

**Exploring Subjective Well-Being Concepts for a Deeper Understanding of  
Successful Aging**

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Master Thesis

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1<sup>st</sup> of July 2024

**Abstract**

This study investigates themes with Subjective Well-Being (SWB) concepts among older adults, focusing on differences across age groups and life satisfaction levels in the second half of life. Using data from the German Ageing Survey of 2,438 participants aged 40-85, qualitative responses from a sentence completion questionnaire (SELE) were analyzed through modern text mining approaches. Additionally, the study utilized quantitative data from the Satisfaction With Life Scale (SWLS). Latent Dirichlet Allocation (LDA) methods identified three primary themes within concepts of SWB: holistic views and family values, specific relationships and emotional challenges, and work-life and leisure balance. The study found a shift in concepts of SWB from younger adults (40-54), who were predominantly associated with holistic views and family values to older adults (55-69, 70-85), who focused on specific relationships and emotional challenges. Furthermore, the results support literature suggesting that the Paradox of Well-Being may only be evident until around age 70. These findings align with theories of successful aging which propose that adaptive responses and shifting priorities are crucial for maintaining well-being. However, the oldest age group in our sample (70-85) was predominantly in the low life satisfaction group, supporting previous literature, suggesting that, after a certain point of decline and loss maintaining well-being becomes increasingly challenging. The findings have practical implications for policymakers and healthcare providers in designing targeted interventions to enhance life satisfaction and well-being among older adults. Overall, the study contributes to the field of successful aging by highlighting the complexity of well-being constructs and offering insights into the dynamic interplay between hedonistic and eudaimonic elements of aging.

*Keywords:* Successful Aging, Paradox of Well-Being, Life satisfaction, Text-Mining, Topic, Modelling

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### **Exploring Subjective Well-Being Concepts for a Deeper Understanding of Successful Aging**

As individuals age, they often face significant changes and challenges in various aspects of life, including health, income, physical appearance, and social roles. These changes can lead to concerns about the potential negative impact on their well-being (Börsch-Supan, 2009; Momtaz et al., 2021). However, research on Subjective Well-Being (SWB) challenges these assumptions, revealing a paradox wherein older individuals maintain or even increase their SWB despite these challenges (Wettstein et al., 2016). This phenomenon, known as the Paradox of Aging, has prompted psychological lifespan theories to explore the mechanisms underlying this resilience, which contributes to successful aging (Buecker et al., 2023; George, 2006; Hansen & Slagsvold, 2012; Wiesmann & Hannich, 2014). The purpose of this study is to deepen the understanding of successful aging by examining different themes within self and life concepts, thereby contributing to the groundwork for developing and improving interventions aimed at supporting older adults in maintaining and enhancing their subjective well-being.

In gerontology, "successful aging" refers to the process of maintaining physical health, cognitive function, and emotional well-being as one grows older. It involves the absence of disease and disability, as well as active engagement in life, continued social interactions, and a sense of purpose (Carpentieri et al., 2017). Successful aging is important because it emphasizes the quality of life and the ability to adapt to age-related changes, promoting longevity and life satisfaction. This concept shifts the focus from merely extending lifespan to enhancing the overall experience of aging, thus supporting older adults in living fulfilling and productive lives (Estebarsari et al., 2020).

Moreover, a crucial component of successful aging is Subjective Well-Being (SWB), which encompasses an individual's self-perceived quality of life, including feelings of happiness, satisfaction, and fulfillment (Diener et al., 1999). Subjective Well-Being is essential because it reflects how older adults perceive their own aging process and overall life satisfaction, beyond just physical health alone. Emphasizing Subjective Well-Being ensures that the focus is on enhancing the quality of life and psychological resilience, allowing older adults to experience aging as a positive and enriching phase of life (Estebarsari et al., 2020; Lightsey, 2006).

