a business' operations and environments.

- Supply chain resilience

A business has to minimise the risk via the whole supply chain in order to avoid disruptions with serious impacts.

- Information resilience

It is the skill of handling the security of information while providing necessary information for stakeholders (cf. Kerr no year, p. 11 - 13).

Furthermore, three benefits out of being organisational resilient have been elaborated:

- Strategic adaptability

It is the dealing with changing internal and external aspects in an appropriate way, which sometimes affects and changes the whole strategy.

- Agile leadership

Quick reaction to opportunity as well as threat and active risk-taking describe agile leadership.

- Robust governance

Governance pertains to the whole value chain. Therefore, it has to be robust. This means the responsibility over all structures and hierarchies on the basis of a trustful culture, transparency and innovation (cf. Kerr no year, p. 14f.).

The model of BSI Group is chosen as a basis for this master thesis. This can be reasoned by the following three points:

- The model is described in detail, which supports the comprehension of the system behind.
- It is the most suitable with reference to the existing factors.

- Additionally, the choice of the dimension groups can be confirmed by other sources as well. The reliability and security of processes is stated as an important part (cf. Linnenluecke 2018, p. 5). Furthermore, the importance of individuals is indispensable for achieving organisational resilience (cf. Soucek/Pauls/Schlett 2018, p. 10).

2.5 Allocations of all factors to three different dimension groups

As it is mentioned at the beginning of chapter 2.3 all classifications or rather factors are mentioned again within this sub-chapter. Moreover, factors from additional sources are added and used as well (cf. BSI Group 2017a, p. 5 - 6; Koller/Kostelac/Köck/Modl/Schachl/Schröder 2017; The Economist Intelligence Unit 2015, p. 7). Double or multiple indications are consolidated to one factor, just mentioned once and are headed at the beginning because of the importance.

Subsequently, every factor is allocated to one out of three requirements for organisational resilience: *product/ service excellence*, *process reliability* and *people behaviour*. As it is already described in chapter 2.4, this additional classification is based on the elaborations of BSI Group and is chosen as foundation for the allocations.

The allocations of this sub-chapter to the dimension groups serve as a basis for the following chapters. The short descriptions of each factor are headed in chapter 2 of the appendix.

2.5.1 Factors regarding product/ service excellence

Resilient businesses are capable of serving the market or rather their target group in the right way, adapting or creating new products to meet the customers' needs and differentiating themselves from their competitors (cf. Kerr no year, p. 8).

Product/ service excellence	
Really important	Important
Anticipation (three mentions)	Understanding customer needs
Innovation (two mentions)	Evaluation and analysis of the gathered information
Diversity (two mentions)	Information gathering on political, economic and industry trends in all markets
Chances orientation (two mentions)	Reputation risk

Table 2: Allocation of factors to *product/ service excellence* (own presentation)

2.5.2 Factors regarding process reliability

A high customer satisfaction can be achieved by reliable processes, which are constantly delivered. The quality, environmental handling, security, health and safety etc. have to be consistent in order to accomplish reliability (cf. Kerr no year, p. 9).

Process reliability	
Really important	Important
Goal- and solution-orientation (five mentions)	Information security systems
Supply chain (two mentions)	Operational processes to ensure quality control of products and services
Governance (two mentions)	Operational process to ensure health and safety
Business continuity (two mentions)	Operational process to manage environmental impact
	Focusing on mistakes
	Financial aspects
	Resource management
	Ability to build a structure very fast in turbulent environments
	Modularity
	Redundancy
	Information- and knowledge-management

Table 3: Allocation of factors to *process reliability* (own presentation)

2.5.3 Factors regarding people behaviour

It is required to acquire an alignment between customer expectations and employee beliefs. Due to that, the contact with the customer and his emotional connection to the business is very important (cf. Kerr no year, p. 9f.).

People behaviour	
Really important	Important
Future orientation (seven mentions)	Ability of flexible using of routines
Network-orientation (four mentions)	Ability to learn
Self-responsibility (three mentions)	Optimism
Acceptance (three mentions)	Activity orientation
Dynamic leadership (two mentions)	Non-commercial engagement
Corporate culture (two mentions)	Awareness, training and audit
	Orientation
	Employee identification with the business vision
	Cooperating
	Well-trained and appropriately skilled staff
	Respecting skilled knowledge and competences
	Trust
	Ingenuity
	Guidance

Table 4: Allocation of factors to *people behaviour* (own presentation)

3 Family businesses

This chapter consists of the definition as well as characteristics of family businesses. The central topic of the characteristics regarding family businesses is the *Three-Circle-Model*, which builds the basis. Furthermore, these characteristics contribute in a positive or negative way to organisational resilience. Due to that, the basis for the following chapter, which shows the contribution of each characteristic to organisational resilience, can be provided.

The following sub-chapters are elaborated within this chapter:

1. Definition of family businesses
2. Characteristics of family businesses
 - 2.1 Structure
 - 2.2 *Three-Circle-Model*
 - 2.3 Entrepreneur
 - 2.4 Family
 - 2.5 Employees
 - 2.6 Values, culture, goals
 - 2.7 Take-over/ succession
 - 2.8 Governance
 - 2.9 Relative advantages and disadvantages

3.1 Definition of family businesses

Lots of definitions for family businesses exist. However, the definitions vary between authors due to distinct perspectives. Therefore, a coherent definition does not exist. Therefore, some different definitions are headed below.

A very general definition conveys that the following criteria have to be clarified:

- The property relations have to be cleared.
- The degree of family influence into the management of the business has to be obvious.

- The actual owner should have an intrinsic desire for the successful and continued existence of the family business through a follower, who is part of the family (cf. Baumgartner 2009, p. 20).

Another definition includes requirements for a family business, which say, that up to two natural persons or their family members should keep at least 50% share of the business and that these natural persons should be part of the management (cf. IfM Bonn no year).

Sabine B. Klein defines a family business as a business, in which the family has a significant influence. Therefore, a dominant influence regarding one of the factors equity, supervision or management is required. Additionally, a significant influence means in this case, that an appropriate influence of one factor balances a lower influence of another factor. Moreover, a necessary condition is the involvement of the family on the equity (cf. Klein 2010, p. 18). Besides, Sabine B. Klein has developed in collaboration with other authors the F-PEC Scale, which measures the intensity of family influence on the business. It is based on three influencing variables: **F**amily influence through **P**ower, **E**xperience and **C**ulture. *Power* stands for the direct or indirect influence of the family through ownership, governance and/ or management. The dimension *experience* describes the increasing experience through every generation change. Due to that fact, mistakes can be reduced. The factor *culture* contains in general the value system of a family as well as the commitment of family in the business (cf. Klein 2010, p. 14 - 15).

For this master thesis, the definition by the research department of FH Campus 02 and of the foundation of family businesses is chosen as basis and reads as follows (cf. Wünschl 14.12.2015):

A business of arbitrary size is defined as a family business, if:

1. The majority (>50%) of the decision rights is in possession of (a) natural person(s), who has/ have founded the business or rather (a) natural person(s), who has/ have acquired the stock of the business or the decision rights are in possession of the marriage partner, parents, child or the direct heirs of the child.

2. The majority (>50%) of the decision rights exist direct or indirect.
3. Minimum one family member is officially involved into the operative leadership (or rather supervision) of the family business.
4. Quoted businesses are defined as family businesses, if the person, who has founded the business or has acquired the stock or the person's family or descendants due to their proportion on the stock have 25% of the decision rights (cf. Wünschl 14.12.2015; Stiftung Familienunternehmen no year).

In addition, if:

1. Minimum one other person is employed.
2. The business intends to continue the family business (cf. Wünschl 14.12.2015).

In general, it can be said, that, with reference to academic research, family businesses do not take that much debts, less often fire employees, behave sustainably, engage for their regional environment and focus on long-term performances (cf. Steltzner 2011, p. 4).

3.2 Characteristics of family businesses

Generally, family businesses operate in the same way as non-family businesses. However, some characteristics and specialties as well as advantages and disadvantages exist, which differentiate these two types. Family businesses have a unique character through strong personalities and traditional families (cf. Baus 2013, p. 15). Subsequently, these characteristics are described.

3.2.1 Structure

The first and highly relevant characteristic is that a family business is influenced by the system *family*, which aspires for the existence of its members, as well as by the system *business*, which aims for profit maximisation. The communication type within these two systems differs, because within the family the communication is informal, whereas the communication within the business is formal (cf. Simon/Wimmer/Groth 2005, p. 35f.).

The influence of the system *family* evokes a huge difference for the business. This can cause potential conflicts or crises. The following table shows some differences of this two-systems-model (cf. Mühlebach 2004, p. 18).

Factor	Family	Business
Behaviour	Emotional	Rational
Risk attitude	Risk-averse	Venturesome
Evaluation of members	Non-performance-related	Performance-related
Relationship principle	Feelings and relatives	Contract as basis

Table 5: Comparison of the system *family* and the system *business* (based on Mühlebach 2004, p. 18)

A further development of the model above, which is called *Three-Circle-Model* and which is described in the following sub-chapter, faces the interaction of three and not only two complex systems within a family business. This model is also the basis for the subsequent sub-chapters.

3.2.2 *Three-Circle-Model*

This model regarding family businesses consists of three independent systems, which are closely connected to each other. These systems are *family*, *business* and *property*. Every system has a characteristic momentum, which influences the other two systems (cf. Zimmermann 2012, p. 211f.). This is a main characteristic of family businesses and is called, as already mentioned above, *Three-Circle-Model*, which was developed by Mr. Tagiuri and Mr. Davis (cf. Rösen 2009, p. 34 quoted from: Tagiuri, Davis 1982, p. 200). The model supports the visualisation of the complex relationships within a family business (cf. Rösen 2009, p. 34). Moreover, it represents and illustrates different roles, which the involved people can have. Due to that fact, the involved people have various expectations and different manners as well as modes of communication towards other family members depending on their role in a certain moment or scenario. The matter of fact, that one involved person can have more than one role and belong to more than one circle, can lead to contradictory expectations. For example, someone can be a son and simultaneously a subordinated employee or a brother and simultaneously an equal managing partner (cf. Rösen 2009, p. 34 quoted from: Simon 2002a, p. 29; Simon 2002b, p. 37; Simon/Wimmer/Groth 2005, p. 17).

Within a family business many problems and conflicts can arise through conflicting goals, standards, value systems or organisational structure, which lead to a complex environment (cf. Papesch 2010, p. 38; Wirsching 2017, p. 20).

Following the *Three-Circle-Model* is graphically represented. The degree of overlap depends on the type and actual phase of the family business (cf. Zimmermann 2012, p. 212).

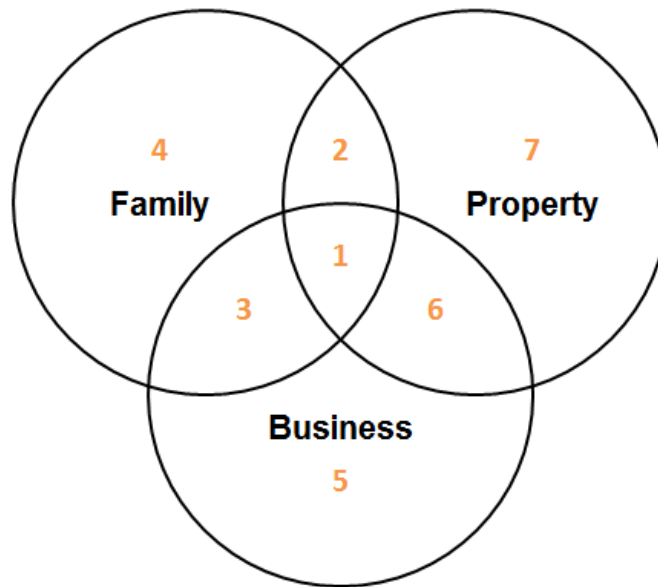


Figure 6: *Three-Circle-Model* (based on Simon/Wimmer/Groth 2005, p. 92)

Before describing the seven different roles, which involved people of a family business can have, main aspects of the three systems are mentioned:

- **Business**
Success of brands, products, prices and the competition is focused. Furthermore, rules for communication exist. Meetings, intranet, emails etc. are the frameworks for communication. Employees dispose of necessary competences in order to execute their tasks. However, these employees can be replaced – they are just means to an end. This system has an economic logic.
- **Family**
To the contrary of economic goals of the business, the family focuses on love, affection as well as commitment. Besides, a family member cannot be replaced or dismissed. The members stay and can get new tasks or responsibilities over the time. The value of a person is generated through his

belonging and not through his performance, like it is considered in a non-family business. Moreover, the communication is personal and direct. However, lots of emotions exist, which is due to the relationships. This system has an emotional logic.

- Property

This system includes all persons, who are holding shares through founding, heritage, purchase, exchange or endowment. Especially, in later generations the ratio of property can be diverse, which can cause complexity. The owners have an important position because they have the power to decide. This system has a financial and strategic based logic (cf. Zimmermann 2012, p. 212 - 214).

These three systems are influencing each other mutually and evolve, which means that a co-evolution exists (cf. Zimmermann 2012, p. 215). Two consequences have to be considered:

- A move or change within one system possibly triggers reaction in another system, which can affect the first system again. This is called interdependency.
- If the systems influence each other but still stick to the original logic, contradictions will arise, which cannot be solved (cf. Zimmermann 2012, p. 215).

As it is mentioned above, the seven different roles are described subsequently:

1. Family member, holding shares and working in the business

Usually, the head of the family and managing partner has this position. Active working siblings or successors, who already work in the business, can also capture this role. The emotional bond to the business and products or services is very intense. Additionally, these persons strongly identify themselves with the business and have a long-term orientation, which means that the persistence of the business is prioritised and not earning money very quickly. However, this strong identification can lead to conflicts or problems as well because if their successors have different views and ideas, it can hinder the process of the succession and thus, the success too.

2. Family member, holding shares but not working in the business

This can be spouses, heirs, who do not work, or successors, who gain experience outside the company before starting to work there. In addition, in later generations elderly persons, who do not actively work any longer, can have this role, which ensures the constant relationship. They invested their money when they founded the business and left it there, because they trust in their successors and appreciate them. If they mistrust their successors, it can lead to conflicts.

3. Family member, not holding shares but working in the business

Descendants, who work in the business without holding shares, or potential successors, who actually do not hold shares, can capture this role. Furthermore, working sons-in-law or daughters-in-law can capture this position. Often, sons-in-law execute a managing position within the business to strengthen the connection also for prospective children.

4. Family member, not holding shares and not working in the business

The following persons are not directly connected with the business and can have the following roles: spouses, descendants without shares (if they are children, for example), paid out family members, elderly persons after the handover of their shares.

5. No family member, not holding shares but working in the business

These are usually employees or external managers. They want a high salary, enjoyable working atmosphere, interesting tasks as well as a securing of their position. However, if problematic phases arise, they are willing to relinquish certain points in order to retain the business and their working place.

6. No family member, holding shares and working in the business

This can be external managers, who hold minority shares, or long-term employees. These employees can support the balance and dynamic within the family and aim for welfare of the business. Their financial purposes are long-term oriented. However, this is more likely to be rarely because families are afraid of losing their power.

7. No family member, holding shares but not working in the business

Typically for this role are investors or inactive partners. However, this is rather usual in later generations or expansions of the business. If these persons become more, the emotional connection gets lost and the shareholder value is focused. Conflicts with the roles “one” and/ or “three” can arise (cf. Rösen 2009, p. 36; LeMar 2014, p. 44f.).

In general, it can be said, that the model shows the connection between rising complexity of property, family as well as business and increasing requirements regarding structure and plans. The close interconnection of the different systems is prerequisite for achieving success (cf. Ulrich 2011, p. 123).

Following, three main groups of persons of the *Three-Circle-Model* (entrepreneur, family, employees) are described in more detail in order to support the general understanding. Moreover, other affected areas by the *Three-Circle-Model* are headed.

3.2.3 Entrepreneur

An entrepreneur is driven by the motivation for action by creating something and implementing it into the business. He has the energy and willingness for the realisation of an idea even if resistance exists and wants to create and contribute a certain share to the environment (cf. Zimmermann 2012, p. 56 - 58).

Every family business is influenced by the entrepreneur because the business is managed on the basis of his character, attitude and daily condition. Due to the fact, that the entrepreneur is depended on the success and sustainability of the business in order to finance his and his family's life, every occurrence is linked to the entrepreneur's condition (cf. Hennerkes/Kirchdörfer 2015, p. 47). In addition, the entrepreneur of a family business leads the business and owns the capital or assets, which can lead to advantageous or disadvantageous consequences (cf. LeMar 2014, p. 6f.). However, the family and its intact coherence are responsible for the success (involvement and consulting regarding decision-making-processes etc.) of the business too (cf. Wimmer 2007, p. 33).

As it is mentioned before, the entrepreneur not only cares about himself, he has a sense of responsibility for his family as well as for the employees of the family business and additionally for the region. Moreover, an entrepreneur is driven by

willingness, creative will, leadership skills and creativity (cf. Hennerkes/Kirchdörfer 2015, p. 49).

An entrepreneur completely commits to the success of the business. He does not just care about profit maximization. He prioritises entrepreneurial operations and wants to retain the capital within the business for further generations (cf. Hennerkes/Kirchdörfer 2015, p. 49; Wimmer 2007, p. 34).

Furthermore, the entrepreneur motivates and inspires his employees. Even in times of crises, the entrepreneur tries to keep his employees and appreciate their work (cf. Hennerkes/Kirchdörfer 2015, p. 49).

One of the characteristics, which define an entrepreneur, is creativity, which supports the success of the family business. An entrepreneur tries to improve his products or services or processes all the time in order to be one step ahead off the competition (cf. Hennerkes/Kirchdörfer 2015, p. 50; Baumgartner 2009, p. 22).

Due to the fact, that entrepreneurs want to build up a sustainable and successful business and do not just focus on a financial period, they have a long-term view and in the course of that, they develop long-term strategies and goals (cf. Baumgartner 2009, p. 22f.).

Furthermore, the period of time, in which one entrepreneur operates is on average around 20 years. This supports the continuity within the family business and reduces the effort for searching new board members. However, negative issues can be caused as well. For example, if the entrepreneur sticks to out-dated management principles or strategies or does not want to pass the leading position on to the selected successor (cf. LeMar 2014, p. 6f.).

3.2.4 Family

The family has an intrinsic entrepreneurial responsibility for the business. This is due to the family identity and value system of the family (cf. Wimmer 2007, p. 30f.). Moreover, the family including the emotion of the family members have a huge influence on the family business (cf. LeMar 2014, p. 1 - 3; Halder 2016, p. 36).

The tight connection between family and business is the formula for success of a family business, which is a powerful potential. It supports a special dynamic, energy as well as persistence (cf. Baus 2013, p. 15). This closely collaboration of family and business generates on the one side competitive advantages but it can cause on the other side conflicts or problems. Competitive advantages signify in

this case, that business matters are discussed within the family (at the beginning mostly driven by the entrepreneur) and private matters are ranked after. Thus, a communication culture is developed and a positive impact on the business performance can be achieved. Problems of the business are problems of the family members as well. It cannot be separated. Moreover, conflicts within in the family affect the collaboration and dealing with each other within the work environment too. The family strongly influences the business, which is why it can become a huge disruption. Internal issues of the family cause more often collapses of the business than the market (cf. Wimmer 2007, p. 33f.; Baus 2013, p. 16).

However, if family members work in the family business, the following advantages are achieved:

- Access to useful and valuable human resources
- High relationship of trust among family members
- Possibility to gain experience and further education or training
- Preparation and securing of a successor for the future
- Fiscal advantages through calculating their wages as expense (cf. Felden/Hack 2014, p. 160)

The family is resource, influencer and source of strength for the family business and therefore, it is indispensable, that their collaboration is intact. Therefore, the basis for a sustainable future of a family business can be achieved. As the future orientation from the entrepreneur is mentioned above, this goal is forced by the other family members in every generation as well because it is the source of income and their lifework. Due to that fact, their focus and goals are always long-term and cross-generational. However, this is not always advantageous, especially nowadays. Technology, business concepts etc. are changing very fast and therefore, flexible strategies, product or service improvements, innovations etc. are required. This flexibility is often hard to implement for traditional family businesses (cf. Pirmanschegg 2016, p. 53; Wimmer 2007, p. 35).

The forced good reputation of the family and its business plays an essential role. The aim of achieving high customer satisfaction is due to the desired good reputation of the business in the customer's heads. Thus, the individual handling

of the customer's needs, which is subconscious, is prioritised and represents a competitive advantage (cf. Wimmer 2007, p. 36 - 38).

Consideration should also be given to the different roles of the family members. Therefore, some roles are mentioned subsequently:

- Spouses

Formerly, mostly men were the leaders of the family business. Therefore, the wives provided a huge support and managed lots of important tasks. Nowadays, if the family business is rather a big company, wives do not actively work within the business. However, they still function as consultants and work outside the family business. Wives have a strong connection to the family business because they are influenced by their husband's business environment (working hours, worries etc.) (cf. Hennerkes/Kirchdörfer 2015, p. 52 - 53).

- Sons and daughters

Sons and daughters get very early influenced as well as involved into the business and are constantly in contact with the business' issues since they were children. There is no separation between private and public spaces or rather business and home (cf. Hamilton 2013, p. 150 - 152). One reason is the desired succession of the own child or children. Mostly, children have a lot of pressure because their parents already decided about their future. Nowadays, this pressure and dominance changed a bit. Sons and daughters can choose their own way of business life. They gain lots of external and, due to the circumstances, international experience and education. However, no education for being an entrepreneur exists but it can be supported and developed (cf. Hennerkes/Kirchdörfer 2015, p. 54f.).

- Sons-in-law and daughters-in-law

The devolution of shares for sons-in-law or daughters-in-law is more likely to be rarely. However, before the marriage it is necessary for the family that some points have to be discussed and clarified, which is usually unpleasant and seems mistrustful and mean. It is common to draw up a contract, which contains legal hedges (cf. Hennerkes/Kirchdörfer 2015, p. 59f.).

3.2.5 *Values, culture, goals*

As it is mentioned above, the family strongly influences the business and has a very tight connection to it. Therefore, the values, the culture and the goals of a family business are highly affected by the family including the entrepreneur as well. These aspects can evoke advantages as well as disadvantages and can influence the relationship to each other and the dealing with certain issues. Furthermore, the goals, the values and the vision of a family can forward or hinder the growth of a family business. Resistance against necessary changes, conflicts within the family, generation changes etc. can have a negative impact on the business (cf. Seibold 2017, p. 8). This can be reasoned by the influence of family traditions and customs regarding vision, rules, culture and operations. Especially, the background of a family characterises the value system of the business as well (cf. Baumgartner 2009, p. 23). A family business culture is developed through these influencing factors. Therefore, there is a strong identification of the family with the business (cf. Pirmanschegg 2016, p. 53).

With reference to the statements above it can be said, that value systems and formulations of family businesses differentiate from non-family businesses. Values of family businesses are described as emotional, fundamental and humanly whereas value formulations of non-family businesses are rather impersonal and success-oriented. However, value systems among family businesses differ as well because every family business and the involved people are individual and possess diverse value perceptions. Nevertheless, it can be said that in general the following five values signify family businesses: commitment, sense of responsibility, justice, diligence and success (cf. Felden/Hack 2014, p. 45f.). The diligence of the entrepreneur supports an increased readiness for work of his employees too. The individual value orientation of family businesses is an essential item for dealing with employees, which ensures safety and leads to loyalty (cf. Pirmanschegg 2016, p. 56).

Family businesses exhibit due to their values and origin a high social responsibility. The value-based dealing with the environment is focused by a family business in order to ensure a sustainable future for the business and the people. The whole value chain is included. Moreover, the support of regional businesses by obtaining their products and services is considered. Additionally, it is characteristic for family businesses to behave environmentally conscious, energy and resource gently (cf. Pirmanschegg 2016, p. 54f.).

3.2.6 *Take-over/ succession*

With reference to the different roles of a family business within the *Three-Circle-Model*, the succession has to be considered as well because in the course of the take-over, the roles of certain family members or leaders change.

A generation change can evoke various conflicts. Technological and social change, digitalisation, globalisation etc. are responsible for different ideologies of the old and the young generation. The successor wants to create and implement his own ideas and execute change, whereas the actual entrepreneur wants to share his knowledge as well as experience and forces the consistency of his achievements and implementations. Furthermore, nowadays the successor gains experience outside or rather before working in the family business. Due to the fact, that the successor is aware of his future position, he wants to actively participate in major decisions, which can be influenced by his external experience. This is often not expected by the actual entrepreneur (cf. Hennerkes 1998, p. 47). Especially, the period of the handover can trigger a role conflict. Successor, actual entrepreneur and, of course, employees and other involved people are situated in an interphase, which is challenging for everyone. The positions are not fixed, which can lead to misunderstandings or even conflicts. In addition, missing or incomplete target formulations hinder the progress. Therefore, the handover can cause many conflicts, which are mostly on an emotional basis (cf. Felden/Klaus 2007, p. 178 - 181). These conflicts pass over from business level to family level and the other way around and moreover, restrict actions and creativity of the involved family members (cf. Meyer 2007, p. 139).

In general, it can be said, that families want to keep the control of their business and therefore, the choice of the successor is often driven by the willingness of internal take-overs. This means that a family member should take over the business even if he does not have the competence and is not capable of executing this position. Such decisions can result in fatal consequences for the business and the family, which need lots of effort to find solutions, which possibly compensate these issues (cf. Wimmer 2007, p. 43).

3.2.7 Employees

Another group of people within family businesses are the employees. However, the organisational structure of a family business is rather less developed. The structure of employees and their tasks emerged due to historical reasons. This means, that positions were developed with reference to the tasks, which have or had to be settled. The takeover of different tasks is characteristic for employees in family businesses. This leads on the one side to shortages of personnel whereas on the other side to high trust, which supports the confidence and qualifications, due to the responsibility, of the employees. Employees have an emotional connection to the company, a loyal relationship of trust and a high commitment. Due to that, the family members, who lead the business, show empathy regarding personal issues of their employees (cf. Pirmanschegg 2016, p. 51f.).

3.2.8 Governance

Another area of the *Three-Circle-Model* is the property. Due to that, the structure of the owner(s), who has (have) a stable and rather long-term relationship to the business, is important and influencing as well. The emotional connection between the owner and the business in a family business is much higher than in non-family businesses. Additionally, the number of owners is rather lower and therefore, the importance of every single owner increases partly because the investment into a family business is a central source of income for owners. Not only the economic aspects are focused, but also the dynamics and relationships of the family (cf. May 2007, p. 61).

Within a family strategy a stable success of the business, which is supported and improved through the family, is aimed. The family should not function as a disturbing factor, it should be the source of strength, which focuses on collaboration and long-term sustainability of the business. However, the strategy has individual divergences with reference to diverse families. Therefore, the family strategy is the journey to individual *Good Governance* of a family business. This means in detail, that a family is searching for its identity, *Corporate Governance* as well as *Family Governance* (cf. May 2007, p. 63 - 67).

Corporate Governance is described as the structure of leadership and monitoring organs and the rules, which are determined. Furthermore, the allowance of family principles, which are solidarity, cohesiveness and equality, by the side of rational

principles, which are company-based, stands for *Family Governance*. The challenge or rather art of family businesses is to keep a balance between these two areas without mixing them up (cf. May 2007, p. 63 - 67).

3.2.9 *Relative advantages/ disadvantages*

At the end of this chapter, some relative advantages and disadvantages of family businesses are listed in order to summarise some important facts of the sub-chapters before. The relative advantages and disadvantages are categorised into internal, external, family and psychological aspects (cf. Baumgartner 2009, p. 32f.):

Category	Advantages	Disadvantages
Internal	<ul style="list-style-type: none"> - Motivation of employees - Personality traits of founders 	<ul style="list-style-type: none"> - Insufficient qualified employees - Issues regarding financial situation
External	<ul style="list-style-type: none"> - Customer relationships - Access to the market - Continuity for customers and market 	<ul style="list-style-type: none"> - Focus on production - Missing economic dynamic
Family	<ul style="list-style-type: none"> - Values and goals of the family - Special relationships within the family - Open communication 	<ul style="list-style-type: none"> - Emotional conflicts - Diverse goals of family and business - Diverging interest of family members
Psychological	<ul style="list-style-type: none"> - Human, personal and psychological connection - Strong emotional bond - Founder is the business 	<ul style="list-style-type: none"> - Founder is not able to hand over - Perseverance of the founder - Strict structure of family and business

Table 6: Advantages and disadvantages of family businesses (based on Baumgartner 2009, p. 32f.)

4 Organisational resilience in family businesses

As it is mentioned at the beginning of chapter 3, the contribution of organisational resilience regarding each characteristic of family business is elaborated. Moreover, the contribution of chosen factors to the competences *adaptability* and *resistance* is worked out as well. The last sub-chapter consists of summarising tables of this chapter in order to simplify the understanding.

4.1 Characteristics regarding organisational resilience

Within this sub-chapter the positive or negative contribution to organisational resilience of the elaborated family business characteristics of chapter 3.2 are headed.

Structure & Three-Circle-Model

Negative contribution

- Goal- and solution-orientation

Three systems – three logics: business = economic logic, family = emotional logic, property = financial and strategic based logic (cf. Zimmermann 2012, p. 212 - 214); many problems and conflicts can arise through conflicting goals, standards, value systems or organisational structure (cf. Papesch 2010, p. 38; Wirsching 2017, p. 20)

- Business continuity

Demonstration of rising complexity and changing of property, family as well as business (cf. Ulrich 2011, p. 123)

Entrepreneur

Positive contribution

- + Ingenuity and self-responsibility

Creative will, willingness for the realisation of an idea, creating and contributing to the environment (cf. Zimmermann 2012, p. 56 - 58; Hennerkes/Kirchdörfer 2015, p. 49)

- + Long-term view and future orientation
Retaining the capital within the business for further generations, wanting to build up a sustainable and successful business, developing long-term strategies (cf. Hennerkes/Kirchdörfer 2015, p. 49; Wimmer 2007, p. 34; Baumgartner 2009, p. 22f.)
- + Optimism
Motivating and inspiring employees (cf. Hennerkes/Kirchdörfer 2015, p. 49)
- + Understanding customer needs
Aiming to achieve high customer satisfaction through the individual handling of the customer's needs (cf. Wimmer 2007, p. 36 - 38)
- + Anticipation, innovation and chances orientation
Improving products/ services/ processes all the time in order to be one step ahead off the competition (cf. Hennerkes/Kirchdörfer 2015, p. 50; Baumgartner 2009, p. 22)
- + Business continuity
Operating as the entrepreneur for around 20 years (cf. LeMar 2014, p. 6f.)

Negative contribution

- Future orientation
Sticking to out-dated management principles or strategies (cf. LeMar 2014, p. 6f.)
- Acceptance and trust
Avoiding or rather postponing the handover of the leading position to the selected successor (cf. LeMar 2014, p. 6f.)

Family

Positive contribution

- + Employee identification with the business vision
Feeling intrinsic responsible for the business due to the family identity and value system of the family (cf. Wimmer 2007, p. 30f.)
- + Cooperating, trust and network-orientation
Tight connection between family and business, which supports a special dynamic, energy as well as persistence (cf. Baus 2013, p. 15)

- + Long-term view
Focusing on long-term and cross-generational goals (cf. Pirmanschegg 2016, p. 53)

Negative contribution

- Cooperating
Influencing conflicts within in the family affect the collaboration and dealing with each other within the work environment, family can become a huge disruption through the high influence (cf. Wimmer 2007, p. 33f.; Baus 2013, p. 16)
- Future orientation
Difficult implementation of changing technology etc. for a traditional family business (cf. Wimmer 2007, p. 35)

Values, culture, goals

Positive contribution

- + Corporate culture
Forwarding of the growth through goals, values and vision of a family (cf. Seibold 2017, p. 8)
- + Employee identification with the business vision
- + Non-commercial engagement
Value-based dealing with the environment to ensure a sustainable future for the business and the people (cf. Pirmanschegg 2016, p. 54f.)

Negative contribution

- Corporate culture
Hindering of the growth through goals, values and vision of a family (cf. Seibold 2017, p. 8)

Take-over

Negative contribution

- Well-trained and appropriately skilled staff
Handing over the business to a family member even if he does not have the competence (cf. Wimmer 2007, p. 43)

Employees

Positive contribution

- + Employee identification with the business vision and trust
Having an emotional connection to the company, a loyal relationship of trust and a high commitment (cf. Pirmanschegg 2016, p. 51f.)
- + Resource management
Taking over different tasks, which support the confidence and qualifications due to the responsibility of the employees. (cf. Pirmanschegg 2016, p. 51)

Negative contribution

- Resource management
Shortages of personnel through deploying employees for different and additional tasks (cf. Pirmanschegg 2016, p. 51)

Governance

Positive contribution

- + Governance
Stable and long-term relationship of the owner to the business, high emotional connection, rather low number of owners, which raises the importance of every single owner, focusing on economic tasks and relationships (cf. May 2007, p. 61)

The factors, which are influenced by the characteristics of family businesses and headed above, are subsequently required.

4.2 Contribution to adaptability and resistance

The elaborations of this sub-chapter are essential for the development of the instrument. With reference to chapter 4.1 the relevant factors of organisational resilience in family businesses are mentioned again in the following table. Just these factors of the sub-chapter 2.5, which are assumed to be relevant and necessary for family businesses, are chosen. In the course of the primary market research of this master thesis, the chosen factors are confirmed, adapted or eliminated due to the knowledge of experts.

In order to know how resilient a business is, the addressed competence through each factor has to be worked out. One option for defining competences of organisational resilience is the classification into *adaptability* and *resistance* (cf. Wünschl 04.01.2018). For this master thesis, these two competences of a business are chosen. Therefore, the following table shows additionally which factor contributes to the competence *adaptability* or/ and the competence *resistance* within a business.

Moreover, the table shows, that especially in the area *people behaviour* many factors are characteristic and support the *adaptability* and *resistance* of a family business, which is due to the constellation of a family business. The entrepreneur and the family members have a huge influence and are responsible for the sustainable success of the business.

The factors of the area *people behaviour* stands in family businesses for employees, the leader and, of course, for family members, because as it is already mentioned, they are most commonly employed due to financial and confidential reasons.

The factors within the table are shaded in three different colours to ensure a better overview. The colour depends on the contribution:

- Adaptability = green
- Resistance = orange
- Both = yellow

Factors regarding organisational resilience	Contribution to competence
Product/ service excellence	
Anticipation	If a business is able to detect crises, threats etc. before they arise, it supports the adaptability because the business can prepare for that and execute necessary changes.
Innovation	With reference to a VUCA world and changing requirements and needs, a business has to improve its products/ services or launch novelties in order to stay competitive. This necessitates adaption of products/ services. Due to the enabled competitiveness through innovation, it contributes partly to resistance as well.
Understanding customer needs	This factor means, that the (latently) needs of a customer is understood and also implemented for satisfaction and loyalty. Therefore, it belongs to adaptability .
Chances orientation	If a chance is observed on the market, the business has to change or adapt certain aspects in order to take the chance and possible success.
Process reliability	
Governance	Governance includes the family as well as business principles within a family business. These principles support the direction, strategy etc. of a business, which ensure resistance .
Goal-and solution-orientation	In general, a solution process has to be determined and especially goals are (should be) fixed. However, adaption regarding goals and solutions is required because internal and external unexpected problems and changes can arise.
Resource management	The existing resources are adapted to the given conditions. For example, if an employee is needed for an additional task, he is deployed for that.

Business continuity	Continuity signifies a stable state, persistence, toughness and continued existence. Therefore, this factor contributes to the ability resistance .
<i>People behaviour</i>	
Future orientation	This factor stands for proactive and pre-emptive structuring of the future, consistently developing future visions and taking the initiative. Therefore, the business has to adapt itself to the VUCA world in order to stay competitive, which contributes to resistance .
Self-responsibility	This factor means that people adapt and change lots of facts and conditions around them in order to detect potential problems, avoid them and create new as well as useful ideas.
Corporate culture	Corporate culture contains values and trust and affects the whole staff and company very strongly within a family business. The values, which are communicated, like diligence and sense of responsibility, contribute to a resistant business.
Network-orientation	If employees focus on a strong internal and external network, the collaboration and relationship is increased and this automatically leads to a stronger resistance .
Well-trained and appropriately skilled staff	If an employee has the necessary skills and training, then he is able to handle diverse tasks in a successful way, which supports the resistance .
Trust	The trust of a leader into his employees and the business as well as the trust of the employees into the business support the collaboration and relationship with each other. Due to that, the business gets more resistant .

Cooperating	If employees cooperate, stick together and have a good relationship to each other, internal conflicts can be minimised and the collaboration is increased, even if they usually do not work within the same department or on the same project/ topic. This support raises the resistance .
Ingenuity	Ingenuity can be driven by the scarcity of resources, which leads to necessary innovation or rather new ideas and therefore, adaptability is required.
Optimism	If a person is optimistic, he has a positive attitude in general. This person is able to stand setbacks easier because he believes in new chances and starts to create or do something different. He does not give up. Due to that, optimistic people support the resistance of a company.
Non-commercial engagement	A family business behaves environmental friendly and supports other businesses within its region (e.g. obtaining regional products/ services). Due to that, its reputation stays on a high level, which leads to trust and in the course of that, to increased resistance . Additionally, employees are treated well and want to be kept for a long time. Their experience and loyalty contributes to resistance as well.
Employee identification with business vision	Employees, who strongly identify with the business (especially in family businesses), are willing to adapt themselves and align to the overall business conditions.

Table 7: Elaborations regarding organisational resilience in family businesses (own presentation)

4.3 Summarising representations

In order to simplify the understanding and connection between sub-chapter 2.5 and the two sub-chapters before as well as to summarise the elaborations, graphical representations are provided below.

The three dimension groups including the factors, which are mentioned in chapter 2, function as basis for the tables. Each dimension group is separately headed. At first, the dimension group with its factors are categorised again. Then the influencing factors in relation with family businesses are listed. In addition, these factors show if their contribution is positive or negative for family businesses. Within the final table these influencing factors are transformed into the competences *adaptability* and *resistance*.

Following, the relationship of the elaborations of each dimension group are headed:

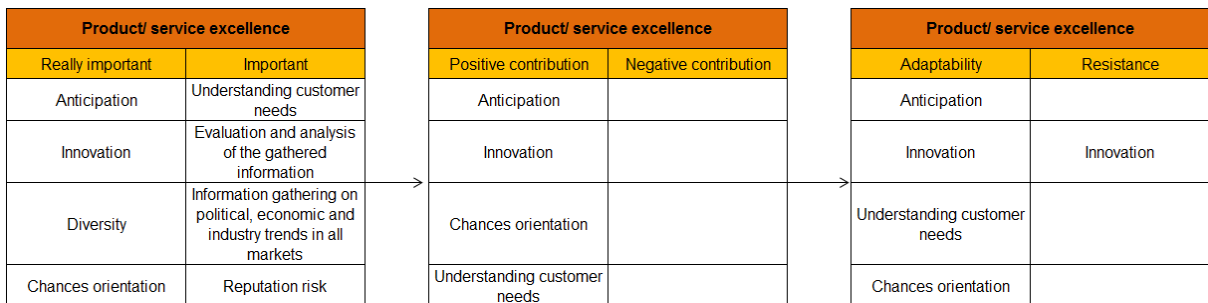


Figure 7: Summarised elaborations *product/ service excellence* (own presentation)

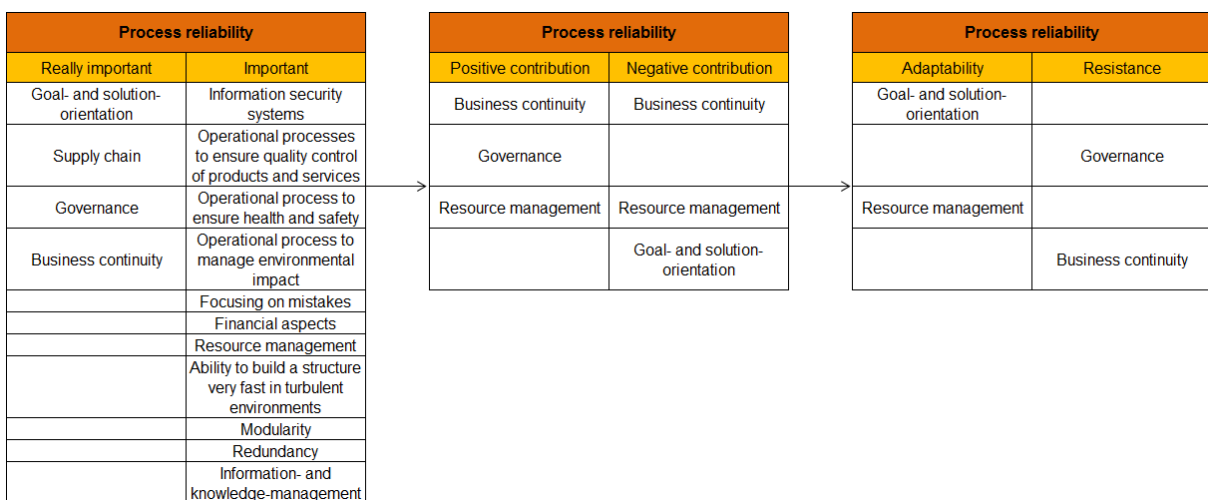


Figure 8: Summarised elaborations *process reliability* (own presentation)

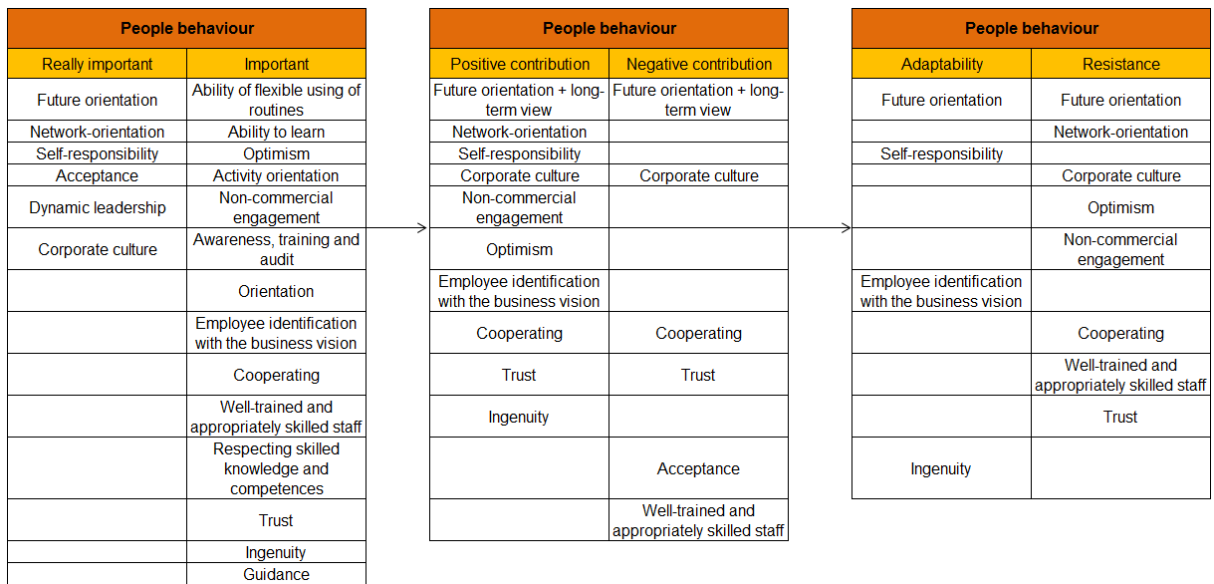


Figure 9: Summarised elaborations *people behaviour* (own presentation)

5 Theoretical models and methods for assessing and displaying selected criteria

The instrument for this master thesis consists of a (self-) assessment, which is supported by a rating and display method. The theoretical basis is laid within this chapter and is applied afterwards within the next chapter.

Within this chapter a supporting instrument for developing the (self-)assessment, some methods for rating and displaying are described and the most suitable ones for this master thesis are chosen.

5.1 Cost utility analysis

The family business should evaluate itself regarding several factors, which have been elaborated in chapter 4. Parts of the analysis are used to support the structure, measurability and rating of the self-assessment.

For this master thesis, the *cost utility analysis* is divided into a weighting and rating part, which are separately executed. With the aid of expert interviews, which are conducted within the empirical part, the weighting is done and fixed as a basis. The rating itself is depending on every family business and accomplished by them.

The *cost utility analysis* is one of the most common procedures to reveal qualitative factors with the support of quantitative variables (cf. Schulze 2009, p. 163). It is an instrument to simplify and to support a decision. Furthermore, it is useful, if one of the circumstances below exists within a business case:

- The amount of decision criteria is high.
- The decision criteria are diverse, which means, that they have quantitative and qualitative characters.
- The ranking of the decision criteria is not possible.
- Many people with different backgrounds are involved into a decision process.
- It is impossible to come to a decision on the basis of routines or experience.
- The decision making process should be documented for shareholders etc (cf. Kühnapfel 2014, p.1f.).

The following structure has to be observed in order to successfully execute the *cost utility analysis*:

1. Organisation of the working environment
2. Naming the decision making problem
3. Choice of the alternatives of decision
4. Collection of decision criteria
5. Weighting of the decision criteria
 - a. Weighting with criteria groups
 - b. Weighting with the pairwise comparison
6. Rating of the decision criteria
7. Calculation of the value of benefit
8. Analysis of sensibility
9. Documentation of the results (cf. Kühnapfel 2014, p. 6)

With reference to this master thesis, the first two steps as well as step 4 were already executed at the beginning. Step 9 represents the final instrument. Moreover, step 3 and 8 are not focused because no alternatives exist. Due to the fact, that some steps have been executed and some are not considered, the *cost utility analysis* merely helps to weight (step 5), to rate (step 6) and to calculate (step 7) the value benefit of each factor. Therefore, these three steps are explained in more detail below. The graphical representation is shown within chapter 6.

5.1.1 Weighting of the decision criteria

This step is executed to figure out the importance of each factor. The importance of a factor is expressed by a ratio number, which is allocated in relation to the other factors. The ratio number is given in per cent and the total sum is 100%. Different types of implementation exist. Firstly, each criterion receives a grade, like at school. Due to the fact, that grade “1” is the best and within the cost utility analysis a high number or amount is aimed, an intermediate step is necessary. The grades have to be translated, which means that grade “1” gets five points and grade “5” gets one point (cf. Kühnapfel 2014, p. 10f.).

Another method is the forming of criteria groups, which consist of several factors. For these super categories 100% have to be allocated to these criteria groups. Within each criteria group 100% have to be allocated again to each factor. However, this is just recommended, if a criteria group does not consist of many factors because it could lead to a cognitive overload. Every factor receives due to its weighting and the weighting of its criteria group a total weight at the end, which is used (cf. Kühnapfel 2014, p. 12f.). Moreover, a method, which is called *pairwise comparison*, can be used. However, it is not considered for this master thesis.

5.1.2 Rating of the decision criteria

This step is about rating each factor for every alternative. As it is already mentioned, alternatives do not exist for this topic. Therefore, each factor is just rated in sequence. Different types of rating can be applied, like a grading scale or a scale with ten points (cf. Kühnapfel 2014, p. 16 - 18).

5.1.3 Calculation of the value benefit

The determined weightings and ratings of each factor have to be multiplied in order to calculate the value benefit. If more alternatives existed, the alternative with the highest sum (adding up the value benefits of each factor) would be chosen (cf. Kühnapfel 2014, p. 19).

5.2 Rating methods

Within this sub-chapter some existing rating methods are explained and represented. The most suitable method is chosen and explained in more detail.

5.2.1 Scales of measurement

Primarily, scales of measurement are described to ensure a basic knowledge for the following methods.

Nominal data

“Nominal data is data that is classified into discrete categories...” (Brace 2013, p. 48). If nominal data for an answer of a question is used, just one answer can be chosen. This means, that one answer excludes the other possibilities. A familiar example for nominal data is gender. Either a person is female or male. However, it

is also possible to choose one answer out of several opportunities, which also exclude each other (cf. Porst 2014, p. 71 - 73). It is important to ensure, that there is no overlap between the opportunities and that every person fits into one possible answer (cf. Brace 2013, p. 48).

Usually, a number or letter is allocated to every opportunity to analyse the selected frequency of each possible answer. The number does not imply value to any opportunity (cf. Porst 2014, p. 72; Brace 2013, p. 48).

Ordinal data

Ordinal data allows comparative statements, like bigger/ smaller, better/ worse or similar/ dissimilar (cf. Raab-Steiner/Benesch 2015, p. 30). This is due to the fact, that in contrast to nominal data the different opportunities have a relational connection to each other. This means, that answers regarding ordinal data can be ranked. One example for this scale of measurement is the following (cf. Porst 2014, p. 73f.):

How strongly are you interested into your studies?

- Really strongly
- Strongly
- Medium.....
- Little.....
- Not at all

With reference to the options, it is possible to rank them. However, the distance between the options cannot be analysed. It is not obvious, if *really strongly* and *strongly* have the same distance like *strongly* and *medium* (cf. Porst 2014, p. 74f.).

Interval scales

“Interval scales provide for a rating of each item on a scale that has a numerically equal distance between each point, and an arbitrary, zero point. Such scales are used to determine the relative strength of relationships between items. The five flavours of yoghurt could be individually rated on a scale from 1 to 10 for how much each is liked. There is an equal interval between each point, but a score of 8 does not necessarily mean that the item is preferred twice as much as another item scored 4” (Brace 2013, p. 51).

Ratio scales

A ratio scale has in contrast to the interval scale an absolute zero, which can be found in nature. Therefore, a ratio of two values or items can be measured. This is the highest level of scaling (cf. Raab-Steiner/Benesch 2015, p. 32). Examples for this type are the age or the income of people. If person A is 50 years old and person B is 25 years old, then it is obvious, that person A is twice as old as person B (cf. Brace 2013, p. 53).

However, in practice the difference between interval and ratio scales are not that relevant. Both scales of measurement are merged as *metric level* (cf. Raab-Steiner/Benesch 2015, p. 32).

Within the following table, the empirical relevance of each scale of measurement is shown (cf. Raab-Steiner/Benesch 2015, p. 33):

Scale of measurement	Empirical relevance
Nominal data	No relevance
Ordinal data	Ordering of numbers
Interval scale	Differences of numbers
Ratio scale	Ratios of numbers

Table 8: Empirical relevance of scales of measurement (based on Raab-Steiner/Benesch 2015, p. 33)

5.2.2 Rating scale

The first rating method, which is described, is the *rating scale*. In the course of this method, interviewees have the possibility to choose one out of more options, whereby information is gained. The answer possibilities illustrate a ranking and the interview partners have to decide between them. The items can be designated with numbers, words or both (cf. Raab-Steiner/Benesch 2015, p. 58 - 61).