### **Successful Aging and Lay Conceptions of SWB**

Building on the concept of successful aging, it is essential to explore the various adaptation strategies that older adults employ to maintain their well-being. These strategies, encompassing cognitive, emotional, and social dimensions, play a crucial role in helping individuals navigate the challenges associated with aging (Luhmann et al., 2012). Cognitive

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strategies include selective optimization with compensation, where they focus on high-priority tasks, enhance their skills in these areas, and use alternative methods to compensate for declines (Carpentieri et al., 2017). Engaging in lifelong learning, mindfulness, and using memory aids are also crucial for maintaining cognitive function (An et al., 2023).

Additionally, older adults often adjust their personal goals to align with their current capabilities and use downward comparison to boost their self-esteem by comparing themselves with those less fortunate (George, 2006).

Emotionally, older adults prioritize positive stimuli and experiences over negative ones, a phenomenon known as the positivity effect, which can also affect memory and attention processes (Carstensen & Mikels, 2005). This phenomenon aligns with the recognition that time is finite, prompting a shift in priorities as individuals age. Emotionally meaningful goals increasingly persist among older individuals, aiming to maximize positive emotions while minimizing negative ones (Carstensen, 1995). Socially, maintaining strong social connections and participating in community activities provide further emotional support and mental stimulation, which are vital for overall health. These strategies operate largely as unconscious mechanisms that help maintain SWB and a positive self-image even when encountering life circumstances of declining health and social loss (Ryff, 1991).

There is a common agreement on the importance of these self-regulation and adaptation strategies as key predictors of SWB within the quest of successful aging (Bandura, 1997; Heckhausen & Schulz, 1995; Lachman, 2006). However, little is known about laypersons' conceptions of SWB, which are believed to reveal the core of a person's sense of meaning and self-definition, and have important implications for understanding successful aging (McMahan & Estes, 2011).

### **Multidimensional Perspective on SWB: Hedonism and Eudaimonism**

Although there are numerous variations and often complex attempts to grasp conceptions of SWB, they seem to fall into distinct categories centered around two main dimensions: hedonism and eudaimonism (Ryan & Deci, 2001). The predominant view among hedonic psychologists is that well-being is a subjective experience based on three components: cognitive life satisfaction, the presence of positive affect, and the absence of negative affect, which can be transferred to the context of hedonic conceptions of well-being (Armbrecht & Andersson, 2020; Diener, 1984; Diener et al., 1999; McMahan & Estes, 2011). Eudaimonism, on the other hand, dating back to ancient Greeks like Aristotle and Plato, is grounded in the belief that the good life is achieved through the attainment of knowledge and the pursuit of meaning in life (Ryff & Singer, 2008; Waterman, 1993). Hence, eudaimonic well-being encompasses factors such as personal growth, meaning, and engagement (Hansen

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& Blekesaune, 2022; Huppert & So, 2013). Together, these two approaches to SWB highlight the multidimensionality of well-being constructs.

Recognizing SWB as a multidimensional construct is crucial, given that different dimensions may have varying relationships with aging (Galambos et al., 2020). For example, adjusting comparison standards downward can enhance life satisfaction and promote positive cognitive well-being adjustments (hedonic well-being). However, the loss of health and social networks may cause a shift in one's value system to maintain a sense of meaning in life (eudaimonic well-being). Furthermore, while a sense of control may decline (hedonic well-being), personal meaning (eudaimonic well-being) appears to remain stable or even increase with age (Steger et al., 2009).

### **Age-related Differences in Lay Conceptions of SWB**

Although prior research has significantly advanced our understanding of laypersons' conceptions of Subjective Well-Being (SWB), little is known about age-related differences in these conceptions. The exploration of SWB concepts is particularly popular in gerontology, as individuals continually construct and reconstruct meaning by reinterpreting their experiences of aging, self, and life in response to perceived and expected changes (Westerhof et al., 2001). This shift in value systems is generally attributed to the increased occurrence of significant life events, which are more common for older adults (Heine et al., 2006; Rook, 2000). Younger people tend to have conceptions of well-being that lean more towards instrumental values such as ambitions and achievements, whereas older adults appear to ground their concepts of well-being more in terminal values such as pleasure, inner harmony, and concern for the welfare of others (Ryff, 1982; Ryff & Baltes, 1976). Together, these findings highlight the importance of understanding age-related differences in SWB for gaining deeper insights into successful aging, providing reason to expect age-related differences among conceptions of SWB. Specifically, this study aims to investigate age-related changes within the second half of life.