Lots of differences exist, when building or developing the given items, like the Likert Scale, Semantic differential scale, Stapel scale, numeric scales, graphic scales or pictorial scales (cf. Brace 2013, p. 62 - 72). In addition, the number of given items differs as well and depends on the question (cf. Brace 2013, p. 56 - 61).

5.2.3 Scale of constant sums

This technique assumes a fixed number of points, like 100, which have to be allocated to various options. Due to that, the relative preference or importance can be measured. The extent of the importance is reflected by the number of points given to each possible option. However, this type can lead to cognitive overload, especially, if more options are given. Computer-assisted questionnaires support the facilitation (cf. Brace 2013, p. 73f.).

5.2.4 Magnitude scale

This type of scale is used for measuring attitudes through the formation of ratios. The intensity of perception is proportionally transformed to its intensity of numbers, the length of a line or the duration of a sound (cf. Wübbenhorst no year). This means, that one option is set as an anchor, which often receives the number or percentage 100. With reference to the anchor and its perceived value, a number or percentage should be allocated to the other options (cf. Mairhofer 13.12.2017). For example, if the anchor is set for A as 100 and someone rates B as 200, then the person receives B twice as good as A (cf. anon no year, p. 1). This method is rather used in connection with computer-assisted data collection (cf. Wübbenhorst no year).

5.2.5 Choice of a rating instrument

Subsequently, a table illustrates, why the *rating scale* is chosen as the suitable rating method. The criteria are adequately selected with reference to the object of this master thesis.

Criteria	Rating scale	Scale of constant sums	Magnitude scale
Applicable to many options	✓		
Minimum scale of measurement: ordering of numbers	✓	✓	✓

Table 9: Figurative representation of the chosen rating instrument (own presentation)

The criteria “applicable to many options” is decisive for using the *rating scale* because, as it can be looked up in the chapter 4, many factors for organisational

resilience regarding family businesses exist and will be implemented into the self-assessment. The chosen rating method is described in more detail below in order to ensure a common understanding.

Firstly, an example for a *rating scale* is mentioned below (cf. Raab-Steiner/Benesch 2015, p. 59):

Please rate the following competences with reference to your everyday professional life.

	Really important	Rather important	Rather unimportant	unimportant
Simultaneously working on a few tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaboration with other departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 10: Example of a rating scale (based on Raab-Steiner/Benesch 2015, p. 59)

The example above shows four items, which have an even number of points, are verbal and additionally balanced. Subsequently, these descriptions are shortly depicted.

Number of points on a scale

Five-point-scales are commonly used, but seven-point-scales (excellent – very good – good – neither good nor poor – poor – very poor – extremely poor) etc. exist and are applied as well. It is said, that the number of points on a scale should be between five and ten. An optimum number cannot be agreed on. However, if a neutral point exists, it is often chosen, if the respondents do not know, what to choose (cf. Brace 2013, p. 59f.).

Balanced or unbalanced scales

Usually, scales are balanced, which means, that the same number of positive and negative items (very good – good – average – poor – very poor) are given. However, if more positive items are used, then the number of positive answers tends to be higher than in balanced scales (cf. Brace 2013, p. 57).

Odd or even scales

In even scales the neutral point is eliminated. It depends on the topic as well as question type, if the neutral point should be used or not (cf. Brace 2013, p. 61; Raab-Steiner/Benesch 2015, p. 60).

Numeric or verbal scales

As it is already mentioned before, the designation of the scales can be numeric, verbal or a combination of both, which leads more or less to interval data (cf. Raab-Steiner/Benesch 2015, p. 60f.; Brace 2013, p. 56).

The most important dimensions for the grading of different items are:

- Frequency or probability
- Valuations like good/ bad
- Intensity/ strength/ magnitude
- Direct judgements like importance, satisfaction, safety or agreement (cf. Raab-Steiner/Benesch 2015, p. 61)

5.3 Display methods

This sub-chapter is nearly structured in the same way as the sub-chapter before. This means, that display methods are shortly explained including a figure to support the description and the most adequate one is chosen for this master thesis.

5.3.1 Bar graphs

A *bar graph*, or called *column graph*, is useful or supporting when presenting or comparing variations between groups. Additionally, they are sometimes used to illustrate how groups change or rather differ in course of time (cf. Nicol/Pexman 2003, p. 13). Bars are horizontally represented and columns are vertically represented (cf. Stapelkamp 2013, p. 336).

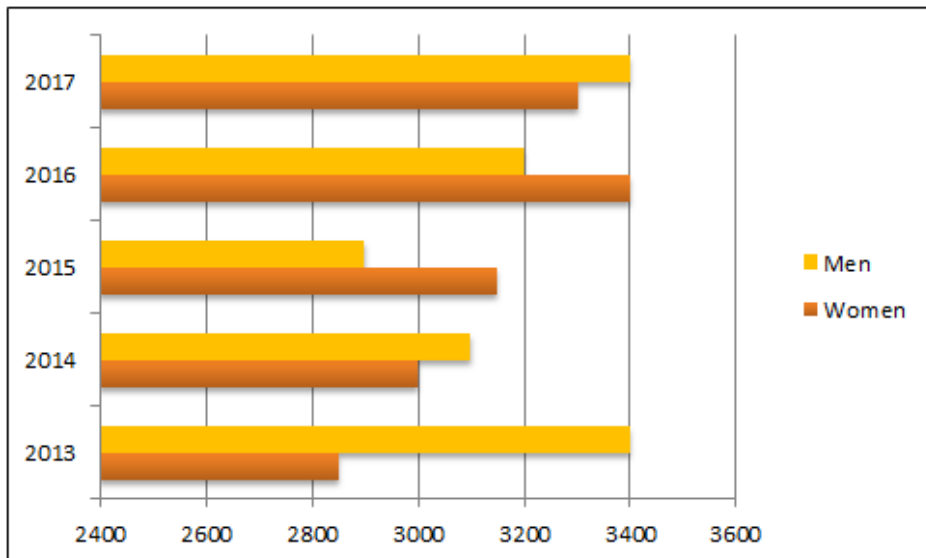


Figure 10: Example of a *bar graph* (own presentation)

5.3.2 Plots

“Plots are figures that present individual data points as a function of axis variables” (Nicol/Pexman 2003, p. 73). Different types can be the *scatter plot*, the *group centroids plot* and *multidimensional scaling* (cf. Nicol/Pexman 2003, p. 73). For example, the *scatter plot* visualises values of two statistical features. These values are illustrated within a system of coordinates and add up to characteristic clouds of points. In addition, the amount of data is not restricted. However, if too many values are illustrated, they possibly overlap, which is problematic (cf. Stapelkamp 2013, p. 348).

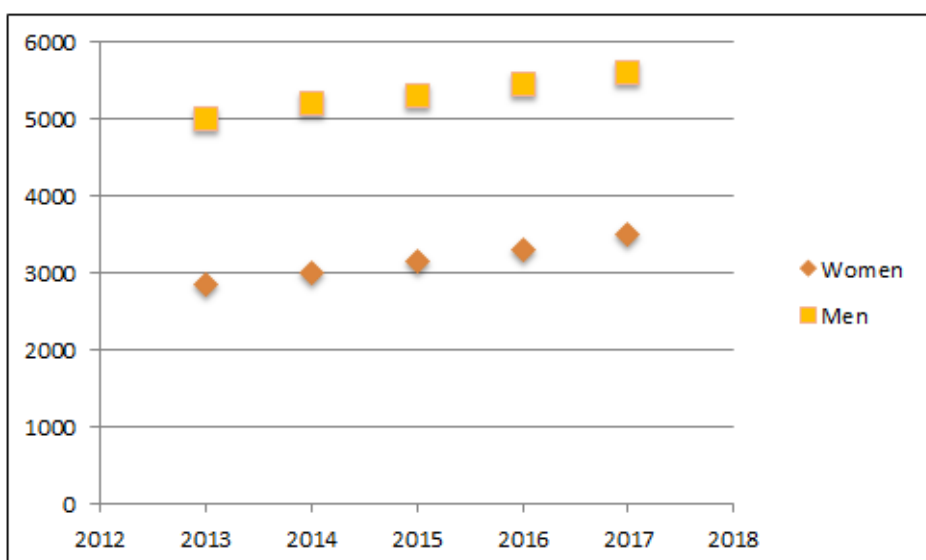


Figure 11: Example of a *scatter plot* (own presentation)

5.3.3 Pie charts

Pie charts are called *pie graphs*, *cake charts* or *circle graphs*. They are used to illustrate percentages or proportions relating to the whole or to each other. It is recommended to avoid more than five segments within one pie chart (cf. Nicol/Pexman 2003, p. 119).

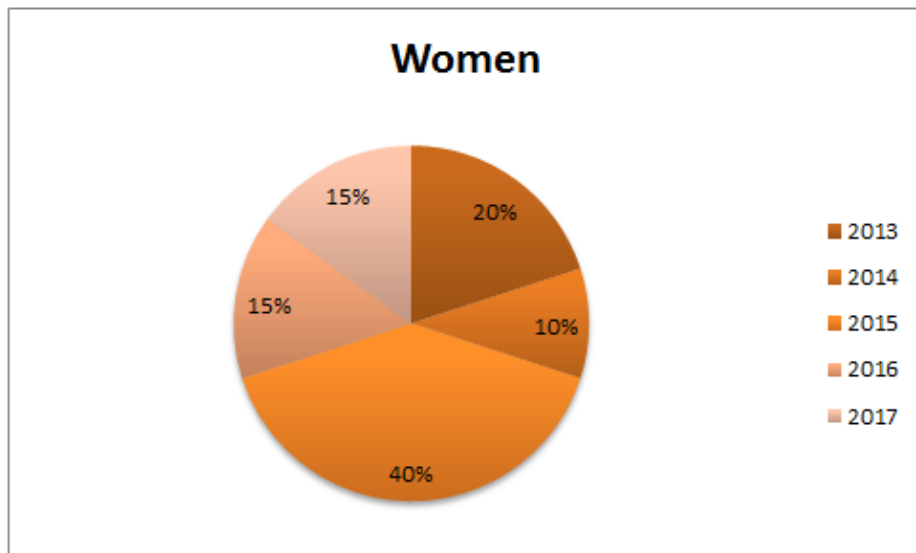


Figure 12: Example of a *pie chart* (own presentation)

5.3.4 Spider Charts

The *Spider Chart* is a combination of tables, bar graphs and pie charts. Many equal categories, which all have one axis each and show or rather convey a certain value, can be illustrated within this method. Georg von Mayr has invented the *Spider Chart* in 1877 for working with statistics (cf. Stapelkamp 2013, p. 358).

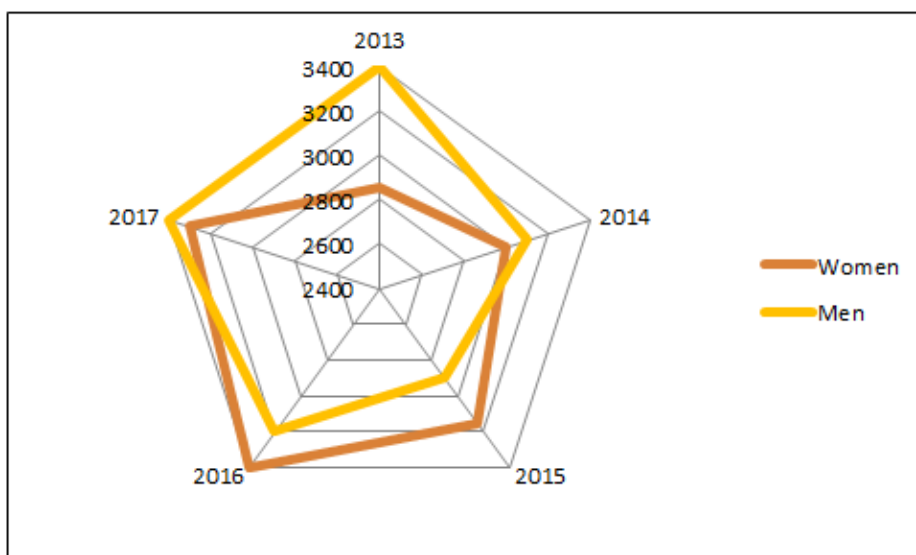


Figure 13: Example of a *Spider Chart* (own presentation)

5.3.5 Choice of a display method

Subsequently, a table illustrates, why the chosen display method is rated as the most suitable one. The criteria are adequately selected with reference to the object of this master thesis.

Criteria	Bar graphs	Plots	Pie charts	Spider Charts
Applicable to many options				✓
Useful for illustrating numbers	✓	✓		✓

Table 11: Figurative representation of the chosen display instrument (own presentation)

As the choice of the rating method depends on the criteria “applicable to many options”, the choice of the display method does as well due to the necessity of illustrating many factors. Therefore, the *Spider Chart* is chosen to be used within this master thesis.

However, the *bar* or *column graph* is also used within this master thesis. It is additionally needed to illustrate the different values of the competences *adaptability* and *resistance*. The *Spider Chart* is not suitable for every part of this displaying, if just two values overall or four values for one single factor are represented. Two values overall without additional dimensions cannot be illustrated within a *Spider Chart* and four values for one factor probably lead to confusion.

6 Instrument for assessing and displaying organisational resilience

The last theoretical chapter consists of the explanation of the developed instrument of this master thesis. Graphics are also illustrated in order to simplify the understanding of the instrument. The instrument consists of a self-assessment through the *cost utility analysis* including weighting of the factors, which is a preliminary step by experts, and following the rating of the factors via a *rating scale* by the executing family business as well as the displaying of the results via *Spider Charts*. In addition, the knowledge of the degree of organisational resilience of a family business is enabled through the transformation of each factor into one or both of the competences *adaptability* and *resistance*. The results are represented either through *Spider Charts* or *column graphs*. The whole instrument is developed with the aid of the programme *Microsoft Excel*.

6.1 Assessment through the *cost utility analysis*

The first and essential part of the instrument is the assessment through the *cost utility analysis*. As it is already categorised in chapter 2.5 and chapter 4, the dimension groups, which are *product/ service excellence*, *process reliability* and *people behaviour*, including the factors are used as basis for the structure of the assessment. However, the chosen dimension groups as well as factors are just based on the theory. In the course of the empirical phase, certain parts are adapted, added or eliminated through the knowledge of the experts.

The dimension groups and factors are fixed within every interview, the experts have to weight the overall importance of every dimension group. 100% have to be divided and allocated among the dimension groups (orange shaded cells within the table).

Subsequently, each dimension group is separately focused. In order to ensure a common understanding of each factor, short explanations are attached next to each factor. After reading through the factors and explanations of one dimension group, the expert has to weight each factor. This means that again 100% have to be divided and allocated within one dimension group (dark yellow shaded cells within the table). With reference to the weight of the dimension groups, a

deposited formula calculates the overall importance of each factor (column on the right side of the table).

The weighting of the factors is exclusively conducted by the experts during the interviews in the empirical part. The average weight of the experts regarding organisational resilience and regarding family businesses is calculated and filled into the *Excel sheet*, which is defined as a fixed value. This is done for the dimension groups and factors, which generates a stable and standardised representation of the weighting. This would additionally simplify the evaluation of results, if the instrument was executed.

The reason for choosing a neutral weighting is, that persons of a family business could weight a factor very low because they personally do not focus on this topic even if it was needed in the business. That would distort the results.

The following figure gives an insight into the weighting within the *cost utility analysis*. The numbers within this example are randomly chosen.

Dimension groups	Group importance in %	Factors	Description of the factors	Factor importance within the group in %	Overall importance of the factors in %
Product/ service excellence	30%	Anticipation	Detecting threats or potential crises before they arise	25	7,5
		Innovation	Enforcing a technical or organisational newness	35	10,5
		Understanding customer needs	Knowing what customers (latently) want and need	25	7,5
		Chances orientation	Observation of chances on the market and taking them	15	4,5
				100	30

Figure 14: Representation of the weighting within the *cost utility analysis* (own presentation)

6.2 Self-assessment through a *rating scale*

The self-assessment through the *rating scale* consists again of the dimension groups, factors and descriptions. The family businesses have to rate themselves regarding each factor. The following rating scale is used:

1	2	3	4	5	6
extremely poor	very poor	poor	good	very good	excellent

Figure 15: *Rating scale* of the developed instrument (own presentation)

The scale is given in numbers as well as words to simplify the choice for every person, who executes this instrument. Moreover, the items of the scale are even, which means that it does not have a neutral centre. Due to that, an “escape” category is avoided (cf. Porst 2014, p. 83). Thus, the person cannot select the neutral centre, if he does not know what to choose. This could distort the results.

The ratings of every factor are multiplied with the standardised weight, which is fixed with the aid of the experts. This is the *real weight value*. Additionally, an extra column exists, which contains the *maximum value* of each factor regarding the weight. The weight of every factor is multiplied with the number six, because this is the aimed and best value, which is displayed in the figure before. Due to that, the family business is able to compare the real and maximum value of every factor and receives the difference. Of course, these two columns are also deposited with formulas in order to enable an execution of the whole instrument without help or additional tasks.

Subsequently, a figure is used to show the self-assessment with reference to the *rating scale*. The ratings are randomly chosen again.

Dimension groups	Factors	Description of the factors	2) Rating of each factor	Including real value weight	Including maximum value weight
Product/ service excellence	Anticipation	Detecting threats or potential crises before they arise	4	0,30	0,45
	Innovation	Enforcing a technical or organisational newness	4	0,42	0,63
	Understanding customer needs	Knowing what customers (latently) want and need	5	0,38	0,45
	Chances orientation	Observation of chances on the market and taking them	3	0,14	0,27
		24	16	1,23	1,8
				68%	100%

Figure 16: Representation of the self-assessment through the *rating scale* (own presentation)

The adequate number of the rating scale has to be entered into the dark yellow shaded cells. As it is already mentioned, the other two columns are automatically calculated. The orange number points out the sum of the real value and the green number points out the maximum value. Additionally, the percentage of the real value in relation to the maximum value is calculated in order to receive a direct impression.

6.3 Spider Charts

Within the same table, like in chapter 6.2, *Spider Charts* are shown. They are directly positioned on the right side of the table next to each dimension group.

With the aid of this graphical illustration, the family business is able to find out, in which areas or rather regarding which factors it has to set further measures in order to improve itself.

The chart below illustrates the differences of the real and maximum value of the factors within the dimension group *product/ service excellence* as an example. The red line marks the real values, which are calculated through the weightings multiplied with the individual ratings. The green line marks the maximum values, which are calculated through the weightings multiplied with the best value (6: excellent). Due to that, the executing person is able to directly receive a graphical overview of his actual and the maximum value within every dimension group and factor.

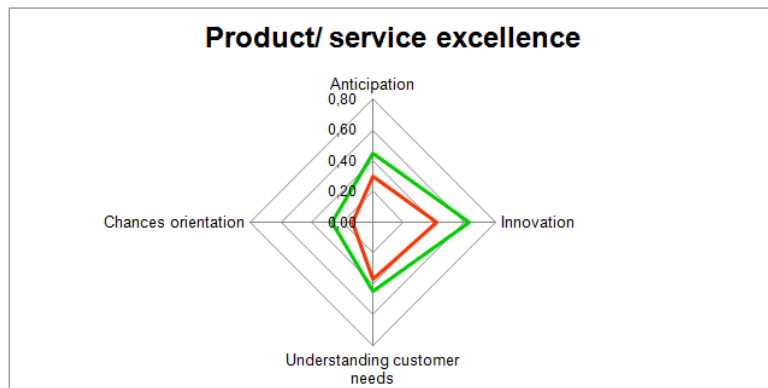


Figure 17: Representation through a *Spider Chart* of the dimension *product/ service excellence* (own presentation)

If a rated number of a factor within the table is changed, the lines within the *Spider Chart* simultaneously and equally change without additional support.

6.4 Transformation into *adaptability* and *resistance*

As it is explained in chapter 4.2, the factors have to be allocated either to the competence *adaptability* and/ or the competence *resistance* in order to be aware of the degree of organisational resilience within the business. With the basis of the allocations of the table within chapter 4.2, it is possible to calculate the contribution of the factors to the competences.

If a factor can completely be assigned to one competence, then the concerned competence receives 100%. Some of the factors have to be assigned to both competences, because they contribute to both. In this case, both competences receive 50%.

The real value of each factor is multiplied with the percentage of the competences. Furthermore, the maximum value is also multiplied with the percentages in order to be able to make a comparison again. Different charts are elaborated to show different numbers and ratios.

The first figure illustrates the ratio of *adaptability* and *resistance* regarding each dimension group. It serves merely the degree of the two competences within the dimension groups. For example, the graphic shows that the factors of the dimension *process reliability* rather contribute to *resistance* and the factors of the dimension *product/ service excellence* rather contribute to *adaptability*.

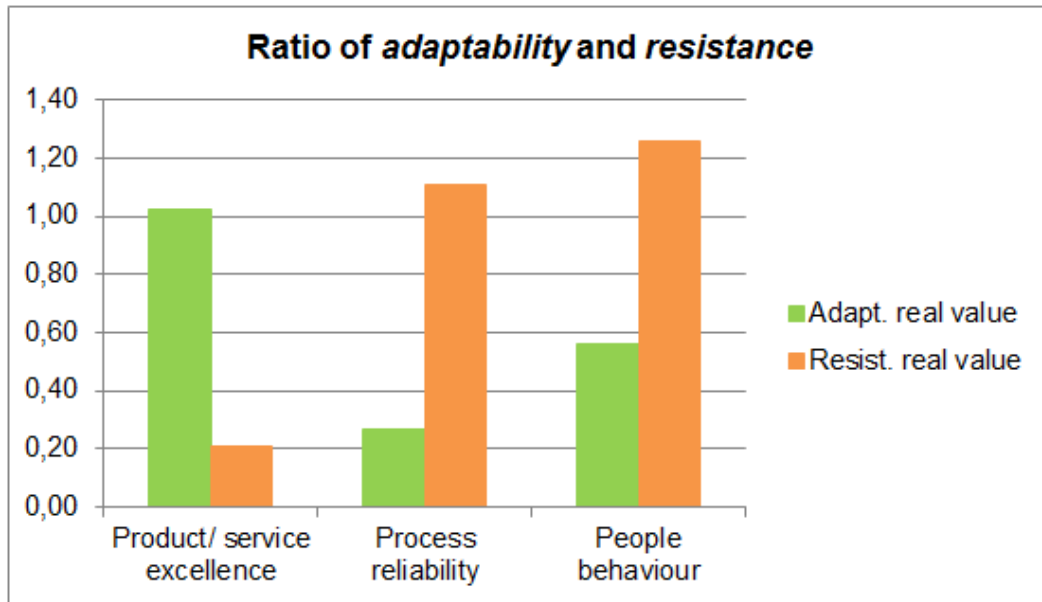


Figure 18: Representation of the ratio between *adaptability* and *resistance* (own presentation)

The next charts show the ratio between the real and the maximum value regarding *adaptability* and *resistance* within every dimension group.

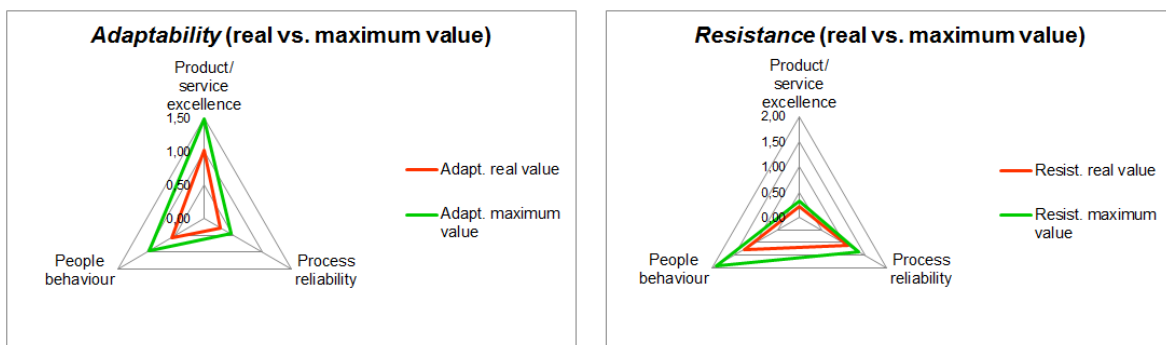


Figure 19: Representation of the ratio between the real and maximum value regarding *adaptability* and *resistance* (own presentation)

The last diagram gives an overview of the ratio between the overall real *adaptability* and *resistance* in % with reference to the rating of each factor. With the aid of this diagram, all figures are summed up, transformed into per cent and a definitive statement about the organisational resilience of a business can be made.

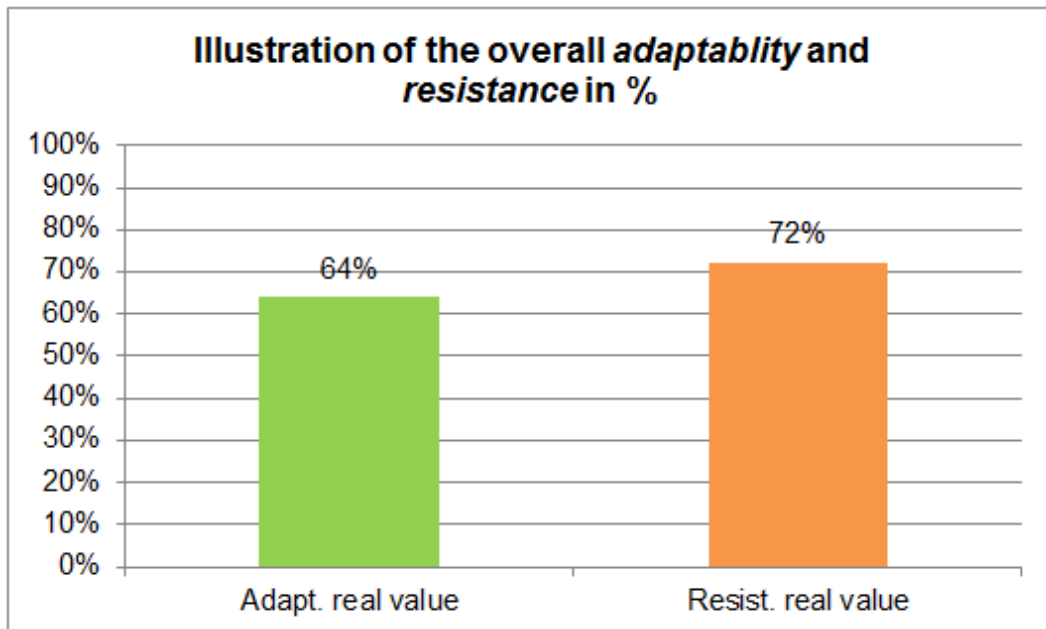


Figure 20: Overall representation of the real value of *adaptability* and *resistance* in % (own presentation)

With reference to the results of this diagram, the family business can set measures to raise its *adaptability* and/ or *resistance* in order to improve its organisational resilience. A table, which is headed below the figures in the Excel sheet, shows in detail, which factors contribute to which competence. Due to that, it is possible to work on the specific factors.

7 Research design

Secondary literature does not consist of uniform definitions or rather influencing factors regarding organisational resilience. Additionally, factors of organisational resilience with reference to family businesses have not been elaborated yet. Thus, secondary market research is not useful because the actual data is not sufficient and new data has to be surveyed, which requires a primary market research (cf. Bruns 2008, p. 121). Therefore, it is object of this master thesis to identify or rather filter and subsequently weight the most important factors regarding organisational resilience in family businesses. Due to that, the basis for the instrument, which consists of a self-assessment, a rating as well as a display method, is laid. In the course of that, family businesses are able to analyse themselves regarding different areas and can set adequate measures for areas with weaknesses afterwards. Moreover, the contribution to the competences *adaptability* and *resistance* also has to be elaborated in order to be aware how resilient an organisation is.

The research questions of chapter 1.4, which are listed again, have to be elaborated and answered within the empirical part too:

- How can organisational resilience in family businesses be systematically captured and represented?
- What does organisational resilience mean?
- What are the influencing factors of organisational resilience in family businesses?

7.1 Research method

For this master thesis, expert interviews are planned, which are a method of qualitative research. With the support of qualitative research, motives, attitudes, reluctance etc. can be gathered. The receipt into the perception of the interviewee is aimed (cf. ter Hofte-Fankhauser/Wälty 2009, p. 58).

The specific knowledge and experience of the interview partner and not the person itself are focused by the execution of an expert interview. For this reason, the choice of the experts depends on the research object. The selection of the experts is done by the researcher or the principal (cf. Meuser/Nagel no year, p. 4; Gläser/Laudel 2006, p. 9f.).

As the perception and knowledge of the interviewee are required, the expert interview is a personal interview, where usually no conversation guide is prepared. Due to that, an open and a relaxed conversation can take place. However, in practice conversation guides are used to roughly structure the interview. In general, the content of every interview is different due to diverse interview partners. The challenge for the interviewer is to stay neutral and avoid influencing the participant. Additionally, the interviewer is responsible for maintaining the flow of conversation, for deepening important aspects as well as for avoiding rather unnecessary contents (cf. Berekhoven/Eckert/Ellenrieder 2009, p. 89f.; Kuß 2012, p. 140f.).

The recording of the interview with the support of technical devices, like the mobile phone etc., is supporting for the interviewer. Due to that, the interviewer does not have to write down notes and is actively able to observe the gestures as well as facial expressions of the participant and avoids misinterpretation (cf. Berekhoven/Eckert/Ellenrieder 2009, p. 90).

The reason for the execution of expert interviews is that just persons with expertise in the areas organisational resilience as well as family businesses are capable of confirming, changing or adding necessary factors to the already theoretically elaborated instrument. With the support of the experts the instrument is built as basis for further applications and not performed. Thus, it is indispensable to execute expert interviews because the knowledge as well as the experience of the experts are needed to build an adequate instrument.

The already elaborated dimension groups and factors of the instrument are not shown to a part of experts regarding organisational resilience at first in order to avoid influencing them. After gaining insights of the experts the instrument is shown to them and thereby, it can be adapted. Therefore, the interviewer is able to use the already mentioned inputs of the experts while the common adaptation. However, experts regarding family businesses do not have knowledge or experience regarding organisational resilience and therefore, the elaborated the dimension groups and factors are shown and explained to them. With reference to family businesses, adaptations regarding factors and weightings can be made.

7.2 Research sample

Overall 16 interviews are planned. The interview partners are either experts regarding organisational resilience or experts regarding family businesses, which are persons, who work within family business institutes and have gained lots of knowledge as well as experience and actively concern about this topic. The sample is equally divided into eight interviews each.

The factors of organisational resilience can be defined, adapted or confirmed and the weights can be specified with the support of the two expert groups. Every expert regarding family businesses and three experts regarding organisational resilience are asked to select the most influencing factors for each dimension group. Therefore, they can tailor the already elaborated factors especially to the requirements and characteristics of family businesses.

Besides, the instrument, which consists of a self-assessment, a rating and display method, is tested by different family businesses. Overall, four test runs take place in order to check and to ensure the practical feasibility. Four family businesses, which have different sizes and are located in Styria, are chosen. The types and industries of the family businesses, which conduct the instrument, do not matter, because the instrument is prepared for an implementation in every kind of family business. However, small and medium-sized enterprises (SME) are asked to execute the test because the focus is set on SME.

7.3 Data collection

A conversation guide as basis and structure for the interview is developed. The interviews are recorded with an application of the mobile phone.

The interviews take place between 5th February and 2nd March 2018. Two different types of data collection are used, which depends on the places, where the experts live. If their position is not more than two hours by car away from Graz, a personal interview takes place. If the experts are positioned further afar, a tool, which is called "Skype", is used. However, for the interviews via "Skype" a good and working internet connection has to be ensured, otherwise the quality and level of the interview decreases.

As it is already mentioned, the interviews are recorded with an application of the mobile phone. Accordingly, every interview is transcribed. With reference to the statements of the experts the instrument is adapted.

The four test drives of the instrument are executed on 3rd April 2018. In case of certain issues with the feasibility, it can be accordingly changed.

Through the knowledge and experience of the experts, the instrument can be adapted within the empirical part and the following hypotheses can be discounted:

- H0: The elaborated dimensions are suited to support the visualisation of organisational resilience.
- H1: The factors of each dimension are allocated to the right dimension.
- H2: The chosen factors for the instrument are the most appropriate to support the assessment and display of organisational resilience.

8 Primary market research

As it is mentioned in the chapter before, expert interviews were used to generate knowledge and insights of various experts in order to be able to change, adapt or confirm the instrument. 16 expert interviews, eight with experts of organisational resilience and eight with experts of family businesses, were executed. Due to that, the instrument was adequately built and afterwards it can be used for the assessment and display of organisational resilience in family businesses, which is the goal of this master thesis.

The following table shows the statistical data of the experts.

Name	Gender	Age	Origin	Expert area
Expert 1	Male	63	Singapore	Organisational resilience
Colin Muller	Male	49	Australia	Organisational resilience
Markus Starecek	Male	41	Austria	Organisational resilience
Arlene Silva	Female	64	USA	Organisational resilience
Gregor Hoffmann	Male	43	Austria	Organisational resilience
Erica Seville	Female	45	New Zealand	Organisational resilience
Ingrid Preissegger	Female	46	Austria	Organisational resilience
Expert 4	Female	41	Sweden	Organisational resilience
Giovanna Campopiano	Female	32	Italy	Family businesses
Flören Roberto	Male	51	Netherlands	Family businesses
Arist von Schlippe	Male	66	Germany	Family businesses
Expert 2	Male	30	England	Family businesses
Peter Klein	Male	60	Germany	Family businesses
Expert 3	Male	39	Italy	Family businesses
Martin Duque	Male	55	Austria	Family businesses
Expert 5	Female	43	Finland	Family businesses

Table 12: Statistical data experts (own presentation)

The interviews lasted on average an hour. The interviews with the Austrian experts were personally conducted and the other ones via “Skype”. The interviews were executed in German and English with reference to the origin of the experts.

Different guidelines were used because two different target groups were addressed: experts regarding organisational resilience and family businesses. However, the interviews with the experts regarding organisational resilience were also divided into two parts. The first five interviews were used to generate knowledge about the definition and understanding for every elaborated factor. The second part was performed in the same way like the interviews with family businesses. The aim was to detect the most essential factors with reference to organisational resilience or family business or the combination of both, if the experts were able to connect it. For the first part of the interviews with experts regarding organisational resilience the structure below was applied:

1. Introduction of the author of this master thesis and of the thesis itself
2. Icebreaker questions regarding their profession etc.
3. Request for defining organisational resilience
4. Generation of additional dimension groups
5. Definition of every existing factor (and of additional ones)
6. Enquiry of their opinion in relation to the existing instrument
7. Weighting of the existing dimension groups and factors
8. Transformation of the factors into *adaptability or/ and resistance*

Within the interview with experts of family businesses the following procedure was used:

1. Introduction of the author of this master thesis and of the thesis itself
2. Icebreaker questions regarding their profession etc.
3. Generation of additional dimension groups
4. Choice and adaption as well as definition of the factors
5. Weighting
 - a. Weighting of the existing dimension groups and factors
 - b. Weighting of their individual classifications
6. Transformation of the factors into *adaptability or/ and resistance*

The experts received beforehand information regarding the dimension groups and factors to support the understanding. The conversation guidelines and information are headed within chapter 3 of the appendix.

Every interview was transcribed. Afterwards an Excel sheet was developed and applied as the basis for the analysis. The following tables were used:

- Definitions of organisational resilience
- Definitions of the factors
- Renaming and shifting of the factors
- Choices of the factors
- General weighting
- Individual weighting
- Transformation into *adaptability* or/ and *resistance*

The definitions were additionally headed and afterwards summarised within a Word document in order to be able to receive an overview of every definition of each factor.

The reason for using the Excel sheet as the basis was, that percentages and ratios were requested, the choices had to be summed up and an overview with direct comparisons was needed as well. Therefore, it was the best option for this specific primary research.

The *qualitative content analysis* is used for analysing and interpreting the results. This means, that data is systematically extracted and elaborated (cf. Naderer 2011, p. 416). The following table gives an overview of the method:

Openness	Area of application	Issues and limits
Strongly themed regarding data reduction	Huge amounts of data	Relatively inflexible structuring and classification criteria, potentially quantifying data

Figure 21: Contents of the *qualitative content analysis* (based on Naderer 2011, p. 418)

9 Analysis and interpretation of the results

Within this chapter the results of every part of the primary research are analysed, described as well as interpreted. Therefore, each sub-chapter consists of an analysis and interpretation part. The order of the sub-chapters is based on the contents of the conversation guidelines, which is headed in the chapter before.

9.1 Definitions

Within the first part of the interview, experts regarding organisational resilience were asked to define organisational resilience. During the generation and choice of dimension groups and factors, which are analysed and interpreted in the next sub-chapter, the experts were also asked to define each factor or rename it, if that was necessary in their opinion, which is also mentioned within this sub-chapter.

9.1.1 Analysis

Definitions organisational resilience

Subsequently, the word cloud represents the most important aspects or rather describing factors of the answers of the experts regarding organisational resilience:



Figure 22: Describing factors of organisational resilience (own presentation)

An expert, who researches since a very long time in this area, describes organisational resilience as the following:

“I describe resilience as the ability of an organisation to cope with times of adversity, so capturing opportunities, which emerged during times of rapid change. Therefore, they manage to get the supervening out of challenge. So, resilience is not only about being prepared and turning the things, which position your organisation to relief the change, but it is also about having adaptability and the confidence for the organisation to change and make the best out of it” (Seville 25.02.2018).

Definitions factors

All merged factors, which were elaborated within chapter 2.5, were defined by the experts in order to be able to develop a general definition of each factor. However, the definitions of every expert regarding the factors are not headed subsequently. The elaborated definitions, which are based on the statements of the experts as well as on the theoretical literature research, are directly summarised within the part of interpreting the definitions.

Besides, some experts stated, that not all factors are having the same weight or rather level. Therefore, they merged some factors as well. Two examples are headed below:

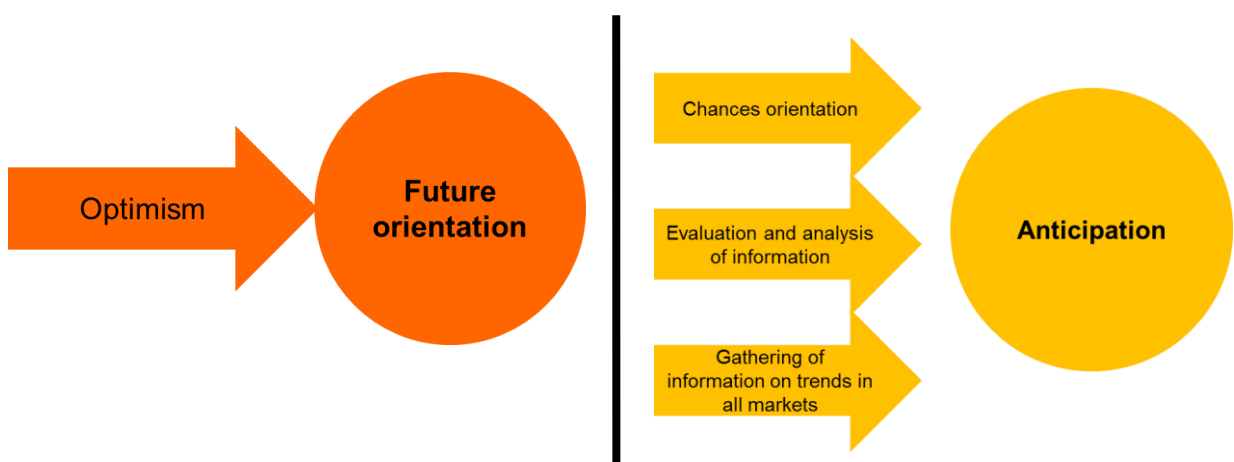


Figure 23: Two suggestions for merging factors (own presentation)

9.1.2 Interpretation

Definition organisational resilience

With reference to the various definitions by the experts regarding organisational resilience, a general definition for organisational resilience, which is based on the statements of the experts and theoretical sources, is elaborated:

Organisational resilience defines organisations, which are anticipating potential changes or crises, preparing for that with certain plans or strategies, adapting to such strains, surviving with minimum disruption and learning as well as even prospering out of it.

This definition was not especially developed for family businesses. However, with reference to two experts, the definition cannot be differentiated between family businesses and non-family businesses (cf. Silva 07.05.2018; Campopiano 08.05.2018). Ms Silva stated “*The only difference/ challenge for family businesses is running their businesses and making decisions without letting any negative family dynamics interfere or allowing the family inter-relationships to cloud their judgement*“ (Silva 07.05.2018).

Definitions factors

Subsequently, the elaborated and summarised definitions are listed. The mentioned changes of the names of the factors are headed as well. This means that the original indications are put into brackets and the new ones are headed next to them:

- Anticipation: Monitoring and evaluating the business’ environment (searching for trends and detecting threats before they arise) and implementing the gathered knowledge or rather adapting the own products or services
- Innovation: Creating something new through thinking outside of the box and therefore being one step ahead of the competition
- Diversity: Meeting the needs of the customers by offering various products and services
- Chances orientation: Taking risks and chances and willing to be open for new ideas – putting potentials into resources

- Understanding customer needs: Knowing what customers (latently) want and need by including them (having a good relationship to them and asking for their needs, ideas etc.)
- (Reputation risk) Reputation retention: Strengthening the reputation of the products (this is connected to the family as well) by communicating trust and honesty even if it means to take a loss
- Goal- and solution-orientation: Setting realistic goals and aiming to reach them (combining family and business goals) and by creating solutions for problems
- Supply chain: Successful management of all parts and steps within the supply chain (having goods relationships to suppliers, relying on them – but being not too dependent and having alternatives)
- Governance: Structure of owners and leadership (having a structure, decision making, controlling or monitoring rules and organs)
- Business continuity: Management system, which should focus on the core business and processes in order to be able to constantly sell products or services without disruptions
- Information security systems: Protecting the business' information and knowledge to avoid stolen data
- Operational processes to ensure quality control of products and services: Ensuring and controlling the quality of products and services through certain process steps
- Operational process to ensure health and safety: Workplace health management (accident prevention, clean environment, health promotion)
- Operational process to manage environmental impact: Being prepared and equipped for environmental disasters like frost, storms, earthquakes etc.
- (Focusing on mistakes) Learning from mistakes: Learning from negative experiences and happenings (also from generation to generation)
- (Financial aspects) Level of equity ratio: Having a certain level of equity ratio in order to be able to finance emerging expenses and to stand financial set-backs
- Resource management: Effective and efficient management of the available resources (possessing and shifting resources in times of changes or crises – flexible handling of the resources)

- (Ability to build a structure very fast in turbulent environments) Flexibility: Being able to adapt structures and processes without causing too much disruption within the business, if market changes or crises arise
- Modularity: Problems or failures do not have an impact to the whole system due to interfaces and borders
- Redundancy: Protecting and multiple securing core processes or elements of a system so that in case of a disruption other processes or elements can cover the core ones
- Information- and knowledge-management: Generating and sharing knowledge on a regular basis to keep everyone up-to-date and involved
- Future orientation: Having a long-term view and thinking beyond financial periods to support the sustainability of the business
- Network-orientation: Having a good relationship to all stakeholders (family, employees, suppliers, customers, supporting institutes etc.) and sharing knowledge as well as ideas within this network
- Self-responsibility: Sense of responsibility of a person (willingness to take responsibility for the own actions, taking decisions, caring about himself)
- Acceptance: Accepting immutable situations and keep going with this fact
- Dynamic leadership: Supporting diverse employees (caring about them, giving visions and orientation, inspiring) and adapting the leadership to changing situations
- Corporate culture: Collective values and vision, which people share and that reasons a similar mode of behaviour
- (Ability of flexible using of routines) Flexible use of routines: Applying steps in a flexible way with reference to specific situations
- Ability to learn: Learning from mistakes and in the course of that acquiring new competences, which supports the dealing with challenges
- Optimism: Positive attitude of employees towards daily tasks, challenges, approaches etc. in order to take chances and have a high performance
- Activity orientation: Motivation and willingness to execute activities in order to achieve goals

- Non-commercial engagement: Social responsibility towards the environment and region
- (Awareness, training and audit) Training: Providing training for employees and giving them the chance to strengthen their skills
- Orientation: Orientation and in the course of that adaption to customer needs
- Employee identification with the business vision: Employees, who identify with the business, are loyal and proud to work for the business (which can also support the willingness to achieve success)
- Cooperating: Acting in concert, supporting each other and having a team orientation
- Well-trained and (appropriately) skilled staff: Employees, who have the necessary skills for the required tasks
- Respecting skilled knowledge and competences: Delegating responsibilities if someone else has the expertise or experience for this area
- Trust: Trusting and relying on the other members within the business by listening to each other (without questioning)
- Ingenuity: Being creative and open-minded for new possibilities
- Guidance: Performance of leading people

As it is mentioned at the beginning, some designations of the factors were changed by the experts, because they perceived the actual one not as adequate. Some examples regarding the changing of the names are listed below:

- “Reputation risk” was replaced by “reputation retention” because Ms Preissegger said that this term describes a risk and not what to do for achieving *product/ service excellence* and therefore, it has to be changed in order to have the same meaning and basis. (*cf. Preissegger 26.02.2018*).
- Furthermore, some experts criticised the term “focusing on mistakes” and renamed it into “learning from mistakes”. It means to Mr Hoffmann, that the focus on mistakes limits the business and develops insecurity (*cf. Hoffmann 16.02.2018*).

- The term “flexibility” was chosen instead of “ability to build a structure very fast in turbulent environments” because a few experts confirmed, that the term was too long and that “very fast” (*cf. Flören 23.02.2018*) would not fit (*cf. Flören 23.02.2018; Expert 3 27.02.2018*).
- “Ability of flexible using of routines” was contradictory for some experts (*cf. Muller 07.02.2018; Hoffmann 16.02.2018; Duque 28.02.2018*). Therefore, the renamed it and out of these answers, the term “flexible use of routines” was chosen.

The merging of the factors, which is mentioned within the analysis of the factors, was just considered for two factors. The reason for not executing the merging for the other factors is that some factors, like optimism, were named by several experts as a single factor. Therefore, just two factors were subordinated to “anticipation” and their definition was implemented into it:

- (Information gathering on political, economic and industry trends in all markets) Development of knowledge through political, economic and industry trends in all markets
- (Evaluation and analysis of the gathered information) Implementation of the developed knowledge

9.1.3 Conclusion of the definitions

With reference to the elaborated definition of organisational resilience, which is based on theory and experts, the research question “what does organisational resilience mean?” is answered.

Furthermore, the general elaborated definitions of the factors are used within the instrument to generate a common understanding for the executing family businesses.

The next sub-chapter shows that further factors were added. However, not all definitions of the extra factors are mentioned within this sub-chapter because just a few factors are relevant for the instrument. Therefore, the definitions of the chosen additional factors are listed afterwards.

9.2 Individual selection of dimension groups and factors

This sub-chapter consists of the individual selections and classifications regarding the dimension groups and factors of the experts.

Due to the fact, that the experts were asked to choose the most important factors out of every dimension group, add necessary ones, add additional dimension groups and factors and shift factors, many different classifications were developed. Overall, eleven different classifications (dimension groups including factors) exist. Not every expert conducted an individual classification, because, as it is already mentioned, the first five experts regarding organisational resilience were not asked to choose the most important ones.

Consideration should also be given to two experts regarding organisational resilience, who were not asked to choose the most important factors. They added the dimension group “culture” with subordinated factors (*cf. Starecek 12.02.2018; Hoffmann 16.02.2018*). Therefore, it is analysed, that eight out of 13 people added this dimension group (n=13).

9.2.1 Analysis

Selected dimension groups

At first, the frequencies of existing and added dimensions groups are evaluated. The figure below illustrates which or rather how often the existing dimension groups were chosen by the 13 executing experts. Moreover, the figure shows which dimension groups were added and how often they were mentioned. However, within the following points the results are summed up before. “N” stands for the number of mentions per option:

- Dimension group *product/ service excellence* as well as dimension group *process reliability* were mentioned 13 out of 13 times.
- Dimension group *people behaviour* was mentioned twelve out of 13 times.
- The following dimension groups were added: *culture* (N=8), *leadership* (N=2), *characteristics of family businesses* (N=2), *organisational behaviour* (N=1), *social embeddedness* (N=1), *financing* (N=1) and *orientation of the acting persons* (N=1);

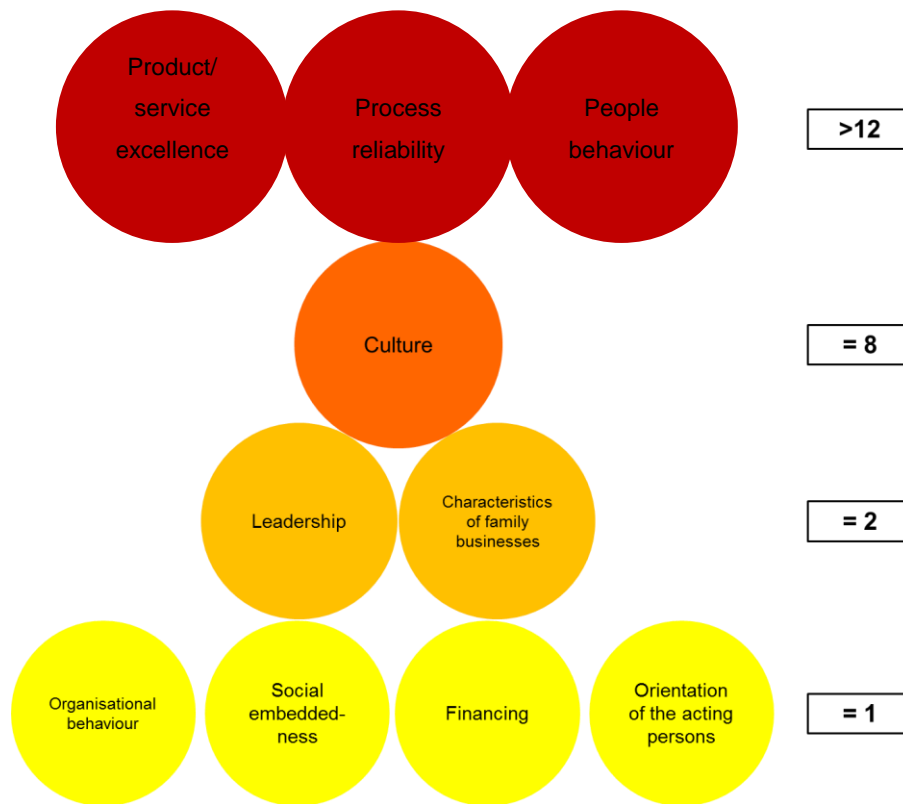


Figure 24: Number of indications regarding each dimension group (own presentation)

Following some aspects with reference to the selection of the dimension groups of the experts regarding organisational resilience are headed:

- The dimension group “culture” was added four out of five times.
- One expert added an additional dimension group, which was not named by others: “social embeddedness”. Additionally, she did not use the dimension group *people behaviour* and replaced it against “organisational behaviour” (cf. *Seville 25.02.2018*).