Previous research in the field of lay conceptions of SWB has already made valuable contributions to the study of successful aging. A study on lay concepts and successful aging found that about half of the responses emphasized global life evaluations, with satisfaction and quality being the most mentioned subcategories. Older respondents tended to prioritize global evaluations, while younger ones emphasized specific domains and intrapersonal aspects (Westerhof et al., 2001). Another study on laypersons' conceptions of well-being identified four central dimensions: the experience of pleasure, avoidance of negative experience, self-development, and contribution to others. Their findings indicated that younger adults emphasize more the experience of pleasure and self-development, whereas older adults prioritize the avoidance of negative experiences (McMahan & Estes, 2012).

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Together, this body of research emphasizes that different dimensions of SWB are meaningful during different stages of life.

### **Novel Methodological Approach: Text Mining**

Building upon previous research, this study seeks to further explore the relationship between SWB constructs, life satisfaction, and age dynamics. To date, studies of lay concepts of SWB have mostly been deductive. Novel text mining approaches such as topic modeling allow the analysis of large amounts of text data to discover topics based on patterns in the data without predefined categories or theories in a bottom-up approach.

Text mining, also known as text analytics, is the process of extracting valuable insights and knowledge from unstructured textual data (Aggarwal & Zhai, 2012). By employing Natural Language Processing (NLP) algorithms, text mining uncovers patterns, trends, and valuable information hidden within large volumes of text (Iliev et al., 2015; Yu et al., 2011). One of its significant advantages is its efficiency, as it automates the analysis of text data, thereby reducing the need for manual intervention and saving time and resources (Goldberg et al., 2020).

This research employs the text mining approach Topic Modeling. Topic Modeling is a statistical method used to uncover abstract topics within a collection of documents. It is particularly useful for discovering the hidden thematic structure in large text corpora without requiring predefined labels or annotations (Blei et al., 2003; Nikolenko et al., 2017). With the considerable sample size of 2,438 respondents from the German Aging Survey, this methodological approach allows the exploration of themes within SWB Concepts and facilitates a more profound understanding of aging individuals. It sheds light on the complex interplay between SWB construction, manifested through self and life concepts, age, and life satisfaction.

### **Current Study**

To conclude, the specific aim of this study is to explore the distinct themes within lay concepts of SWB and to examine the relationships between these themes, age groups, and life satisfaction groups. By utilizing novel text mining techniques, this research aims to provide a comprehensive understanding of how Subjective Well-Being is conceptualized across different stages of life. This study contributes to the field of gerontology by highlighting the complexity and multidimensionality of well-being constructs, particularly focusing on the dynamic interplay between hedonistic and eudaimonic elements. The findings are expected to offer valuable insights into how different age groups maintain or enhance their well-being, to optimize interventions and policies aimed at promoting successful aging. This research not only addresses a significant gap in the literature concerning age-related differences in lay

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conceptions of well-being, but also advances the methodological approach in analyzing large-scale text data in psychological research.

Given the insufficient amount of research examining lay conceptions of SWB, this study was designed to be exploratory. The first research question aims to identify the distinct themes within lay concepts of SWB. Building on this, the second research question aims to investigate bivariate relations among themes of SWB and thus can be subdivided into three research questions. Namely, the present study is interested in the relationship between age group and life satisfaction group, age group and themes, as well as life satisfaction groups and themes. The third research question aims to explore the relationship between all three variables simultaneously. In specific, the third question investigates the relationship of age groups and themes on life satisfaction. This can be formulated with the following three research questions:

**RQ1:** What are the distinct themes within lay concepts of SWB?

**RQ2:** Bivariate relations between among themes, age and life satisfaction

*RQ2a:* Is there a relation between age group and life satisfaction group?