Subsequently, a few aspects of the experts regarding family businesses are listed:

- The dimension group “culture” was added four out of eight times.
- The dimension groups “leadership” and “characteristics of family businesses” were added two times each.
- Besides, “financing” as well as “orientation of the acting persons” were named once each.
- Furthermore, the dimension group “culture” was mentioned as “family culture” (cf. *Expert 3 27.02.2018*), which means that three specific family business related dimension groups were added.

The dimension group *people behaviour* was renamed by some experts, which is mentioned below. Furthermore, the additional named dimension group *culture* received various designations, which is headed as well.

Dimension group *people behaviour* was named twelve times (n=12) in total and the numbers (N) next to each designation stand for the number of denomination.

1. People behaviour: N=8
2. Individual behaviour: N=1
3. Individual strengths: N=1
4. Human factors: N=1
5. Social capital: N=1

Expert 4 said for example *“I would use another name for the dimension group people behaviour, because some factors are not declared as behaviour, in my opinion” (Expert 4 01.03.2018)*. Due to the fact, that four experts changed the name without knowing from each other, this has to be considered. The term “individual strengths” is chosen as the most appropriate designation with reference to the sub-ordinated factors.

Dimension groups *culture* was named eight times (n=8) in total and the numbers (N) next to each designation stand for the number of denomination.

1. Culture: N=4
2. Business culture: N=2
3. Organisational culture: N=1
4. Family culture: N=1

Selected factors

Within this area of the analysis, the factors of each dimension group are separately observed. Besides, some single factors are additionally emphasised with reference to their importance or number of denomination. In addition, similarities or differences of the two different expert groups are headed.

The tables including the number of denomination per dimension group and in total are headed within chapter 4 of the appendix.

The average indications of factors within each dimension group are: Product/service excellence: 3.5; Process reliability: 5; Individual strengths: 4.6; Culture: 4.5; Leadership: 4.5; Organisational behaviour: 4.5; Social embeddedness: 4; Characteristics of family businesses: 4.5; Financing: 3; Orientation of the acting persons: 4;

Product/ service excellence

The results of this dimension group show the most similarities and hardly any deviations. This means, that it is clearly obvious, that the following four factors are the most relevant ones:

- Understanding customer needs
- Innovation
- Anticipation
- Reputation retention

The factor *understanding customer needs* was chosen eleven out of eleven times. This can also be deduced from existing literature regarding family businesses (cf. Wimmer 2007, p. 36 - 38).

Furthermore, *innovation* was mentioned ten out of eleven times, which signifies the relevance of this factor.

Nearly no differences regarding the two expert groups are identifiable. However, the factor *reputation retention* was named in relation more often by experts regarding family businesses. This result can be researched within literature sources as well. The reputation of the family business and its products or services has a high relevance (cf. Wimmer 2007, p. 36 - 38).

Process reliability

The results of this dimension group can be analysed in a simple way as well. This means, that some factors were chosen very often, which supports the relevance and importance.

Factors, which were chosen very often within this dimension group, are:

- Resource management
- Supply chain
- Flexibility
- Goal- and solution-orientation

Three factors were additionally added. Due to the fact, that these factors were just added once, they are not considered:

- Doing things right directly at the first time
- Strategic planning process
- Strategy development

Two factors are considered due to the differences of the two expert groups: *financial aspects* and *governance*. These two factors were just chosen by experts regarding family businesses. A more detailed analysis is headed below:

- **Financial aspects:** The factor itself was mentioned a few times. Once “level of equity ratio” was used as the main importance for family businesses out of financial aspects (*cf. Duque 28.02.2018*). Moreover, “level of equity ratio” was mentioned by an expert regarding family businesses within the added dimension group “financing” (*cf. von Schlippe 20.02.2018*). They explained, that family businesses are mostly equity-financed, which provides strengths. This is caused by the limited access to the capital market (*cf. von Schlippe 20.02.2018; Duque 28.02.2018*). The other experts did not change the name or contained this broad and very general factor.
- **Governance:** The factor was chosen by six out of eight experts. Due to the fact, that just family businesses mentioned it, it is obvious, that this factor is characteristic for family businesses. One expert described it as “*It is for me, the internal control. This means, governance within the board and the management structure or within the reporting line. So, I think governance is there in many areas, like audits, so the key areas. Summarised I can say, that governance involves everything which is decision making*” (*Expert 2 23.02.2018*). Another expert said that governance supports the control of the

business in order to implement effective and efficient processes of products and services. Moreover, it can partly overlap with leadership (*cf. Duque 28.02.2018*).

Individual strengths

This dimension group covered the most factors. Many factors out of it were shifted to the added dimension groups. Moreover, some factors were added:

- Decision making ability
- Commitment
- Change-readiness
- Shareholders

Lots of factors were mentioned once or twice in other dimension groups. Afterwards, these factors of this dimension group, which were more often added to other dimension groups, are listed:

- Optimism: This factor was most commonly used within *culture*.
- Future orientation: It is allocated to many different dimension groups.
- Network-orientation: It is allocated to many different dimension groups.

The factors below were rather chosen by experts regarding family businesses within this dimension group:

- Trust
- Ability to learn
- Well-trained and skilled staff
- Respecting skilled knowledge and competences
- Ingenuity

The factor *future orientation* was rather chosen by experts regarding organisational resilience within this dimension group.

Culture

Overall, this dimension group was added eight times without support or hints. This shows that it definitely influences the areas of a business or rather a family business.

Two out of four experts regarding organisational resilience, who added this dimension group, mentioned additional factors, which are headed subsequently:

- Mistake and learning culture
- Usage of expert knowledge
- Open space for experiments
- Dialogue culture
- Social responsibility

Three out of four experts regarding family businesses added factors, which are listed afterwards:

- Transparency
- Balance of interest:
- Differentiated personnel policy
- Sense of belonging
- Pride
- Trans-generational entrepreneurship
- Aggressiveness
- Sense of responsibility

The factor *team orientation* was mentioned once by an expert of each area and was described as aiming team collaboration and success instead of handling tasks or projects alone (cf. Klein 23.02.2018; Preissegger 26.02.2018).

Leadership

As it is already mentioned, two experts regarding family businesses added this dimension group and in the course of that, also some additional factors, which are listed below:

- Communication
- Monitoring

9.2.2 Interpretation

Selected dimension groups

In total, ten dimension groups, three existing and seven added ones, were worked out. However, not all dimension groups are included in the instrument because mostly just one or two person(s) added a specific dimension group and the mentioned factors within the dimension groups partly overlap, which would complicate adequate allocations. In addition, ten different dimension groups would demand too much from the executing family businesses. Subsequently, each dimension group is listed with an explanation why it is used as basis or not. The chosen ones are highlighted as bold:

- **Product/ service excellence:** This dimension group is still used as a part of the classification. 13 out of 13 experts chose it. It was renamed once, but this is not significant enough.
- **Process reliability:** This one is included again too. 13 out of 13 experts chose it. It was also renamed once, but this is not significant enough.
- **Individual strengths:** The third original dimension group is a part of the instrument. Twelve out of 13 experts chose it. As it is already mentioned, it was renamed four times, which means that a third of the experts wanted to rename it and therefore the name was changed.
- **Culture:** This is the first added dimension group, which is incorporated into the classification. Eight out of 13 experts added it without knowing about the answers of the other experts.

- **Leadership:** This is another added dimension group, which is included. Two out of 13 experts added it. Even if just two experts chose it, some literature sources exist, which also include it as a main part of a model (cf. Trigon Entwicklungsberatung 2017; Resilient Organisations 2018). Moreover, the model, which is used as a benchmark tool for organisations by BSI Group, is extended by the dimension *leadership* (cf. BSI Group no year b). Therefore, it is chosen as a relevant dimension group.
- Characteristics of family businesses: It is not selected. Two out of 13 experts added it.
- Organisational behaviour: This one is neither chosen. Just one out of 13 experts added it.
- Social embeddedness: This dimension group is not selected because just one expert included it.
- Financing: It is not included because just one out of 13 experts added it.
- Orientation of the acting persons: The last added dimension group is no part of the classification because just one out of 13 experts added it.

Summarised, the following dimension groups build the basis for the classification:

1. *Product/ service excellence*
2. *Process reliability*
3. *Individual strengths*
4. *Culture*
5. *Leadership*

Selected factors

The factors, which were at least mentioned five times, are considered. Otherwise, too much factors would be included. Besides, this means that a factor is chosen, if it is named five times in total regardless of whether the factor was named five times within one dimension group or not. However, some added factors are not mentioned five times, because they were not given and did not come to the mind of all experts. Hence, some additional factors are considered.

Some factors are merged due to the same meaning but different designations. However, this is subsequently described. At the end of this part the definitions of the merged factors are headed as well.

Product/ service excellence

As it can be gathered from the tables within chapter 4 of the appendix, four factors of this dimension group were directly mentioned within the group more than five times by the experts. The numbers within the brackets show the overall indications, if the factors were named in other dimension groups as well:

- Understanding customer needs: N=11
- Innovation: N=10
- Anticipation: N=6 (n=7)
- Reputation retention: N=6

Due to the very clear results, these four factors are chosen as the most influencing factors for the first dimension group.

Process reliability

Within this dimension group six factors were at least mentioned five times:

- Resource management: N=10
- Supply chain: N=7
- Governance: N=6 (n=7)
- Flexibility: N=5
- Equity ratio: N=4 (n=5)
- Goal- and solution-orientation including outcome-orientation: N=3 (n=6)

The original used term “financial aspects” was replaced by *equity ratio*. This can be reasoned by two expert statements, which is already described within the analysis. The factor itself was very broad and hard to rate. With reference to the results of two experts regarding family businesses, it was decided to change and specify it.

The factor *goal- and solution-orientation* is merged with the factor “outcome-orientation”, because if the aimed outcome is reached, the goal is achieved as well. Furthermore, “outcome-orientation” was used two times as the term instead of *goal- and solution-orientation* (cf. Starecek 12.02.2018; Campopiano 14.02.2018).

Individual strengths

Within this dimension group some factors were merged, which is explained after the numeration of the factors, which are chosen for this dimension group:

- Sense of responsibility including self-responsibility and decision-making ability: N=7 (n=8)
- Motivation to learn including ability to learn, willingness to learn and change-readiness: N=6 (n=8)
- Commitment including employee identification with the business vision and sense of belonging: N=5 (n=9)
- Trust: N=4 (n=10)
- Ingenuity: N=4 (n=5)
- Well-trained and skilled staff: N=3 (n=5)

Sense of responsibility arises as the general term for three factors with a collective meaning. The definition stays the same.

The factor *motivation to learn* emerges through three factors with an impact into the same direction.

The designation *commitment* is used as the summarising term for three factors as well. A new definition is elaborated at the end of this sub-chapter.

The factor *trust* was mentioned very often within certain dimension groups. However, it was most frequently used within this dimension group.

Culture

This dimension group consists of four important and influencing factors, which are partly merged and listed below:

- Team orientation including cooperating: N=3 (n=5)
- Optimism: N=3 (n=5)
- Network-orientation including family ties and local business network ties: N=2 (n=8)
- Mistake and learning culture: N=1 (n=2)

Team orientation arises through two different factors with the same definition, which was already elaborated.

The factor *network-orientation* was named six times in total and the other two factors were named one time each. However, network-orientation was just mentioned two times within *culture*. The following points show the division in order to support the understanding for allocating it to this dimension group:

- Individual strengths: N=1
- Culture: N=2
- Social embeddedness: N=2
- Characteristics of family businesses: N=2
- Orientation of the acting persons: N=1

Due to the fact, that the factor was mentioned two times within *culture* and the dimension groups *social embeddedness* and *characteristics of family businesses* are not relevant, but can partly be allocated to *culture*, it is the most appropriate one.

Mistake and learning culture was added by two experts. The reason for allocating it to *culture* is, that this is a general attitude within a business and therefore, it fits into this dimension group as the name describes as well.

Leadership

The last dimension group includes four factors as well, where some are merged as well:

- Communication including transparency: N=2 (n=3)
- Respecting skilled knowledge and competences including usage of expert knowledge: N=1 (n=6)
- Open space for experiments: N=1 (n=2)
- Future orientation including long-term-orientation and trans-generational entrepreneurship: N=0 (n=7)

Communication was named two times within this dimension group and was merged with the factor “transparency”. The information and knowledge inside the company has to be transparently communicated in order to keep everyone up-to-date, create a good basis for the relationship and cooperation.

The factor *respecting skilled knowledge and competences* was merged with “usage of expert knowledge” because it has the same meaning. Even if it was just mentioned once within this dimension group, it is a leadership-task (cf. Weick/Sutcliffe 2010, p. 10 - 18).

The factor *open space for experiments* was added once in this dimension group and once in *culture* by two experts. The leader is entitled for giving employees the space. This factor is depending on the leadership-style and therefore, it was allocated into this dimension group.

Even if *future orientation* or rather “long-term-orientation” or “trans-generational entrepreneurship” were not mentioned or added within this dimension group, the summarising factor *future orientation* was allocated to this dimension group. The entrepreneur or leader within a family business has a long-term view and aims sustainability over many generations (cf. Hennerkes/Kirchdörfer 2015, p. 49; Wimmer 2007, p. 34).

Definitions

Some factors were added and some factors were merged and hence, the necessary definitions are headed below to generate a basic understanding within the instrument:

- Motivation to learn: Learning from mistakes and in the course of that acquiring new competences, which supports the dealing with challenges as well as the willingness to gain knowledge and to change something
- Commitment: Employees, who identify with the business, are loyal and proud to work for the business (which can also support the willingness to achieve success) and have a sense of responsibility and engagement towards the business
- Mistake and learning culture: Enabling of learning chances through mistakes and not focusing on mistakes and trying to detect the guilty one (cf. Wehner 2015).
- Communication: Type of communication within the business (sharing of information to support each other, respectful treating, being honest, working together etc.)
- Open space for experiments: Enabling open space for being creative, developing new ideas, improving structures or processes as well as trying something new

9.2.3 Conclusion of the dimension groups and factors

As it is mentioned within this sub-chapter, some characteristics regarding family businesses can be detected and are summarised again:

- Overall eight experts regarding family businesses and just three experts regarding organisational resilience were asked to select the most important factors.
- The dimension group *leadership* is part of the instrument and was just added by experts regarding family businesses.
- The factors *governance* and *financial aspects* were just chosen by experts regarding family businesses, which specify the instrument into the direction of family businesses.

- The factors *trust*, *ability to learn*, *well-trained and skilled staff* and *ingenuity* are part of the dimension group individual strengths and were rather used by experts regarding family businesses. Besides, this dimension group consists just of two more factors.
- Furthermore, the results of the primary market research can be confirmed and aligned with literature resources regarding family businesses. This is partly elaborated within chapter 4.1 as well.

The instrument including the final dimension groups and factors is headed below. The numbers are randomly chosen, the weighting is not considered and it is just used for a general overview:

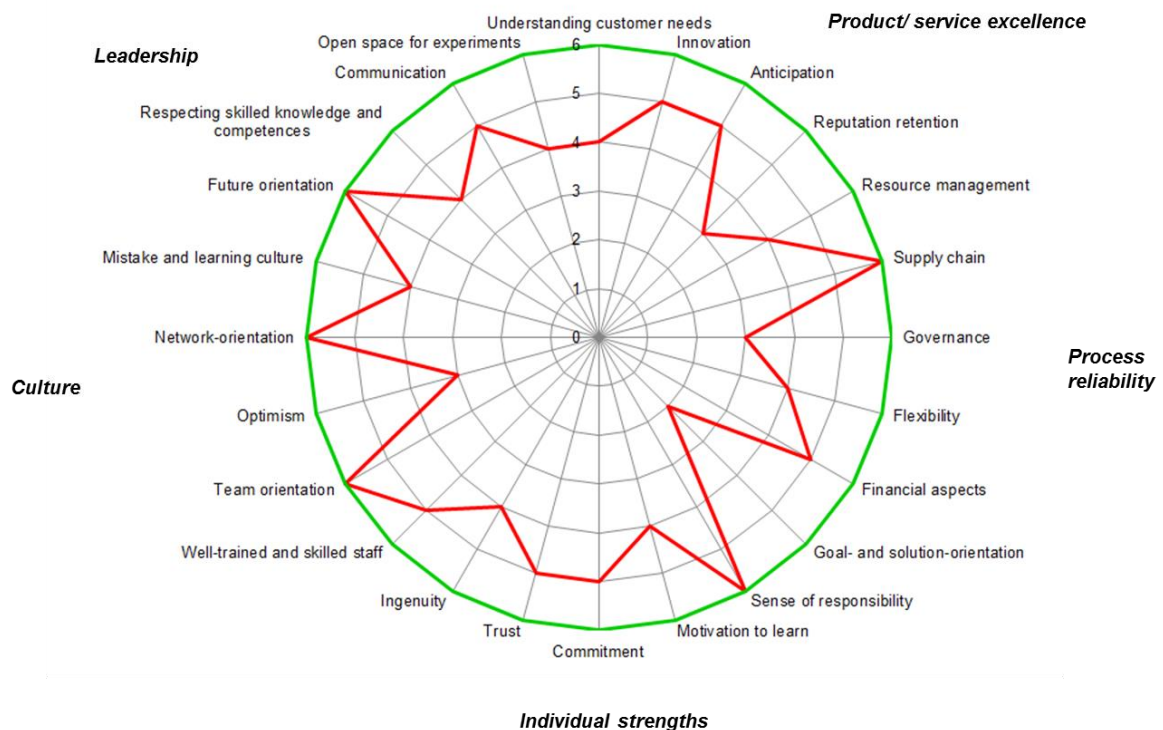


Figure 25: Dimension groups and factors of the final instrument (own presentation)

Due to these results, the research question “what are the influencing factors of organisational resilience in family businesses?” is answered.

9.3 Weighting of the dimension groups and factors

The next part of the interview was the weighting of the dimension groups and factors.

9.3.1 Analysis

The three experts of organisational resilience, who were asked to choose the most important and influencing factors, and the experts regarding family businesses had to execute the weighting two times. This means, that they had to weight the classification, which was developed before, and their own classification. The weighting of the existing dimension groups and factors was made in order to potentially support the alignment of the results of the individual weightings. However, the general weighting does not support the individual weighting of the factors, because the instrument had to be adapted in many areas. Therefore, these results are not interpreted or used within this master thesis with one exception:

The general weighting regarding the three dimension groups shows, that *people behaviour* (43%) received the highest percentage. One expert said “*You can have the best product, but if your employees are not good and are not able to work right, then it does not work. People are influencing everything*” (Expert 1 05.02.2018). However, another expert weighted process reliability as the most important and reasoned it with “*Because first of all, there is business continuity in there and also there are the resources and financing in it*” (Flören 23.02.2018).

With reference to the huge data amount, the individual weightings of each expert cannot be analysed or mentioned within this master thesis. Nevertheless, a few facts are standing out and are summarised below:

- Understanding customer needs: This factor was overall weighted really high and nearly the half of the experts weighted it with minimum 40%.
- Ms Seville chose just *understanding customer needs* and *anticipation* within dimension group 1 and weighted both as 50% (cf. Seville 25.02.2018).
- Another expert assigned 50% to the added factor *trans-generational entrepreneurship* within *culture*. He mentioned three factors in total for this dimension group (cf. Expert 2 23.02.2018).

- A further expert allocated 50% to *dynamic leadership* within *individual strengths* and mentioned four other factors also within this dimension group. Furthermore, he assigned 70% to *innovation* within the first dimension group, but just chose *understanding customer needs* as a second factor (cf. Flören 23.02.2018).

As it can be abstracted by the aspects above, the weighting within the instrument cannot be executed proportionally because the indications of the factors within the certain dimension groups are not equal. On the one side, it is analysed, that two experts chose ten or rather eight factors within the first two dimension groups (cf. Preissegger 26.02.2018; Duque 28.02.2018). Therefore, the single factors received fewer percentages within these two dimension groups. On the other side, some experts just chose two or three factors within one dimension group, which leads to higher percentages.

9.3.2 Interpretation

Subsequently, the individual weightings are interpreted. With reference to many different views and overlapping choices, the overall sum of the percentages of each dimension group and factor is divided by the number of total indications. This means, that the allocations to the various dimension groups are not regarded. Even if this approach does not consist of proportional indications per factor within each dimension group, which leads to a little distortion, it is chosen as the most suitable solution.

Due to the fact, that a new classification was elaborated and factors were shifted, added and changed, a new calculation for the weights was necessary. The following structure was also used for the dimension groups:

- The weights of the factors within the dimension group were summed up.
- Then the weight of each factor was divided by the total sum of the dimension group and multiplied with 100 in order to have 100 as total sum and to receive a new weight, which is proportional.
- The factors, which were merged, received a new individual weight before, which was executed in the same way like before: counting up the total weights and dividing it by the number of denomination.

The following figure shows the distribution of the weights of the five dimension groups as a demonstration:

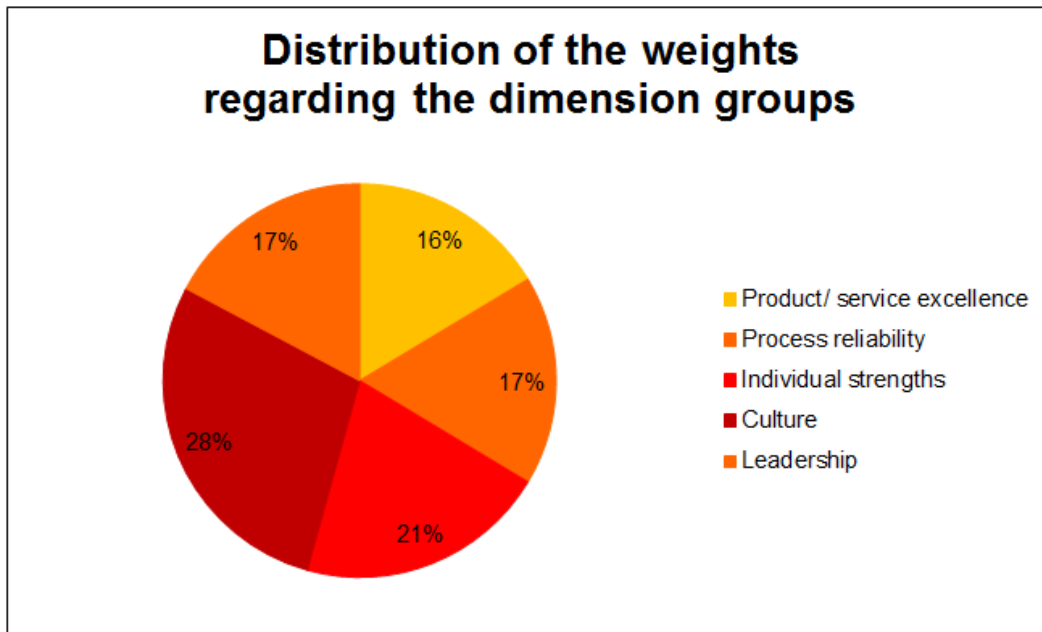


Figure 26: Distribution of the weights of the dimension groups in general (own presentation)

The other figures and the tables, which show the percentages and transformations, are headed within the appendix in chapter 5.

9.3.3 Conclusion of the weighting

Even if a general approach regarding the weighting of every factor was used, the instrument should not be executed with those weights. The weighting regarding the dimension groups and factors should be conducted again because the factors within the various dimension groups were not proportionally mentioned by the experts.

Therefore, every interviewee should receive the same classification for the execution of the weighting in order to have the same initial situation, which supports the correctness of the ratios. Due to that, the weights are obvious and comparable.

9.4 Transformation into *adaptability* and *resistance*

9.4.1 Analysis

Each chosen factor had to be allocated to *adaptability* or/ and *resistance* by the experts. Therefore, each factor received an overall percentage regarding *adaptability* or/ and *resistance*. The experts had to categorise the existing factors, which were chosen for the instrument on the theoretical basis, as well as these ones, which were additionally chosen or added by them. Due to that step, the executing family business is aware of the degree *adaptability* and *resistance* within the business and in the course of that, of organisational resilience, if it conducts the instrument.

These two competences are described within chapter 2.1 and were explained to the experts in order to provide a general understanding.

Four out of 16 experts have not executed this part, because they did not perceive it as relevant and necessary. Some reasons are headed below:

- One expert stated *“I think you limit yourself with this classification. I do not think that it is necessary to transform it into adaptability and resistance. You cannot be resilient without adaptability and resistance, but you can also not be resilient without knowledge etc. You need also other factors for resilience not just adaptability and resistance. I do not see why adaptability and resistance are the core points of resilience”* (Flören 23.02.2018).
- Another expert said, that the border of these two competences is fluent and that he cannot allocate it (cf. Starecek 12.02.2018).
- Mr von Schlippe explained that he would not do that, because organisational resilience does not just consist of those two aspects. Besides, he assumed, that an additional thesis would be necessary for an exact and detailed differentiation (cf. von Schlippe 20.02.2018).

The reasons for the transformations or rather allocations of the factors cannot be analysed because it was not requested within the interview. The interview lasted anyhow about an hour on average.

9.4.2 Interpretation

The chosen factors, which are the basis for the weighting and the rating of the instrument, build the basis for the transformation into the competences *adaptability* and *resistance* as well. As it is mentioned above, the results cannot be analysed in a qualitative way, because reasons were not requested. Therefore, the distribution of the percentages regarding each factor was summed up and afterwards the ratio between *adaptability* and *resistance* of each factor could be calculated.

The results of each factor are headed within the appendix in chapter 6.

The following figure shows the percentages regarding the allocations to *adaptability* and *resistance* in total:

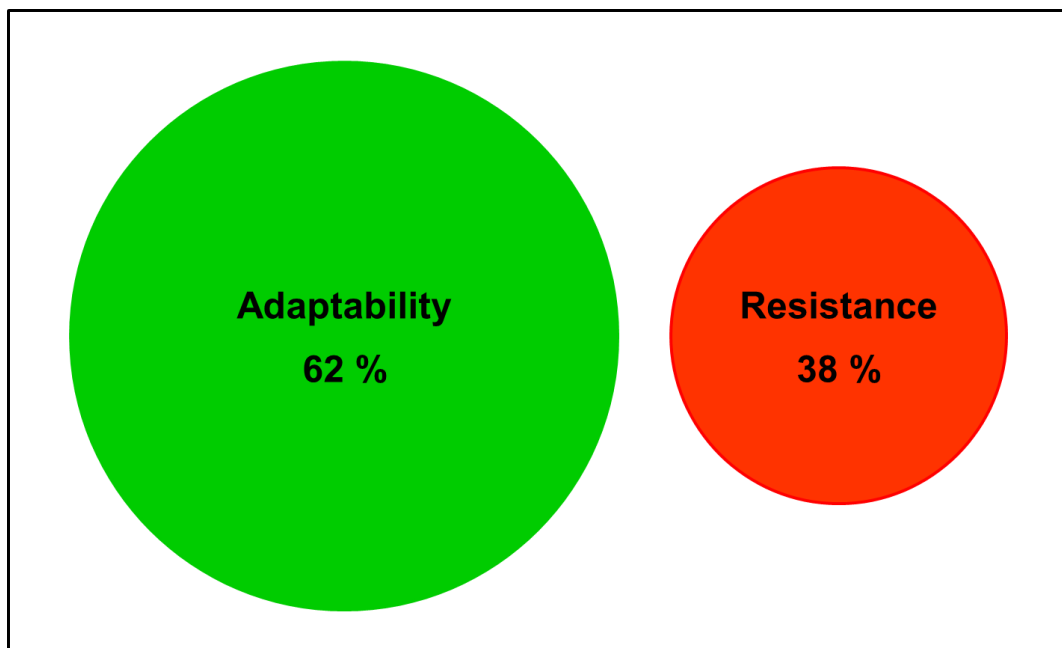


Figure 27: Overall percentages regarding the allocations to *adaptability* and *resistance* (own presentation)

9.4.3 Conclusion of the transformation into the competences

The elaborations of this sub-chapter regarding the two competences can be used a basis, which shows, that the factors rather contribute to *adaptability*.

However, as it is already mentioned by Mr von Schlippe, an additional research is required in order to have an exact differentiation between *adaptability* and *resistance* for all factors (cf. von Schlippe 20.02.2018).

9.5 Conclusion of the primary market research

At the end of the analysis and interpretation of the interviews as well as conclusions of each sub-chapter, a general conclusion of the primary market research is provided.

As it is already elaborated within sub-chapter 9.2, the instrument consists of some factors, which characterise family businesses. Therefore, the instrument has a family business focus. However, it has to be said, that lots of factors support the organisational resilience of non-family businesses as well. As a consequence, it cannot be claimed, that this instrument can just be applied by family businesses.

This elaborated instrument contains specific factors, which have to be considered and managed in a good way in order to support the organisational resilience of a family business. With the help of this instrument, the family business is aware of the important areas for its sustainability. Through the self-assessment including the maximum value the family business knows, which factors have to be improved. As a result of it, the family business can develop an individual action plan. Due to that, the main objective of this master thesis is achieved and main research question of this master thesis is answered.

10 Testing of the instrument

The testing of the instrument was conducted on 3rd April 2018 in order to confirm the practical feasibility and to ask for feedback, improvements and ideas. The tests lasted between 30 and 40 minutes including a short description of the instrument and the feedback. This means, that the test run itself lasted about 10 minutes. Besides, the instrument was shown to the participants on a laptop and the individual ratings were directly filled in.

Four different family businesses were asked to execute the instrument and rate themselves with reference to their own business situation. Subsequently, the statistical facts of the family businesses are listed:

	Participant 1	Participant 2	Participant 3	Participant 4
Position of the executing person	CEO	CEO	CEO	CEO
Industry	Nursery	Automotive	Real estate	Hairdresser
Business location	Voitsberg	Voitsberg	Graz	Voitsberg
Number of employees	52	45	28	10
Foundation	1970	1921	1979	2013
Generation	2 nd	3 rd	2 nd	1 st

Table 13: Statistical facts of the executing family businesses (own presentation)

Every participant rated each factor with reference to the own business without problems. Through the deposited formulas within the Excel sheet no complications arose. The ratings changed the figures automatically. Everything worked out fine. However, some improvements were suggested, which are headed below:

- The execution of the instrument should be conducted by a few or rather all employees in order to have a comparison and better and more objective insight (cf. Participant 1 03.04.2018; Participant 2 03.04.2018; Participant 3 03.04.2018; Participant 4 03.04.2018).

- The designations of the scale points 1 “extremely poor” and 6 “excellent” should be renamed because they would not be chosen. (cf. Participant 1 03.04.2018; Participant 3 03.04.2018; Participant 4 03.04.2018).
- A rough and general conclusion regarding the results would be advantageous und supporting (cf. Participant 2 03.04.2018; Participant 3 03.04.2018).
- The two figures regarding the real vs. maximum value regarding *adaptability* and *resistance* should additionally be represented in a different way in order to receive a better overview and comparison (cf. Participant 1 03.04.2018; Participant 3 03.04.2018).
- The scale ranges should be described in more detail (cf. Participant 3 03.04.2018).
- The weighting should be conducted by the family businesses as well. However, it should not be done only by them because then the results would be distorted. Therefore, an average of the weights of the experts and the executing family business would be more individual (cf. Participant 2 03.04.2018).

With reference to these results, the following changes are carried out:

- The scale values are changed and described, which is headed in the subsequent chapter.
- Short advices regarding the results are provided within chapter 13 “recommendations”.
- Additional figures are elaborated.

11 Completed instrument

Within this chapter, parts of the adapted instrument are graphically illustrated. Furthermore, specific changes are mentioned and described. The following contents represent parts and the basis of the final developed instrument. However, the ratings are still randomly chosen.

11.1 Assessment through the *cost utility analysis*

The structure of the whole instrument stays the same. Just the dimension groups and the corresponding factors have been changed with reference to the results of the expert interviews.

Following, a final part of the assessment through the *cost utility analysis* is depicted:

Dimension groups	Group importance in %	Factors	Description of the factors	Factor importance within the group in %	Overall importance of the factors in %
Leadership	17%	Future orientation	Having a long-term view and thinking beyond financial periods to support the sustainability of the business	24	4,1
		Respecting skilled knowledge and competences	Delegating responsibilities if someone else has the expertise or experience for this area	22	3,8
		Communication	Type of communication within the business (sharing of information to support each other, respectful treating, being honest, working together etc.)	29	5,0
		Open space for experiments	Enabling open space for being creative, developing new ideas, improving structures or processes as well as trying something new	25	4,3
Sum	100%			100	17
					100

Figure 28: Final example of the assessment through the *cost utility analysis* (own presentation)

11.2 Self-assessment through a *rating scale*

With reference to the test runs, the executing family businesses assumed to change the rating scale. Three out of four experts said, that they would never rate themselves as “extremely poor” or “excellent” because these values have too extreme characteristics (cf. Participant 1 03.04.2018; Participant 3 03.04.2018; Participant 4 03.04.2018). Besides, one participant suggested enclosing a short

description of every scale range in order to support the general understanding (cf. Participant 3 03.04.2018).

Therefore, it was decided to change the scaling points and take the grading system as basis because everyone is able to relate to it or is familiar with it. However, the Austrian grading system consists of five numbers, but the number of the scaling points does not change. It stays at six points in order to avoid a neutral point in the middle of the scale. Therefore, the *rating scale* of the instrument is based on the German grading system (cf. Kulturministerium 2012, p. 4). Consideration has to be given to the reversed system as it is depicted within the following the rating scale. This is reasoned by the aimed highest value:

1	2	3	4	5	6
insufficient	deficient	sufficient	satisfactory	good	very good

Figure 29: *Rating scale* of the completed instrument (own presentation)

Subsequently, each value is described in short:

1. Insufficient: If the performance does not meet the requirements at all.
2. Deficient: If the performance does not meet the requirements, but positive developments are predictable.
3. Sufficient: If the performance meets the requirements with minor deficiencies.
4. Satisfactory: If the performance meets the requirements.
5. Good: If the performance meets the requirements in an entire way.
6. Very good: If the performance meets the requirements in an extraordinary way (cf. Kulturministerium 2012, p. 4).

As it is already mentioned above, the structure of the instrument stays the same. However, the calculation regarding the rating, which is multiplied with the weighting, was modified. Therefore, the real value weight and the maximum value weight are not divided by 100 at the end in order to avoid very small numbers like "0,30".

Following, a part of the self-assessment is displayed as an example:

Dimension groups	Factors	Description of the factors	2) Rating of each factor	Including real value weight	Including maximum value weight
Leadership	Future orientation	Having a long-term view and thinking beyond financial periods to support the sustainability of the business	5	29,5	35,4
	Respecting skilled knowledge and competences	Delegating responsibilities if someone else has the expertise or experience for this area	6	19,8	19,8
	Communication	Type of communication within the business (sharing of information to support each other, respectful treating, being honest, working together etc.)	4	17,4	26,1
	Open space for experiments	Enabling open space for being creative, developing new ideas, improving structures or processes as well as trying something new	3	10,9	21,9
				77,7	103,2
				75%	100%

Figure 30: Final example of the self-assessment through the *rating scale* (own presentation)

The spider charts as graphical results of the ratings are just adapted regarding dimension groups and factors. Therefore, the charts are not headed again. It can be looked up in chapter 6.3.

11.3 Transformation into *adaptability* and *resistance*

Within this part of the instrument, the percentages of the allocations to *adaptability* and *resistance* have changed. As the results of the expert interviews are already analysed and interpreted, the selected dimension groups as well as factors received accordingly percentages.

The charts of the real vs. maximum value regarding *adaptability* and *resistance* are additionally represented as bar graphs in order to support the direct comparison. This was also suggested by one participant of the test runs (cf. Participant 3 03.04.2018).

Following, the two bar charts are illustrated.

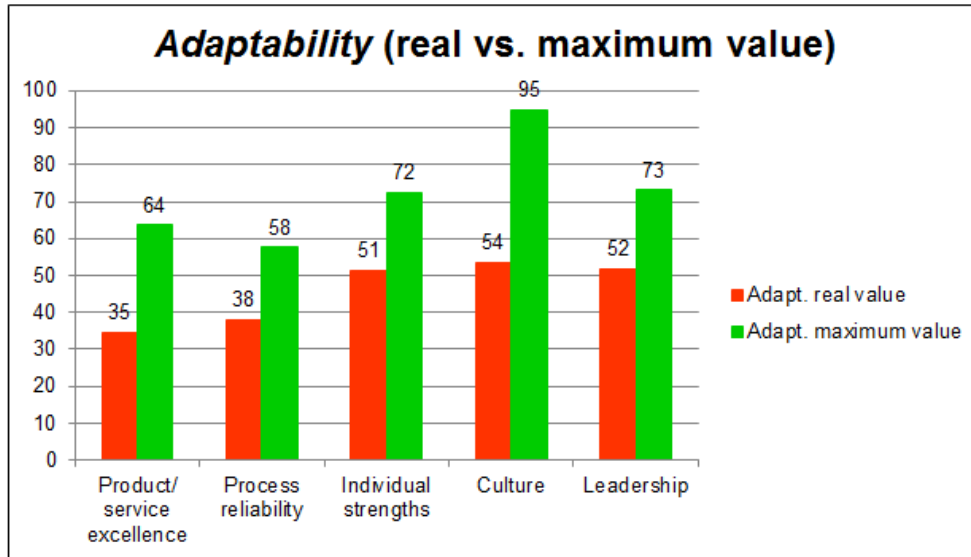


Figure 31: Additional representation of the ratio between the real and maximum value regarding *adaptability* (own presentation)

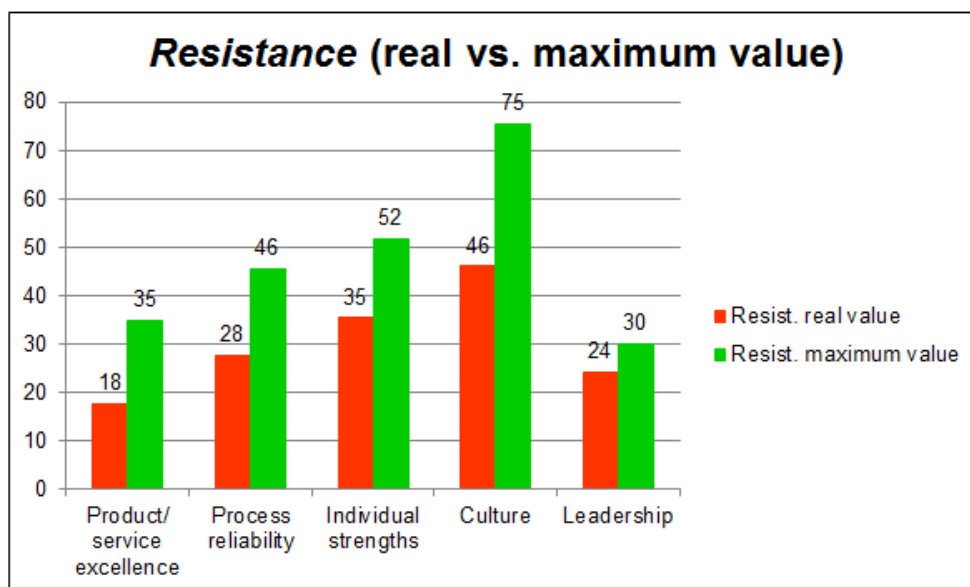


Figure 32: Additional representation of the ratio between the real and maximum value regarding *resistance* (own presentation)

12 Testing of the hypotheses

This chapter consists of the testing of the hypotheses in order to be aware which hypotheses can be validated or rejected with reference to the results of the primary market research.

H0: The elaborated dimensions are suited to support the visualisation of organisational resilience.

H0 can be validated. However, the three dimension groups were not sufficient enough for the majority of the experts. Therefore, additional dimension groups were named by the experts to support the visualisation and classification. The additional mentions are headed within chapter 9.2.1.

H1: The factors of each dimension are allocated to the right dimension.

H1 has to be rejected. With reference to the results of the expert interviews, especially the factors of the original dimension group “people behaviour” are not allocated to the right dimension. Many factors were shifted to one of the added dimension groups, like *culture*. The results are headed in more detail within chapter 9.2.2 or rather in chapter 4 within the appendix.

H2: The chosen factors for the instrument are the most appropriate to support the assessment and display of organisational resilience.

H2 has to be rejected as well. Not all of the beforehand chosen factors were rated as the most appropriate. The following factors are no longer part of the instrument:

- Chances orientation
- Business continuity
- Corporate culture
- Non-commercial engagement

13 Recommendations

This chapter consists of recommendations for executing family businesses and recommendations for future researchers for this topic.

13.1 For executing family businesses

For family businesses, who execute the instrument, the following three points are suggested:

- Being honest and confessing potential weak spots in order to achieve correct results and avoid distortions.
- Trying to have an objective opinion.
- If different target groups, products or services etc. exist, the execution should be conducted multiple times with reference to the various focuses.

Very general recommendations are provided regarding the individual results of each family business in order to receive an impression, where the business is standing at the moment. This is based on the Austrian grading system (cf. RIS 2012; FH Campus 02 2017, p. 7). The classifications including the descriptions are listed below and can be applied for the results:

0-50%: The business has enormous issues with being adaptable or/ and resistant. Serious measures regarding the single factors have to be developed and implemented.

50.1-65%: The business has considerable issues with being *adaptable* or/ and *resistant*. Adequate measures regarding the factors with the weakest ratings and the highest weights have to be developed and implemented.

65.1-80%: This area reflects average results, which means that there is a need for improvement. Useful measures for factors, which are rated as rather bad, have to be elaborated.

80.1-90%: The business has a good position. These factors, which are responsible for not achieving very good results, should be improved.

90.1-100%: The business has a very good position and does not need to set actions at the moment. Nevertheless, the business should try to keep this level and still improve constantly (cf. RIS 2012; FH Campus 02 2017, p. 7)

Every family business should watch its own results in detail and develop individual measures at least for those factors, which received the ratings “sufficient”, “deficient” or “insufficient”, in order to improve the *adaptability* and *resistance* or rather organisational resilience within the business.

13.2 For future researchers

The following points are recommended for future researchers:

- It is suggested to search for sources regarding the topic “business continuity” too, if literature for organisational resilience is needed, because the experts of Singapore, Australia, USA and New Zealand used the term as a synonym in the course of the interviews.
- In general, the instrument should be executed by the CEO of the family business because he has the best overview of the whole business and has the most information of certain processes, contracts etc. However, if the CEO wants to receive insights and objective views, especially regarding the behaviour of his leadership style and the culture, it is recommended to ask employees as well. This was also assumed to be necessary by all participants of the test runs. However, not every employee is capable of rating each factor. Even if the insights of all employees can be obtained as a general basis, the results of adequate employees should be considered. For example, an accountant does not have the same insight into the customer needs like a person of the Marketing Department.
- One participant of the test runs suggested taking the average weight of the family businesses and experts (cf. Participant 2 03.04.2018). This could be tried in the course of executing a quantitative market research. This means, to analyse it in two different ways. Firstly, asking for individual weightings and taking the average percentage of the individual weight and the standardised weight and secondly, just taking the standardised weight. In the course of that, differences within industries or possible distortions can be evaluated.

- Several factors were named two or three times by the experts. However, these factors were not included into the instrument, because a limit has to be set in order to be able to build an instrument, which does not overwhelm the executing family businesses. Therefore, it is recommended to focus on these factors in further researches as well or rather trying to detect their relevance. The following factors should be considered: diversity/ flexibility, business continuity, processes to ensure quality control, learning from mistakes, modularity, information- and knowledge-management, ability to apply routines flexible and acceptance of unchangeable situations.
- Moreover, it is recommended to extend the existing instrument by elaborating adequate sub-questions for every factor in order to be able to really measure the organisational resilience in family businesses.
- In the course of the real execution of the instrument, the resilience within the family organisations can be gathered and compared within industries, business sizes, locations etc.
- Additionally, the executing family business should be asked, if factors are missing or should be eliminated or added in their opinion including a reason. Of course, these individual opinions should be confirmed by several family businesses and/ or by literature. Due to that, the family business focus of the instrument can be acknowledged or increased.
- It is highly recommended to develop and elaborate a general list with measures for improvement for every single factor of the instrument in order to provide orientation for the individual actions plan of the family businesses.

14 Conclusion

Due to VUCA and the *Three-Circle-Model*, the whole environment of a family business is affected by huge challenges, which can hinder a successful future. Therefore, a family business has to be organisational resilient.

Hence, supporting dimension groups and factors for achieving organisational resilience were elaborated for the developed instrument to assess and display organisational resilience in family businesses. Characteristics of family businesses were worked out and aligned with the contents of organisational resilience in order to be able to build the instrument with reference to family businesses on a theoretical basis.

The instrument consists of a weighting part, where the weights are fixed due to the expert results. The fixing of the weights avoids possible distortions through the executing family business. The second part, which is individually conducted by family businesses, includes the rating of the dimension groups and factors. Deposited formulas change the results within the figures and charts automatically. Therefore, a family business does not need any further support – the instrument can be executed without help. The last table, which is calculated automatically as well, shows how *adaptable* and *resistant* the business in particular areas is. Due to that, specific measures for the improvement of certain factors can be set.

Through the conduction of 16 expert interviews, the whole elaborated instrument was adapted and changed. In addition, the adapted instrument was tested four times by CEOs of family businesses to confirm the practical feasibility. This part was supporting for further improvements and ideas, which were partly included as well. For example, short and general descriptions of each percentage area are provided in order to give a hint. However, it is indispensable to work on every single factor, which received a rather bad result.

The results of every family business are different and individual, therefore a general action plan cannot be provided. Adequate measures have to be developed with reference to the own business situation and conducted in order to improve the general value and rating of certain factors and in the course of that, to improve the whole business condition. If a family business accomplishes a high percentage regarding *adaptability* and *resistance*, it does not mean that nothing has to be changed. The family business still has to improve itself in order to keep the level.

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[d9277d26de38%40sessionmgr4008&bquery=vuca+provoking&bdata=JmRiPWJ0aCZkYj1ubGViaYzkyYj1IMDIwbXd3JmRiPWJ3aCZkYj1idWgmdHlwZT0xJnNpdGU9ZWWhvc3QtbGl2ZQ%3d%3d](http://web.a.ebscohost.com/ehost/resultsadvanced?vid=5&sid=201cc978-6093-4a4d-8c06-d9277d26de38%40sessionmgr4008&bquery=vuca+provoking&bdata=JmRiPWJ0aCZkYj1ubGViaYzkyYj1IMDIwbXd3JmRiPWJ3aCZkYj1idWgmdHlwZT0xJnNpdGU9ZWWhvc3QtbGl2ZQ%3d%3d) [08.10.2017]

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Appendix

Table of contents (appendix)

List of figures (appendix)	A-2
List of tables (appendix)	A-2
1 Project plan	A-4
2 Descriptions of the factors	A-6
3 Conversation guides	A-9
3.1.1 Conversation guide – experts of organisational resilience (part 1) ..	A-9
3.1.2 Conversation guide – experts of organisational resilience (part 2) ..	A-11
3.1.3 Conversation guide – experts of family businesses	A-13
3.1.4 Beforehand information for experts regarding organisational resilience	A-15
3.1.5 Beforehand information for experts regarding family businesses ..	A-16
4 Supporting tables for the selection of the dimension groups and factors ...	A-17
5 Supporting tables for the weighting of the dimension groups and factors ..	A-23
6 Supporting table and figures for the transformation into <i>adaptability</i> and <i>resistance</i>	A-31

List of figures (appendix)

Figure 1: Project plan (own presentation).....	A-5
Figure 2: Distribution of the weights of the dimension groups (own presentation)	A-24
Figure 3: Distribution of the weights of <i>product/ service excellence</i> (own presentation)	A-25
Figure 4: Distribution of the weights of <i>process reliability</i> (own presentation) ...	A-26
Figure 5: Distribution of the weights of <i>individual strenghts</i> (own presentation)	A-28
Figure 6: Distribution of the weights of <i>culture</i> (own presentation).....	A-30
Figure 7: Distribution of the weights of <i>leadership</i> (own presentation)	A-30
Figure 8: Allocations to the competences regarding <i>product/ service excellence</i> (own presentation).....	A-32
Figure 9: Allocations to the competences regarding <i>process reliability</i> (own presentation)	A-33
Figure 10: Allocations to the competences regarding <i>individual strenghts</i> (own presentation)	A-33
Figure11: Allocations to the competences regarding <i>culture</i> (own presentation)	A-34
Figure 12: Allocations to the competences regarding <i>leadership</i> (own presentation)	A-34
Figure 13: Overall percentages regarding the allocations to <i>adaptability</i> and <i>resistance</i> within each dimension group (own presentation)	A-35

List of tables (appendix)

Table 1: Indications of the factors within <i>product/ service excellence</i> (own presentation)	A-17
Table 2: Indications of the factors within <i>process reliability</i> (own presentation)	A-18
Table 3: Indications of the factors within <i>individual strenghts</i> (own presentation)	A-19
Table 4: Indications of the factors within <i>culture</i> (own presentation)	A-20
Table 5: Indications of the factors within <i>leadership</i> (own presentation)	A-21

Table 6: Indications of the factors within <i>organisational behaviour</i> (own presentation)	A-21
Table 7: Indications of the factors within <i>social embeddedness</i> (own presentation)	A-21
Table 8: Indications of the factors within <i>characteristics of family businesses</i> (own presentation)	A-22
Table 9: Indications of the factors within <i>financing</i> (own presentation).....	A-22
Table 10: Indications of the factors within <i>orientation of the acting persons</i> (own presentation)	A-22
Table 11: Numbers of denomination and average % of the dimension groups (own presentation)	A-23
Table 12: Calculation of the weights regarding the dimension groups (own presentation)	A-23
Table 13: Numbers of denomination and average % of <i>product/ service excellence</i> (own presentation).....	A-24
Table 14: Calculation of the weights regarding dimension group <i>product/ service excellence</i> (own presentation).....	A-24
Table 15: Numbers of denomination and average % of <i>process reliability</i> (own presentation)	A-25
Table 16: Calculation of the weights regarding dimension group <i>process reliability</i> (own presentation).....	A-26
Table 17: Numbers of denomination and average % of <i>individual strengths</i> (own presentation)	A-27
Table 18: Calculation of the weights regarding dimension group <i>individual strengths</i> (own presentation).....	A-28
Table 19: Numbers of denomination and average % of the added factors of the additional dimension groups (own presentation)	A-29
Table 20: Calculation of the weights regarding dimension group <i>culture</i> (own presentation)	A-29
Table 21: Calculation of the weights regarding dimension group <i>leadership</i> (own presentation)	A-30
Table 22: Results of the transformation into <i>adaptability</i> and <i>resistance</i> (own presentation)	A-31

1 Project plan

Project plan					2017/ 2018																				Status																									
					Sep 17					Oct 17					Nov 17					Dec 17						Jan 18					Feb 18					Mar 18					Apr 18					May 18				
					35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20							
WP	Activities	From	To	Who																																														
1	Preparation and first coaching																																																	
	Literature research	28.08.2017	26.10.2017	S	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Done							
	Initial situation/ challenge formulation/ objectives/ research questions/ hypotheses	27.09.2017	28.09.2017	S																																								Done						
	Frame of reference	01.10.2017	03.10.2017	S																																								Done						
	Coaching 1		06.10.2017	S, MM																																								Done						
	Adaption and changes after coaching 1	06.10.2017	08.10.2017	S																																								Done						
2	MS 1																																																	
	Preparation of the needed documents for MS 1	06.10.2017	12.10.2017	S																																								Done						
	Transmission to MM		12.10.2017	S																																									Done					
	Feedback MM	13.10.2017	16.10.2017	MM																																									Done					
	Adaption and changes after feedback of MM	16.10.2017	19.10.2017	S																																									Done					
	Upload & hand over		20.10.2017	S																																									Done					
	MS 1		27.10.2017	S, MM, C																																									Done					
	Adaption and changes after MS 1	29.10.2017	10.11.2017	S																																									Done					
3	Theoretical part																																																	
	Literature research	02.11.2017	15.01.2017	S																																									Done					
	Chapter 2: Organisational resilience	13.11.2017	30.11.2017	S																																										Done				
	Chapter 3: Organisational resilience in family businesses	01.12.2017	23.12.2017	S																																										Done				
	Chapter 4: Supporting methods for the instrument	27.12.2017	02.01.2018	S																																										Done				
	Chapter 5: Development of the instrument	29.12.2017	10.01.2018	S																																										Done				
	Transmission to MM	03.01.2018	10.01.2018	S																																										Done				
	Feedback MM	03.01.2018	15.01.2018	MM																																										Done				
	Adaption and changes after feedback of MM	04.01.2018	19.01.2018	S																																										Done				
	Theoretical part done		19.01.2018	S																																										Done				
4	Preparatory work of the empirical part																																																	
	Research Design		26.12.2017	S																																									Done					
	Development of a guideline for the interviews	08.01.2018	11.01.2018	S																																										Done				
	Searching for adequate probands	08.01.2018	19.01.2018	S																																										Done				
	Appointment arrangements	08.01.2018	19.01.2018	S																																										Done				
5	MS 2																																																	
	Preparation of the needed documents for MS 2	26.12.2017	13.01.2018	S																																										Done				
	Transmission to MM		13.01.2018	S																																										Done				
	Feedback MM	14.01.2018	16.01.2018	MM																																										Done				
	Adaption and changes after feedback of MM	16.01.2018	19.01.2018	S																																										Done				
	Upload & hand over		19.01.2018	S																																										Done				
	MS 2		25.01.2018	S, MM, C																																										Done				
	Adaption and changes after MS 2	26.01.2018	04.02.2018	S																																										Done				

2 Descriptions of the factors

With reference to chapter 2.3 the short descriptions of all factors are mentioned. However, these descriptions are not aligned with the results of the primary market research or rather the expert interviews.