*RQ2b:* Is there a relation between age group and themes?

*RQ2c:* Is there a relation between life satisfaction group and themes?

**RQ3:** What is the relationship of age groups and themes on overall life satisfaction?

## Methods

The study employed a mixed methods approach, blending qualitative exploration of self- and life conceptions with quantitative measurement of life satisfaction. Using an exploratory design, it analyzed responses to open-ended questions from the SELE questionnaire to uncover topics and differences across age and life satisfaction levels.

### Participants and Procedure

This study utilized data from the German Aging Survey, conducted in 1996 among independently living individuals aged 40-85 (Dittmann-Kohli et al., 2001). The survey aimed to investigate the connections between objective life conditions and personal perceptions of self and life among older adults (Kohli & Künemund, 2019; Dittmann-Kohli et al., 2001). A random sampling of citizens in municipalities in Germany resulted in an original sample of 4838 respondents from 290 cities across all 16 states of Germany (50% response rate). Despite the large sample size, response rates varied across demographic groups, with unhealthy older adults, women, and West Germans being less likely to participate. Consequently, the final sample exhibited biases, such as an overrepresentation of healthy elderly individuals and a slight overrepresentation of East German individuals and men. These biases should be considered when interpreting the results.

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Participants were interviewed at home by a trained interviewer. The interview began with a sentence completion instrument (SELE, see under instruments below), which the participants completed themselves. In this instrument, participants provided spontaneous descriptions about self and life to induce meaningful themes of SWB. Interviewers provided assistance only if participants encountered difficulties with reading or writing. The face-to-face interviews lasted about 1.5 hours, covering various life domains (family, social relationships, work, activities, living arrangements, health, and income) and asking for respondents' evaluations of these areas. They also left a paper-and-pencil questionnaire with additional psychological scales, attitudinal items, and questions about chronic conditions, which respondents completed on their own. The questionnaire was later collected by the interviewers (return rate of 83%).

After cleaning the data for missing values from the open question SELE questionnaire and the life satisfaction scale, a data set of 2487 participants was obtained. After excluding participants outside the age range of 40 to 85 years, the final sample of the present study consisted of 2,438 participants. To compare differences between groups, participants were assigned to one of three age groups: 40-54 years (n=828), 55-69 years (n=882), or 70-85 years (n=728), and a group of life satisfaction levels (see life satisfaction instruments).

### **Instruments**

The study primarily focused on two instruments from the survey: the SELE sentence completion questionnaire and the Satisfaction with Life Scale (SWLS).

#### ***Sentence Completion Questionnaire (SELE)***

The SELE questionnaire, developed by Dittmann-Kohli and Westerhof (1997), diverged from traditional qualitative inquiries by offering a unique approach to understanding respondents' perceptions of well-being. Unlike structured methods that impose predefined items and response formats, the SELE invited participants to express themselves freely, inspired by Bruner's (1990) framework on meaning. Through narrative responses to sentence completions, researchers could extract meaningful insights into various dimensions of well-being, allowing for a more nuanced exploration of self and life concepts. Grounded in the concept of personal meaning systems, the SELE encompassed diverse domains such as psychological and physical self, activities, social relationships, and temporal evaluations. As presented in Table 1, its 28 sentence stems prompted participants to articulate desires, beliefs, evaluations, and temporal perspectives, facilitating comprehensive exploration. The sentence stems were worded either positively, negatively, or neutrally, and related to present, future, past, or neutral anticipations. Previous versions showed fewer future stems, resulting in more non-responses. Negative prompts also yielded more non-responses than positive ones. To balance this, slightly more negative prompts were included.