- Anticipation: Detecting threats or potential crises before they arise
- Innovation: Enforcing a technical or organisational newness
- Diversity: Being open for having a varied portfolio or for flexible steps
- Chances orientation: Observation of chances on the market and taking them
- Understanding customer needs: Knowing what customers (latently) want and need
- Evaluation and analysis of the gathered information: Using the right sources
- Information gathering on political, economic and industry trends in all markets: Searching for influencing trends, laws, changes etc.
- Reputation risk: Retain a good reputation in order to avoid damages to the image

- Goal- and solution-orientation: Setting realistic goals (including sub-goals), imparting them in an adequate way and focusing on them
- Supply chain: Having a good and reliable relationship to the suppliers
- Governance: Structure of leadership and monitoring of organs and rules
- Business continuity: Generation of a framework for continuity (= persistency, toughness), guidelines and procedures
- Information security systems: Having systems, which protect the IT area
- Operational processes to ensure quality control of products and services: Having quality controls
- Operational process to ensure health and safety: Protection against accidents, promotion for being healthy etc.
- Operational process to manage environmental impact: Being able to handle influences like pollution, frost, earthquakes etc.

- Focusing on mistakes: Actively addressing mistakes in order to be aware of them and work on them
- Financial aspects: Quality of the financial management and success of the Key Performance Indicators (KPIs)
- Resource management: Efficient management of resources; e.g. appointing employees, where they are needed
- Ability to build a structure very fast in turbulent environments: Using flexible paths, steps or approaches
- Modularity: Avoiding collaborations or connections, which transfer risks or problems
- Redundancy: Replacing certain tasks in case of a breakdown or personnel failure
- Information- and knowledge-management: Type of generating and sharing information and knowledge
- Future orientation: Proactive and pre-emptive structuring of the future, consistently developing future visions, taking the initiative
- Network-orientation: Searching for networks within the business and outside to external partners
- Self-responsibility: Acting pre-emptive, searching in advance for possible defective developments, taking over responsibility and avoiding to search for the guilty one
- Acceptance: Accepting and continuing with the actual situation
- Dynamic leadership: Adapting the leading style to the circumstances
- Corporate culture: Awareness of the degree of the own contribution to the company's success
- Ability of flexible using of routines: Working in a flexible way and being able to adapt certain working steps etc.
- Ability to learn: As well as willingness to learn (from colleagues, mistakes, etc.)
- Optimism: Positive attitude towards the company and the trust to a positive future
- Activity orientation: Willingness and readiness for actions

- Non-commercial engagement: Social responsibility and relationship to stakeholders within the region
- Awareness, training and audit: Having general awareness within the business, finishing training, having audits
- Orientation: Actively influencing decisions
- Employee identification with the business vision: Having committed employees
- Cooperating: Acting in concert
- Well-trained and appropriately skilled staff: Employees have necessary skills and are well-trained
- Respecting skilled knowledge and competences: Appreciating expertise of employees or colleagues and giving the chance to apply that expertise
- Trust: Trust into the positive future of the business, employees and their capabilities
- Ingenuity: Forwarding creativity through scarcity of resources
- Guidance: Performance of leading people

3 Conversation guides

For the German speaking experts, the guides were translated in German as well.

3.1.1 Conversation guide – experts of organisational resilience (part 1)

Conversation guide

for the expert interviews of the master thesis:

“Development of an instrument for assessing and displaying organisational resilience in family businesses”

Study participant – demographical data

Name:

Expert regarding: Organizational resilience

Profession:

Gender:

Age:

Location:

Icebreaker questions

1. When did you start to work on the topic organisational resilience?
 2. Which aspect is the most interesting for you regarding organisational resilience?
-

1. How would you define *organisational resilience*?

Part 1: Generation of factors

As I already sent you, I decided to focus on a classification of three dimensions – *product/ service excellence, process reliability* and *people behaviour*, which is based on BSI group. With reference to this classification I have allocated describing factors of organisational resilience, which I researched on, to them.

1. These dimension groups are required in order to produce resilience, in my opinion (= based on BSI Group) – what do you think of my classification? Shall I add a dimension group or change them?
2. With reference to the factors, which are allocated to the dimension groups: shall I shift them within the dimension groups, add or eliminate factors?
3. How would you define each factor within one sentence or a few words?

Part 2: Adaptions of the already elaborated dimensions and factors

Now, I will show you the factors, which I have elaborated through research, regarding every dimension group. This is also the basis for the developed instrument.

1. What is your opinion to this elaboration?

Part 3: Weighting of the dimension groups and factors

1. Please distribute 100% between the categories *product/ service excellence*, *process reliability* and *people behaviour* with reference to their importance.
2. Please do the same within every dimension group. This means to distribute 100% between the factors within one dimension group.

Part 4: Adaptability and resistance

The last part is really essential for calculating, how organisational resilient a business indeed is. I have transformed every factor into the competences *adaptability* and *resistance*. However, this is just my personal classification. Therefore, I need your help ensure a correct classification.

Due to the time, I will directly show you each classification and ask for your opinion.

(With reference to your changes regarding the factors, I also need a classification into the two competences, please.)

Thank you very much for your time! I really appreciate that.

Conversation guide

for the expert interviews of the master thesis:

“Development of an instrument for assessing and displaying organisational resilience in family businesses”

Study participant – demographical data

Name:

Expert regarding: Organisational resilience

Profession:

Gender:

Age:

Location:

Icebreaker questions

1. When did you start to work on the topic organisational resilience?
 2. Which aspect is the most interesting for you regarding organisational resilience?
-

1. How would you define *organisational resilience*?

Part 1: Adaptions of the already elaborated dimensions and factors

As I already sent you, I decided to focus on a classification of three dimensions – *product/ service excellence, process reliability* and *people behaviour*, which is based on BSI group. With reference to this classification I have allocated describing factors of organisational resilience, which I researched on, to them.

1. These dimension groups are required in order to produce resilience, in my opinion (= based on BSI Group) – what do you think of my classification? Shall I add a dimension group or change them?
2. With reference to the factors, which are allocated to the dimension groups: shall I shift them within the dimension groups, add or eliminate factors?

3. How would you define each factor within one sentence or a few words?

Now, I will show you the factors, which I have elaborated through research, regarding every dimension group. This is also the basis for the developed instrument.

1. What is your opinion to this elaboration?

Part 2: Weighting of the dimension groups and factors

Due to the fact, that you elaborated an individual classification and a general classification exists, I ask you to do the following two times, once for your classification and once for the general one:

1. Please distribute 100% between the categories *product/ service excellence*, *process reliability* and *people behaviour* with reference to their importance.
2. Please do the same within every dimension group. This means to distribute 100% between the factors within one dimension group.

Part 3: Adaptability and resistance

The last part is really essential for calculating, how organisational resilient a business indeed is. I have transformed every factor into the competences *adaptability* and *resistance*. However, this is just my personal classification. Therefore, I need your help ensure a correct classification.

Due to the time, I will directly show you each classification and ask for your opinion.

(With reference to your changes regarding the factors, I also need a classification into the two competences, please.)

Thank you very much for your time! I really appreciate that.

Conversation guide

for the expert interviews of the master thesis:

“Development of an instrument for assessing and displaying organisational resilience in family businesses”

Study participant – demographical data

Name:

Expert regarding: Family businesses

Profession:

Gender:

Age:

Location:

Icebreaker questions

1. When did you start to work on the topic family businesses?
 2. Which aspect is the most interesting for you regarding family businesses?
-

Part 1: Adaptions of the already elaborated dimensions and factors

As you already received information about the topic of my master thesis and about organisational resilience, I directly start with explaining my instrument. If you need any information in between, please do not hesitate to ask me.

I decided to focus on an overall classification of three dimensions – *product/service excellence*, *process reliability* and *people behaviour* which is based on BSI group. With reference to this classification I have allocated describing factors of organisational resilience, which I researched on, to them.

1. If you see all these factors, which ones influence family businesses the most (in a positive and/ or negative way)?
2. Would you add any factors? If yes, why and to which dimension group?

3. With reference to your chosen factors of question 1 – how would you describe each factor within one sentence or a few words?

Now, I will show you the factors, which I have elaborated through research, regarding every dimension group. This is also the basis for the developed instrument.

1. What is your opinion to this elaboration?

Part 2: Weighting of the dimension groups and factors

Due to the fact, that you elaborated an individual classification and a general classification exists, I ask you to do the following two times, once for your classification and once for the general one:

1. Please distribute 100% between the categories *product/ service excellence*, *process reliability* and *people behaviour* with reference to their importance within a family business.
2. Please do the same within every dimension group. This means to distribute 100% between the factors regarding family businesses within one dimension group.

Part 3: Adaptability and resistance

The last part is really essential for calculating, how organisational resilient a business indeed is. I have transformed every factor into the competences *adaptability* and *resistance*. However, this is just my personal classification. Therefore, I need your help ensure a correct classification.

Due to the time, I will directly show you each classification and ask for your opinion. (With reference to your changes regarding factors, I also need a classification into the two competences, please.)

Thank you very much for your time! I really appreciate that.

3.1.4 *Beforehand information for experts regarding organisational resilience*

I already developed an instrument within the programme *Microsoft Excel*. It consists of a weighting as well as rating of dimension groups and selected factors out of many factors. Afterwards the factors are transformed into competences in order to calculate the degree of resilience.

Subsequently, the dimension groups and all factors, which are based on different sources, are headed. I did the allocation to the dimension groups by my own and therefore, I need your support.

If you have the time, please read through the document and think of the following questions:

- These dimension groups are required in order to produce resilience, in my opinion (= based on BSI Group) – what do you think of my classification? Shall I add a dimension group or change them?
- With reference to the factors, which are allocated to the dimension groups: shall I shift them within the dimension groups, add or eliminate factors?
- How would you define each factor within one sentence or a few words?

[Afterwards, the dimension groups and factors were headed.]

3.1.5 *Beforehand information for experts regarding family businesses*

I already developed an instrument within the programme *Microsoft Excel*. It consists of a weighting as well as rating of dimension groups and selected factors out of many factors. Afterwards the factors are transformed into competences in order to calculate the degree of resilience.

Subsequently, the dimension groups and all factors, which are based on different sources, are headed.

But first, there is a short explanation of organisational resilience:

“Organizational Resilience is the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to survive and prosper. It reaches beyond risk management towards a more holistic view of business health and success. A resilient organization is one that not merely survives over the long term, but also flourishes - passing the test of time.”
(BSI Group no year a)

If you have the time, please read through the document and think of the following questions:

1. If you see all these factors, which ones influence family businesses the most (in a positive and/ or negative way)?
2. Would you add any factors? If yes, why and to which dimension group?
3. With reference to your chosen factors of question 1 – how would you describe each factor within one sentence or a few words?

[Afterwards, the dimension groups and factors were headed.]

4 Supporting tables for the selection of the dimension groups and factors

The frequencies of each factor within each dimension group are headed. Within these tables the changes of the names are not applied. However, the changes of the names are included within the denomination of each factor. Besides, three existing factors are merged with additional mentioned factors:

- Goal- and solution-orientation includes outcome-orientation
- Future orientation includes long-term orientation
- Cooperating includes team orientation

The additional mentions are listed at the ending of each dimension group. Furthermore, the last column of each table displays the total number of denomination of all experts summarised of all dimension groups in order to receive a direct overview, which is marked by “n”:

The following tables support the choice of the final dimension groups and factors:

Product/ service excellence		
Factors	Number of denomination within the dimension group	Total number of denomination
Anticipation	N=6	n=7
Innovation	N=10	-
Diversity	N=2	-
Chances orientation	-	-
Understanding customer needs	N=11	-
Evaluation and analysis of the gathered information	-	-
Information gathering on political, economic and industry trends in all markets	-	-
Reputation risk	N=6	-
Degree of coverage	N=1	-
Branding	N=1	-

Table 1: Indications of the factors within *product/ service excellence* (own presentation)

Process reliability		
Factors	Number of denomination within the dimension group	Total number of denomination
Goal- and solution-orientation	N=3	n=6
Supply chain	N=7	
Governance	N=6	n=7
Business continuity	N=2	-
Information security systems	N=1	-
Operational processes to ensure quality control of products and services	N=2	-
Operational process to ensure health and safety	-	-
Operational process to manage environmental impact	N=1	-
Focusing on mistakes	N=3	-
Financial aspects	N=4	n=5
Resource management	N=10	-
Ability to build a structure very fast in turbulent environments	N=5	-
Modularity	N=2	-
Redundancy	N=1	-
Information- and knowledge-management	N=3	n=4
Eliminate ineffective processes	N=1	-
Strategic planning process	N=2	-
Doing things right directly at the first time	N=1	-

Table 2: Indications of the factors within *process reliability* (own presentation)

Individual strengths		
Factors	Number of denomination within the dimension group	Total number of denomination
Future orientation	N=3	n=6
Network-orientation	N=1	n=6
Self-responsibility	N=6	-
Acceptance	N=2	-
Dynamic leadership	N=3	n=7
Corporate culture	N=2	n=3
Ability of flexible using of routines	N=3	n=4
Ability to learn	N=5	n=7
Optimism	N=1	n=5
Activity orientation	-	n=1
Non-commercial engagement	N=1	-
Awareness, training, audit	N=1	-
Orientation	-	-
Employee identification with the business vision	N=4	n=7
Cooperating	N=2	n=5
Well-trained and appropriately skilled staff	N=3	n=5
Respecting skilled knowledge and competences	N=3	n=5
Trust	N=4	n=10
Ingenuity	N=4	n=5
Guidance	N=1	-
Shareholders	N=1	-
Commitment	N=1	-
Change readiness	N=1	-
Decision-making ability	N=1	-
Solution orientation	N=1	n=6

Table 3: Indications of the factors within *individual strengths* (own presentation)

Culture		
Factors	Number of denomination within the dimension group	Total number of denomination
Network-orientation	N=2	n=6
Dynamic leadership	N=2	n=7
Optimism	N=3	n=5
Employee identification with the business vision	N=2	n=7
Cooperating	N=3	n=5
Well-trained and appropriately skilled staff	N=1	n=5
Respecting skilled knowledge and competences	N=1	n=5
Trust	N=3	n=10
Ingenuity	N=1	n=5
Willingness to learn	N=1	n=1
Long-term orientation	N=1	n=6
Information- and knowledge management	N=1	n=4
Social responsibility	N=1	n=1
Transparency	N=1	n=1
Balance of interest	N=1	n=1
Differentiated personnel policy	N=1	n=1
Anticipation	N=1	n=7
Mistake and learning culture	N=1	n=2
Open space for experiments	N=1	n=2
Usage of expert knowledge	N=1	n=1
Dialogue culture	N=1	n=1
Sense of belonging	N=1	n=1
Pride	N=1	n=1
Trans generational entrepreneurship	N=1	n=1
Outcome-orientation	N=1	n=6
Aggressiveness	N=1	n=1
Sense of responsibility	N=1	n=1

Table 4: Indications of the factors within *culture* (own presentation)

Leadership		
Factors	Number of denomination within the dimension group	Total number of denomination
Dynamic leadership	N=1	n=7
Trust	N=1	n=10
Respecting skilled knowledge and competences	N=1	n=5
Well-trained and appropriately skilled staff	N=1	n=5
Communication	N=2	-
Mistake and learning culture	N=1	n=2
Open space for experiments	N=1	n=2
Monitoring	N=1	-

Table 5: Indications of the factors within *leadership* (own presentation)

Organisational behaviour		
Factors	Number of denomination within the dimension group	Total number of denomination
Leadership	N=1	n=7
Ability to learn	N=1	n=6
Optimism	N=1	n=5
Trust	N=1	n=10

Table 6: Indications of the factors within *organisational behaviour* (own presentation)

Social embeddedness		
Factors	Number of denomination within the dimension group	Total number of denomination
Family ties	N=1	-
Local business network ties	N=1	-
Social network management skills	N=1	-
Situation awareness	N=1	-

Table 7: Indications of the factors within *social embeddedness* (own presentation)

Characteristics of family businesses		
Factors	Number of denomination within the dimension group	Total number of denomination
Network-orientation	N=2	n=6
Corporate culture	N=1	n=3
Ability of flexible use of routines	N=1	n=4
Employee identification with the business vision	N=1	n=7
Governance	N=1	n=7
Goal- and solution-orientation	N=1	n=6
Trust	N=1	n=10
Long-term orientation	N=1	n=6

Table 8: Indications of the factors within *characteristics of family businesses* (own presentation)

Financing		
Factors	Number of denomination within the dimension group	Total number of denomination
Level of equity ratio	N=1	n=2
Level of reinvestment	N=1	-
Yield expectation	N=1	-

Table 9: Indications of the factors within *financing* (own presentation)

Orientation of the acting persons		
Factors	Number of denomination within the dimension group	Total number of denomination
Future orientation	N=1	n=6
Network-orientation	N=1	n=6
Activity orientation	N=1	-
Orientation regarding customer needs	N=1	-

Table 10: Indications of the factors within *orientation of the acting persons* (own presentation)

5 Supporting tables for the weighting of the dimension groups and factors

The following tables illustrate how often the already existed and additional added factors were chosen as very influencing as well as important. The factors, which were elaborated within the theoretical chapter, are represented in the original dimension groups even if some factors were mentioned in other dimension groups. Factors, which are directly added within the existing dimension groups, are listed within that table and the other ones, which were added for additional dimension groups, are headed within the last table. It means, that the allocations to the various dimension groups are not regarded. The overall weight of each factor is analysed. For the dimension groups and each dimension group two tables are headed. Always the second table supports the understanding of the transformation of the percentages. Additional figures are listed for every dimension group to support the understanding.

Dimension groups	Number of denomination	Average %
Product/ service excellence	N=13	19%
Process reliability	N=13	20%
Individual strengths	N=12	24%
Culture	N=8	33%
Leadership	N=2	20%
Characteristics of family businesses	N=2	53%
Organisational behaviour	N=1	35%
Social Embeddedness	N=1	22%
Financing	N=1	17%
Orientation of the acting persons	N=1	20%

Table 11: Numbers of denomination and average % of the dimension groups (own presentation)

Dimension groups	Weight before	Actual weight
Product/ service excellence	19%	16%
Process reliability	20%	17%
Individual strengths	24%	21%
Culture	33%	28%
Leadership	20%	17%
Total sum	116%	100%

Table 12: Calculation of the weights regarding the dimension groups (own presentation)

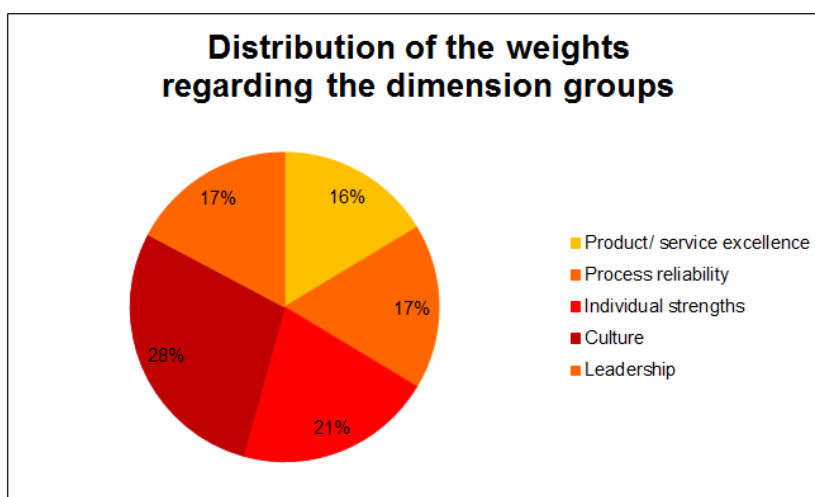


Figure 2: Distribution of the weights of the dimension groups (own presentation)

Product/ service excellence

Factors <i>product/ service excellence</i>	Number of denomination	Average %
Anticipation	N=7	27%
Innovation	N=10	33%
Diversity	N=2	20%
Degree of coverage	N=1	20%
Understanding customer needs	N=11	33%
Evaluation and analysis of the gathered information	N=0	0%
Information gathering on political, economic and industry trends in all markets	N=0	0%
Reputation retention	N=6	27%
Branding	N=1	20%

Table 13: Numbers of denomination and average % of the *product/ service excellence* (own presentation)

Product/ service excellence	Weight before	Actual weight
Understanding customer needs	33%	28%
Innovation	33%	28%
Anticipation	27%	23%
Reputation retention	27%	23%
Total sum	120%	100%

Table 14: Calculation of the weights regarding dimension group *product/ service excellence* (own presentation)

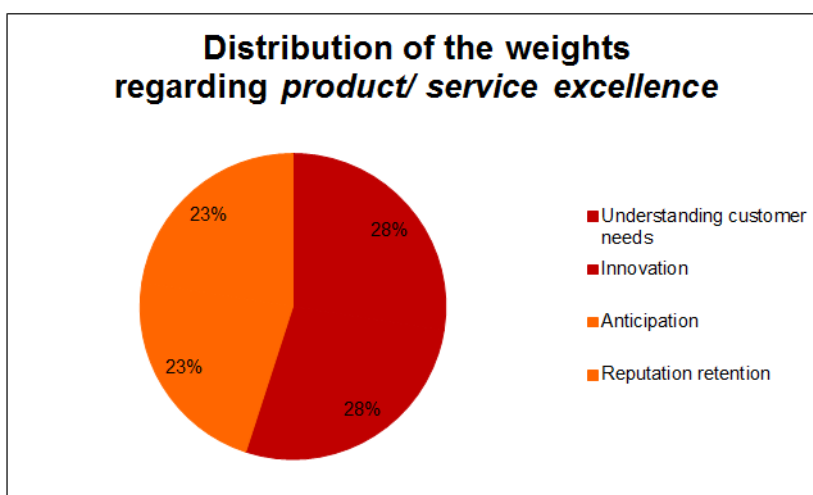


Figure 3: Distribution of the weights of *product/ service excellence* (own presentation)