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**Table 1***28 Open Questions of the SELE Questionnaire sorted by Evaluation of Word Stem*

Evaluation		
Positive	Negative	Neutral
1 I am quite good at ...	3 It is difficult for me...	10 I often feel...
6 Most important for me is...	5 My weaknesses are...	16 My body...
13 I feel really good...	7 It annoys me...	23 In Comparison to others...
4 I am proud of...	19 What's been bothering me recently is...	9 compared to the past...
14 I intend to...	25 I feel rather miserable when...	11 In the next few years...
21 I plan to...	17 I am afraid that...	15 Later, when I am older...
2 I would like to...	24 I fear that...	8 When I think about myself...
18 It would be nice if...	27 When I look at my past life, I regret...	12 I think that I...
26 What I like about getting older...	22 What I don't like about getting older...	20 I have noticed that I...
	28 When I'm no longer capable of doing certain things...	

*Note.* The number in front of the sentence stem indicates its position in the questionnaire.

Reliability tests demonstrated satisfactory intercoder agreement, while validity assessments showed associations with established measures of well-being and life satisfaction. Stability analyses indicated the instrument's ability to capture enduring cognitions over time. Moreover, the SELE instrument had been utilized in various research contexts, including age-comparative studies, cross-cultural research, and representative survey research, highlighting its value in understanding subjective interpretations of self and life across diverse age groups and cultural backgrounds, particularly in aging research (Dittmann-Kohli & Westerhof, 1997; Westerhof et al., 2001).

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### *Satisfaction With Life Scale (SWLS)*

Data on Subjective Well-Being was gathered with the Satisfaction with Life Scale (SWLS), consisting of 5 items, offering a quantitative view into participants' satisfaction with their lives with total scores ranging from 5 to 25 (Pavot & Diener, 1993). This 5-item scale with a 5-point answering format was rated to have good reliability (Westerhof, 2001). To analyze the data, the aim was to divide the participants into three approximately equal groups. While the initial goal was to create exact tertiles (each containing 33% of the participants), practical adjustments were made to ensure that each score was represented in only one group. This approach was chosen to enhance interpretability and maintain logical consistency. The final groups were the low life satisfaction group with scores 5-9 ( $n = 832$ ;  $m = 7.3$ ), the medium life satisfaction group with scores 10-12 ( $n = 757$ ;  $m = 10.8$ ), and the high life satisfaction group including scores 13-25 ( $n = 849$ ;  $m = 16.0$ ). This method resulted in approximately equal group sizes while ensuring that the categories were meaningful and interpretable. The decision was made to avoid splitting identical scores across different groups, thus preserving the integrity of the analysis (Streiner, 2002).

### **Data Analysis**

#### **Programs for Analyses**

This study utilized version 3.34.0 of the Orange Data Mining Platform for the topic modeling analysis. Orange is an open-source platform developed with Python (Demšar et al., 2013). The program facilitates the execution of data mining and machine learning tasks by connecting analysis modules into a visual workflow or pipeline, providing support for a wide range of analysis and processing routines. For the statistical analyses, IBM SPSS Statistics (Version 29) was used. SPSS is widely respected and extensively used in academic research due to its robust capabilities for statistical analysis and is considered reliable and valid for various types of statistical tests and data analysis tasks.

#### **Pre-processing Text in Orange**

Text pre-processing played a crucial role in preparing unstructured text data for text mining analyses, ensuring optimal readiness and enhancing data quality to facilitate the extraction of meaningful insights (Anandarajan et al., 2019). The primary objective of pre-processing was to standardize vocabulary, reduce data dimensionality, and enhance semantic meaning, thereby facilitating easier interpretation and analysis. Before initiating the data analyses, the most frequently used words were visually represented twice in word clouds, once before and once after preprocessing, to provide a comprehensive overview of the key words pertaining to self and life concepts.