Process reliability

Factors <i>process reliability</i>	Number of denomination	Average %
Goal- and solution-orientation (Outcome-orientation)	N=6	19%
Supply chain	N=7	21%
Governance	N=7	22%
Business continuity	N=2	20%
Information security systems	N=1	10%
Operational processes to ensure quality control of products and services	N=2	20%
Operational process to ensure health and safety	N=0	0%
Operational process to manage environmental impact	N=1	15%
Learning from mistakes	N=3	17%
Financial aspects (Level of equity ratio)	N=5	26%
Resource management	N=10	27%
Ability to build a structure very fast in turbulent environments (Flexibility)	N=5	13%
Modularity	N=2	13%
Redundancy	N=1	10%
Information- and knowledge-management	N=4	23%
Doing things right directly at the first time	N=1	30%
Eliminating ineffective processes	N=1	10%
Strategic planning process	N=1	15%
Strategy development	N=1	30%

Table 15: Numbers of denomination and average % of the *process reliability* (own presentation)

Process reliability	Weight before	Actual weight
Resource management	27%	21%
Supply chain	22%	17%
Governance	22%	17%
Flexibility	13%	10%
Financial aspects (Level of equity ratio)	26%	20%
Goal- and solution-orientation	19%	15%
Total sum	129%	100%

Table 16: Calculation of the weights regarding dimension group *process reliability* (own presentation)

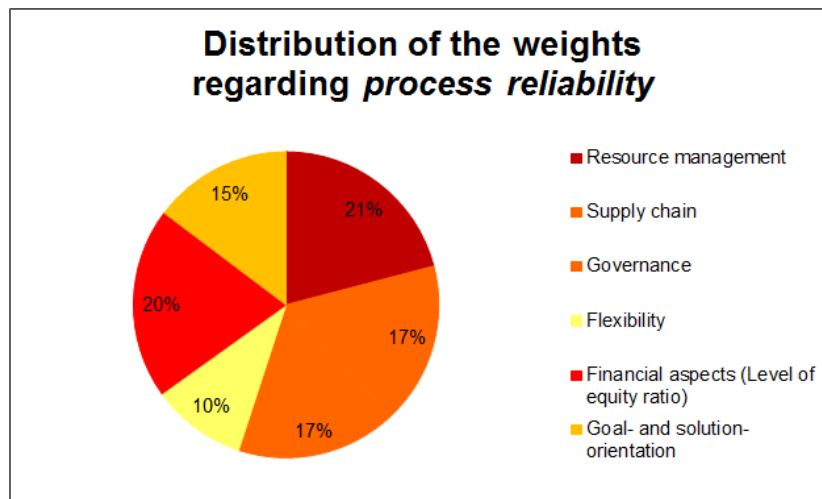


Figure 4: Distribution of the weights of *process reliability* (own presentation)

Individual strengths

Factors individual strengths	Number of denomination	Average %
Future orientation (Long-term-orientation)	N=6	15%
Network-orientation	N=6	23%
Self-responsibility	N=6	20%
Acceptance	N=2	20%
Dynamic leadership	N=7	26%
Corporate culture	N=3	22%
Ability of flexible using of routines	N=4	15%
Ability to learn	N=7	21%
Optimism	N=5	20%
Activity orientation	N=1	25%
Non-commercial engagement	N=1	5%
Training	N=1	15%
Orientation to customer needs	N=1	50%
Employee identification with the business vision	N=7	18%
Cooperating	N=5	19%
Well-trained and appropriately skilled staff	N=5	15%
Respecting skilled knowledge and competences	N=5	19%
Trust	N=10	24%
Ingenuity	N=5	16%
Guidance	N=1	13%
Social responsibility	N=1	20%
Decision-making ability	N=1	10%
Goal setting	N=1	25%
Shareholders	N=1	10%
Commitment	N=1	20%
Change readiness	N=1	20%

Table 17: Numbers of denomination and average % of the *individual strengths* (own presentation)

Individual strengths	Weight before	Actual weight
Sense of responsibility	19%	17%
Motivation to learn	21%	18%
Commitment	19%	17%
Trust	24%	21%
Ingenuity	16%	14%
Well-trained and skilled staff	15%	13%
Total sum	114%	100%

Table 18: Calculation of the weights regarding dimension group *individual strengths* (own presentation)

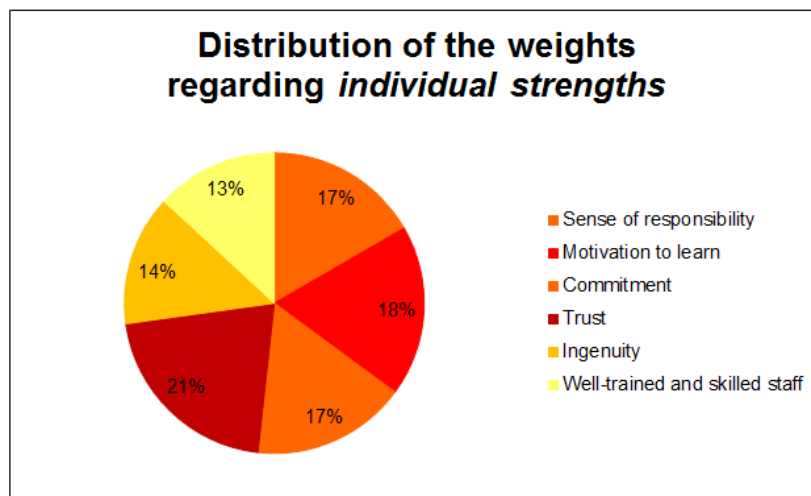


Figure 5: Distribution of the weights of *individual strengths* (own presentation)

Factors additional dimension groups	Number of denomination	Average %
Family ties	N=1	25%
Local business network ties	N=1	25%
Social network management skills	N=1	25%
Situation awareness	N=1	25%
Mistake and learning culture	N=2	21%
Usage of expert knowledge	N=1	17%
Open space for experiments	N=2	21%
Dialogue culture	N=1	17%
Transperancy	N=1	25%
Balance of interests	N=1	25%
Differentiated personnel policy	N=1	25%
Level of reinvestment	N=1	30%
Yield ratio	N=1	30%
Sense of belonging	N=1	25%
Pride	N=1	25%
Trans-generational entrepreneurship	N=1	50%
Communication	N=2	25%
Monitoring	N=1	25%
Sense of responsibility	N=1	25%
Aggressiveness	N=1	25%

Table 19: Numbers of denomination and average % of the added factors of the additional dimension groups (own presentation)

Culture

Culture	Weight before	Actual weight
Team orientation	19%	23%
Optimism	20%	24%
Network-orientation	23%	28%
Mistake and learning culture	21%	25%
Total sum	83%	100%

Table 20: Calculation of the weights regarding dimension group *culture* (own presentation)

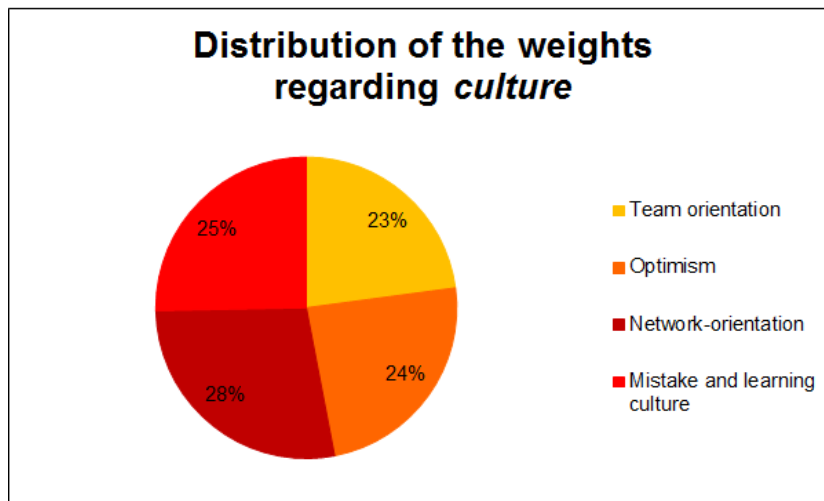


Figure 6: Distribution of the weights of *culture* (own presentation)

Leadership

Leadership	Weight before	Actual weight
Communication	25%	29%
Respecting skilled knowledge and competences	19%	22%
Open space for experiments	21%	25%
Future orientation	20%	24%
Total sum	85%	100%

Table 21: Calculation of the weights regarding dimension group *leadership* (own presentation)

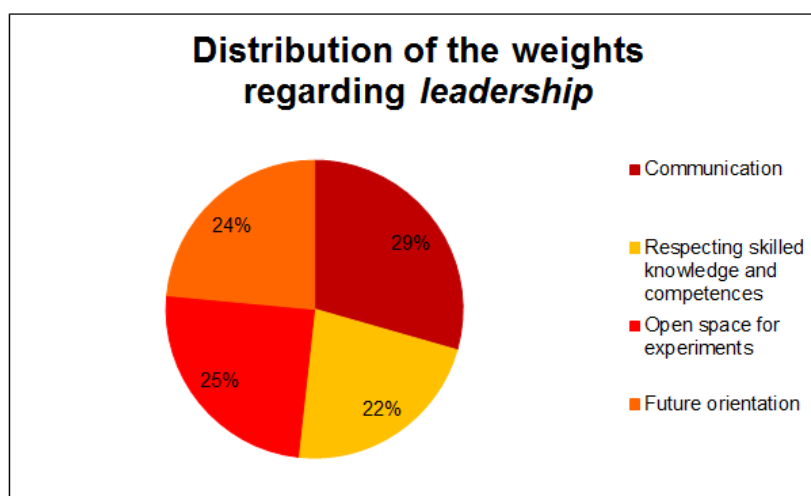


Figure 7: Distribution of the weights of *leadership* (own presentation)

6 Supporting table and figures for the transformation into *adaptability* and *resistance*

Following, the allocations regarding *adaptability* or/ and *resistance* of those factors, which were already given as a basis for the expert interviews, are listed within the table. Overall, twelve experts have answered the question.

Factor	Adaptability	Resistance	Both
Anticipation	N=10	-	N=2
Innovation	N=5	-	N=7
Understanding customer needs	N=7	-	N=5
Chances orientation	N=11	-	N=1
Governance	-	N=4	N=8
Goal- and solution-orientation	N=7	-	N=5
Resource management	N=5	N=1	N=6
Business continuity	-	N=8	N=4
Future orientation	N=7	-	N=5
Self-responsibility	N=3	N=3	N=6
Corporate culture	-	N=4	N=8
Network orientation	N=2	N=3	N=7
Well-trained and appropriately skilled staff	-	N=4	N=8
Trust	-	N=7	N=5
Cooperating	N=2	N=4	N=6
Ingenuity	N=11	-	N=1
Optimism	N=3	N=6	N=3
Non-commercial engagement	N=2	N=3	N=7
Employee identification with the business vision	N=7	N=2	N=3

Table 22: Results of the transformation into *adaptability* and *resistance* (own presentation)

In order to ensure a better overview, the allocations of the factors, which are part of the instrument, are headed subsequently.

The first figure illustrates the results of the dimension group *product/ service excellence*:

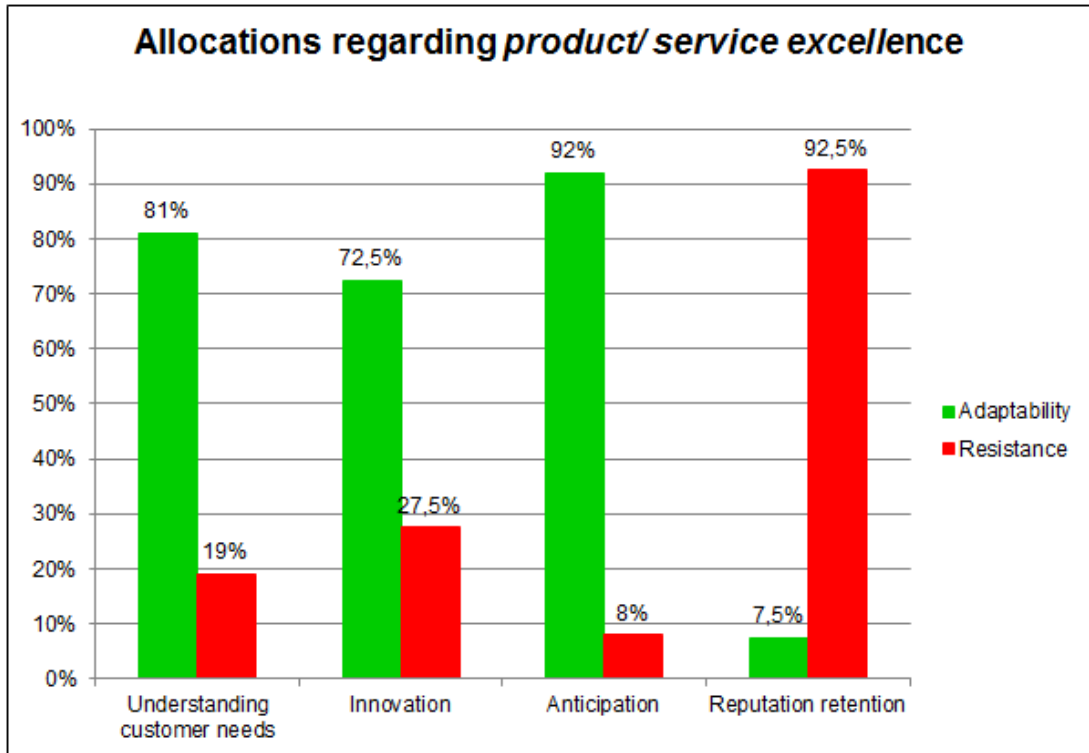


Figure 8: Allocations to the competences regarding *product/ service excellence* (own presentation)

The next figure represents the results of the dimension group *process reliability*:

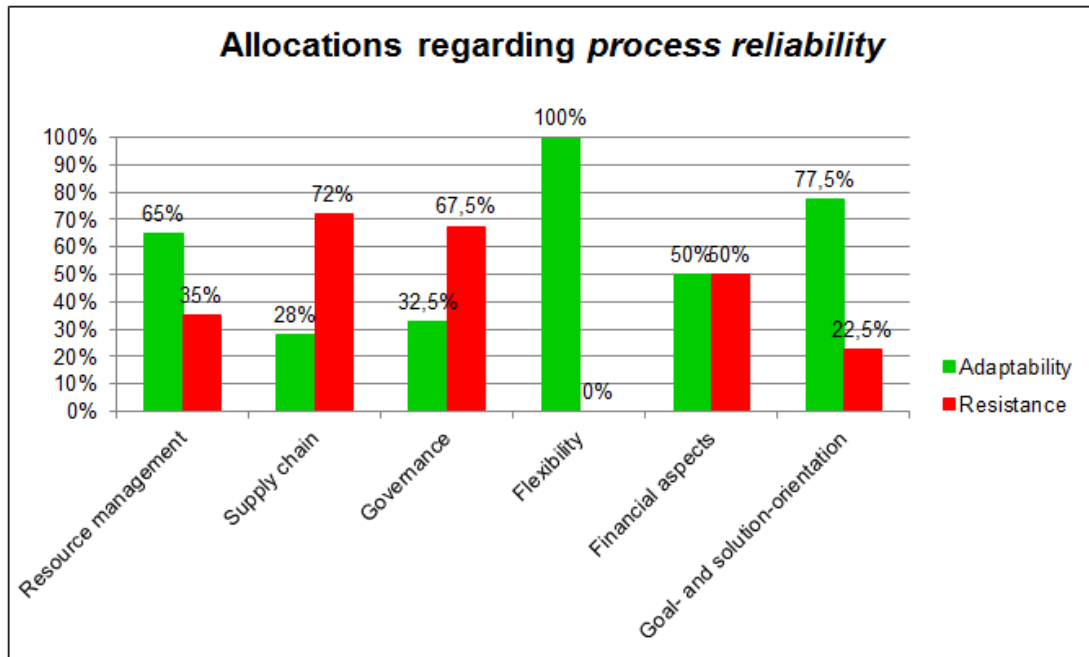


Figure 9: Allocations to the competences regarding *process reliability* (own presentation)

The figure below shows the results of the dimension group *individual strengths*:

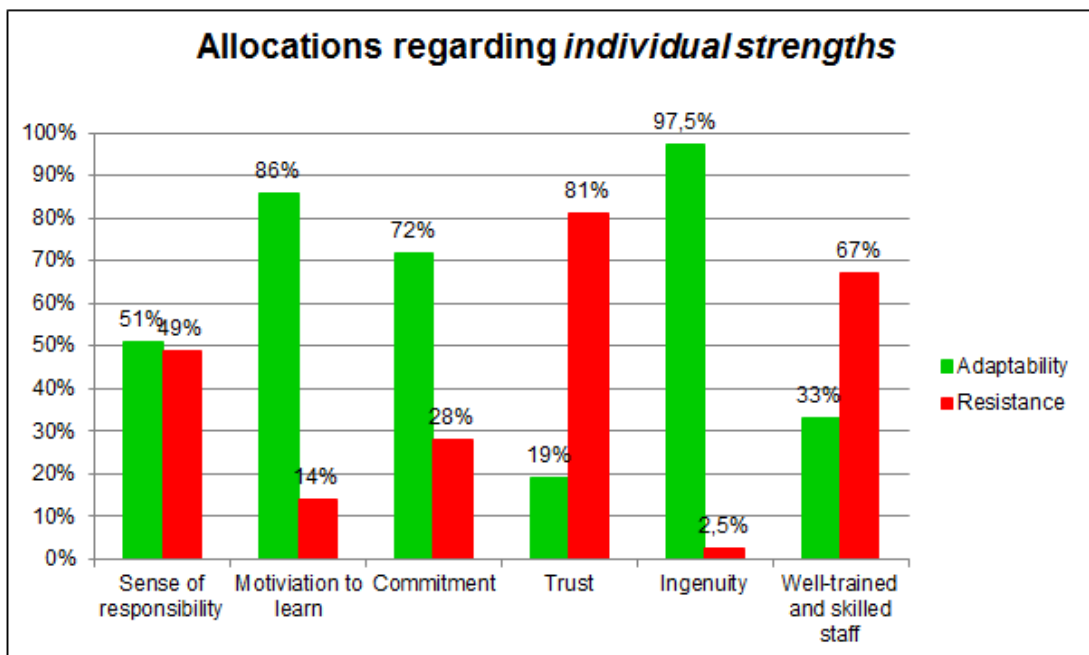


Figure 10: Allocations to the competences regarding *individual strengths* (own presentation)

Subsequently, the figure displays the results of the dimension group *culture*:

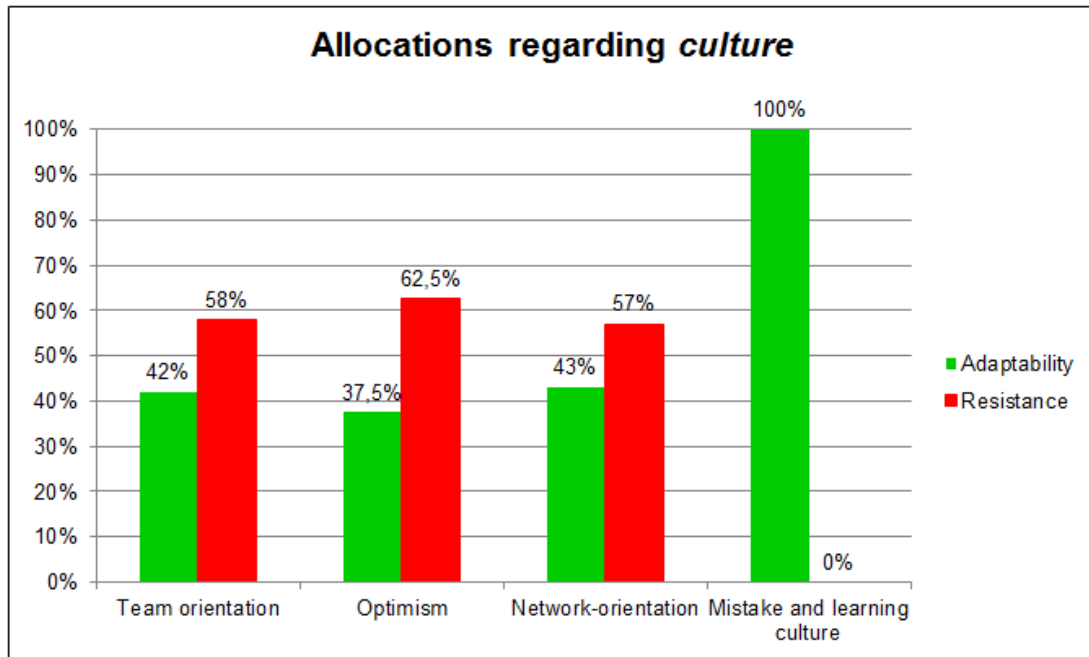


Figure 11: Allocations to the competences regarding *culture* (own presentation)

The following figure shows the results of the dimension group *leadership*:

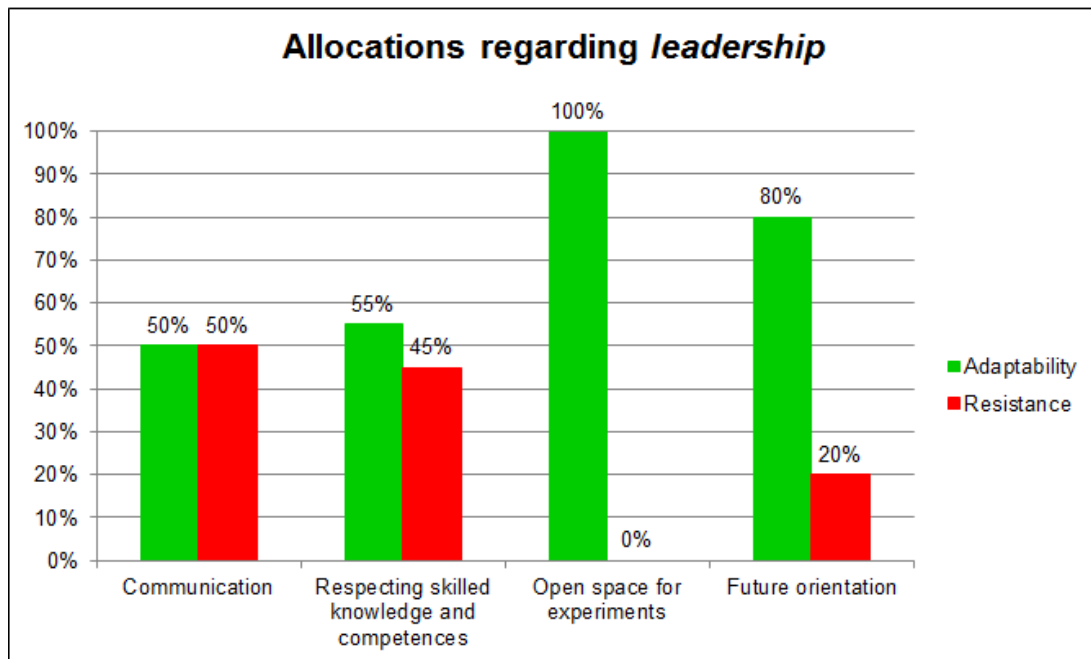


Figure 12: Allocations to the competences regarding *leadership* (own presentation)

The next figure depicts the overall percentages regarding the allocations to *adaptability* and *resistance* within each dimension group:

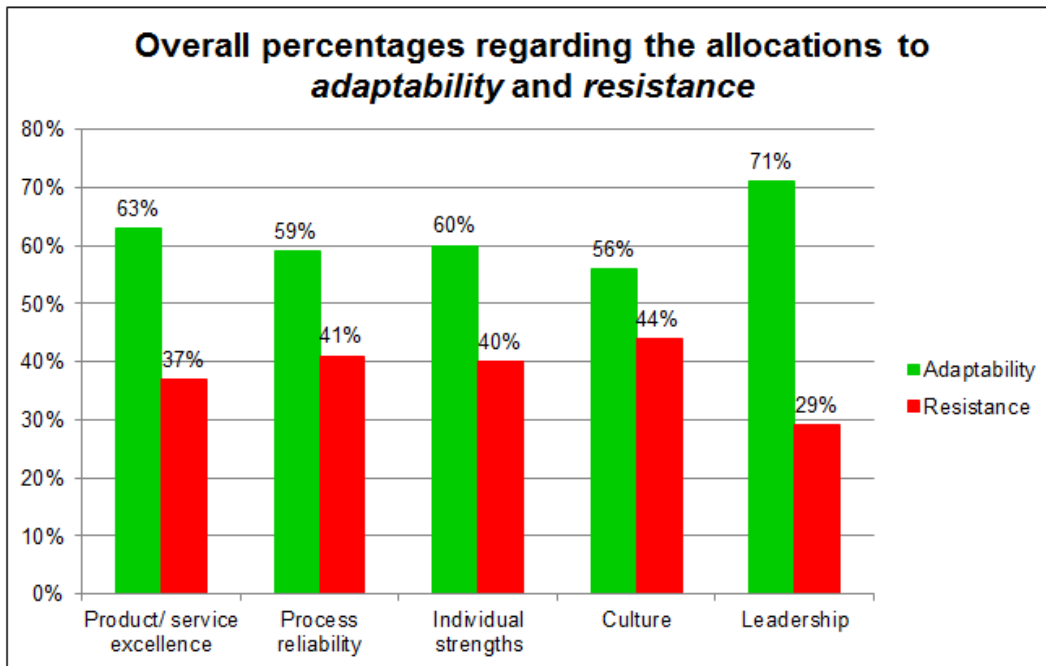


Figure 13: Overall percentages regarding the allocations to *adaptability* and *resistance* within each dimension group (own presentation)