For current study, the first step of data pre-processing involved only the transformation of converting text to lowercase. Removal of accents was kept as the German

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language contains many "Umlaute" (special characters) such as 'ü', 'ö', and 'ä', which were desired to remain visible. Parsing HTML and removal of URLs was not relevant for this study, as only subjective texts from participants filled into the SELE questionnaire were used. Tokenization, which breaks text into smaller parts to help machines understand human language better, was applied using the Regexp option. This option kept full words and omitted everything else, such as punctuation. Following this, the data underwent normalization using the Porter Stemmer, which applies predefined rules to reduce words to their base forms. This method was chosen because it provided the most recognizable and highest number of word variations compared to other options. Subsequently, the data underwent filtering to remove stop words. Stop words refer to words that are frequently used in a language, which can challenge the identification of specific patterns within text words (e.g., 'and', 'or', 'in'). The language filter was set to German, and an additional list of custom stop words was uploaded (Table A in Appendix A).

### **Analysis regarding Themes within Lay Concepts of SWB**

In the present study, lay conceptions of SWB are defined as a system of beliefs about the nature and experience of well-being, revealing important aspects of one's worldview and self-concepts. Themes within accounts of self and life can therefore be seen as valuable sources of personal meaning and indicators of SWB (Dittmann-Kohli & Westerhof, 1997; Seligman, 2011; Steger et al., 2009). Therefore, to answer the first research question and examine themes within subjective well-being (SWB), SWB is operationalized through participants' descriptions of their self and life in their own words. These descriptions were analyzed using Latent Dirichlet Allocation (LDA), a robust technique in topic modeling. LDA enabled the identification of latent themes within textual data in an unsupervised manner (Blei et al., 2003; Iliev et al., 2015). By applying LDA to the responses gathered from the 28 stems of the SELE questionnaire, prevalent topics regarding concepts of self and life were discovered, addressing the first research question.

This analysis was executed using the 'Topic Modelling' widget within the Orange platform, which allows users to establish a text corpus and automatically uncover underlying topics. The widget provides options such as Latent Dirichlet Allocation (LDA), Latent Semantic Indexing (LSI), Hierarchical Dirichlet Process (HDP), and Negative Matrix Factorization (NMF). LDA, in particular, demonstrated promising results in topic extraction, especially with substantial amounts of text data, hence its selection for this study (Liu, 2015).

To determine the ideal number of topics for the analysis, this study compared both coherence scores and log perplexity scores for models with one to ten topics, as presented in the output of the 'Topic Modelling' widget in Orange. Coherence scores measure the interpretability and meaningfulness of topics generated by the LDA model, evaluating how

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semantically similar the words within each topic are, which directly correlates with human interpretability. High coherence scores generally indicate that the topics are well-formed and make sense to humans. This makes them particularly useful for applications where topic interpretability is crucial, such as in exploratory data analysis and qualitative research like the present study (Röder et al., 2015).

Log perplexity measures how well a probabilistic model predicts a sample, with lower perplexity indicating better performance. Although useful for assessing the statistical fit of the model to the data, lower perplexity does not always equate to better interpretability of topics. Research suggests that focusing solely on perplexity can lead to models that are statistically sound but produce topics that are not meaningful to humans. Nonetheless, log perplexity was used as a valuable supplementary measure to ensure the model's predictive performance (Rüdiger et al., 2020). Since the primary goal of this study was to extract interpretable and meaningful topics, coherence scores were the primary criterion, with log perplexity serving as a supplementary measure.

LDA topic modeling analysis, conducted with specific keywords across distinct topics, revealed nuanced differences in how respondents articulated different thematic topics of self and life constructs within the SELE responses. Since these keywords alone in this study did not provide an obvious interpretation, further analysis of the topics was needed. In Latent Dirichlet Allocation (LDA), a "topic load" (also known as "topic distribution" or "topic proportion") refers to the distribution of topics across a document. It indicates the extent to which each topic contributes to a particular document (Blei et al., 2003). By examining the topic load, the dominant topic of each document could be identified. The topic with the highest proportion was considered the most representative of the document's content. Hence, each document was assigned to one topic based on the highest topic probability. The higher the topic probability, the more representative a document is of that specific topic. To further explore the topics identified by the LDA model, all keywords were examined for differences in their contextual uses within the 10 most representative documents for each topic.

### **Bivariate Analyses among Themes, Age Group and Life Satisfaction**

To address the second research question, a combination of Orange and IBM SPSS was used (Version 29) for the analyses. This research question was divided into three sub-questions. First, the relationship between age groups and life satisfaction groups was examined. Second, the relationship between age groups and assigned topics was explored. Finally, the relationship between assigned topics and life satisfaction group was investigated. Using the box plot widget in Orange, three overall Chi-square Tests of Independence were performed to assess each relationship. The distributions and frequency contingency tables of

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each pair of tested variables were calculated, analyzed, and subsequently visualized, allowing for the exploration of the relationships across these categorical variables (Agresti, 2012). Cramér's  $V$  will be used as an indicator of strength.

The assumptions of the Chi-square test, including expected frequency counts, were checked and met. If one of these overall Chi-square tests was significant, a post hoc analysis of the group levels was conducted to identify the specific pairs of groups that differed significantly within that relationship. Pairwise comparisons were performed, and given the multiple comparisons involved, a Bonferroni correction was applied to control for Type I error (false positives). This correction ensured that the likelihood of incorrectly rejecting a null hypothesis was minimized. The standard alpha level ( $\alpha = 0.05$ ) was divided by the number of analyses (9) of the main Chi-square tests, resulting in an adjusted alpha of 0.0056. Additionally, adjusted residuals were calculated to pinpoint the specific contributions to the main analyses. Adjusted residuals were used to compute the individual p-scores for each cell via their cell Chi-square values in SPSS and compared with the adjusted confidence level. P-values below this threshold of  $\alpha = .0056$  were considered statistically significant.

### **Multivariate Analysis for Themes, Age on Life Satisfaction Simultaneously**

To answer the third research question, which aimed to explore the relationship of topics and age group on general life satisfaction, a two-way ANOVA was conducted with life satisfaction score as the dependent variable (range: 5-25), and the two factors, age group and topics. The main effect of age group (40-54,55-69,70-85), the main effect of topics (level =  $n$  topics), and the interaction effect of age group and topics on life satisfaction were investigated. For significant results of the ANOVA, LSD post-hoc tests were performed to compare the means of each group pair and identify which specific groups differ significantly in terms of their distributions.

## **Results**

### **Themes within Lay Concepts of SWB**

The first research question aims to identify the distinct themes within lay concepts of SWB. The first representation (Figure 1) served as an initial exploration of the text corpus, while the second (Figure 2) was generated post-preprocessing. Comparing these two word clouds, the post-preprocessing version already provided an informative overview of the most crucial words related to the participants' self and life concepts. The most prominently displayed words were 'famili(e)' (family), 'leben' (life), 'gesund' (health), 'zeit' (time), 'kinder' (children), and 'zufrieden' (satisfaction), illustrating the most important aspects of people's concepts of SWB.

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**Figure 1**

*Word cloud Including Word Weights Before Pre-Processing of the Data*

**Figure 2**

*Word cloud Including Word Weights After Pre-Processing of the Data*



Before conducting the LDA analysis for topic investigation, the number of topics had to be chosen. The coherence scores for a range of topics, up to ten, are depicted in Figure 3. In this study, the highest coherence score was observed with the model featuring three topics (0.298), while the lowest score was with the model comprising ten topics (0.275). Scores for models incorporating 1, 2, 4, 5, 6, 7, 8, and 9 topics fell between these extremes, ranging

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from 0.298 to 0.281. Coherence scores increased up to three topics and then gradually declined.

Additionally, the log perplexity scores were examined. As shown in Table 2, the log perplexity scores gradually increased from 13.553 to 15.208 as the number of topics increased from 1 to 10, indicating that lower topic numbers corresponded to better predictive power and generalization to unseen data. Although the coherence score for four topics (0.29835) was very close to that of three topics (0.29841), the small but notable difference of 0.0001, along with a smaller log perplexity (13.900 for three topics vs. 14.257 for four topics), suggested that the optimal number of topics for this LDA analysis was three.

**Table 2**

*Coherence Scores and Log Perplexity associated to the Number of Topics for LDA Analysis*

<i>Number of topics</i>	<i>Coherence scores</i>	<i>Log perplexity</i>
1	0.284	13.552
2	0.285	13.553
3	0.298	13.900
4	0.298	14.251
5	0.290	14.446
6	0.283	14.662
7	0.281	14.844
8	0.280	14.950
9	0.289	15.058
10	0.275	15.208

The ten keywords presented by the LDA widget in Orange associated with each topic are shown in Table 3. Notably, the words "gesund" (healthy), "gesundheit" (health), "zufrieden" (satisfied), and "leben" (life) appear in all three topics. "arbeit" (work) and "arbeiten" (to work) are present in Topics 1 and 2. "zeit" (time) and "familie" (family) are also present in Topics 1 and 2. Topics 2 and 3 did not share any keywords that are not already present in Topic 1. Therefore, Table 4 presents each keyword, using an example completion by one of the ten participants with the highest topic load for that topic from the SELE questionnaire. This is to illustrate the different uses and meanings of the words in various associated topics. To ensure clarity and maintain precision, this table is presented only with English translations. See Table B1 in Appendix B for complete table with the original German

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phrases. Further, see Appendix C for more details on the analysis and additional example phrases.

**Table 3**

*Overview of Keywords presented from the LDA Analysis.*

Topic	Topic keywords
1	Familie (family), Leben (life), Arbeit (work), Gesundheit (health), Zeit (time); Zufriedent (satisfied), gesund (healthy), gesundheitlich (health-related), arbeiten (work), Frau (woman)
2	Leben (life), allein (alone), Kinder (children), Zeit (time), Menschen (people), gesund (healthy), zufrieden (satisfied), Familie (family), Gesundheit (health), Mann (man)
3	Gesund (healthy), Arbeit (work), krank (sick), arbeiten (work), leben (live), Gesundheit (health), Zufrieden (satisfied), fahren (drive), Urlaub (vacation), haus (house)

**Tabel 4**

Example Phrases of Keywords in Topics.

	Topic 1	Topic 2	Topic 3
	Holistic Views and Family Values	Specific Relationships and Emotional Challenges	Work, Life and Leisure Balance
Keyword			
Health	„The most important thing for me is health in the family” (2383)	„The most important thing for me is my health” (1442)	„Later when I am older and the money is still enough and I stay healthy, more vacations and walks” (4485)
Life	„I am proud of... living in the circle of my family“ (2383)	„I am proud that I cope so well with life, because I lost my husband a year ago” (1655)	„I have decided to do more for a healthy life“ (1298)
Time	"In the coming years, I hope to have more time for family and leisure” (19)	„I can still remember the old times quite well” (1001)	“Later, when I am older, I will have a lot of time for my hobby” (2149)
Satisfaction	„I have found that I can now live more contentedly and happily“ (148)	„When I think about myself, I am not dissatisfied. My husband and I raised six children to be decent people” (1655)	„In the coming years, I want to live in peace and contentment” (1298)



## SWB CONCEPTS AND SUCCESSFUL AGING

Family	„The most important thing for me is the health and well-being of the family” (19)	„What has been bothering me lately are serious illnesses and deaths in the family” (2670)	Not important for this topic
Work/to work	„I am bothered by the unemployment in society“ (4003)	Not important for this topic	„I intend to work as long as I can“(1567)
Women/Wife	„I feel truly comfortable when I am on vacation with my wife, together with friends, when all family members are healthy” (2036)	Not important for this topic	Not important for this topic
Children	Not important for this topic	„In the coming years, I would like to continue accompanying my children's life path” (3864)	Not important for this topic
People/Humans	Not important for this topic	„What has been bothering me lately is the violence among people, especially when it comes from young people” (4093)	Not important for this topic
Alone	Not important for this topic	„I am afraid that I will be completely alone when the children leave home” (740)	Not important for this topic
Mann	Not important for this topic	„When I think about myself, I have to say that I was happy with my life until my husband died” (1558)	Not important for this topic
Vacation	Not important for this topic	Not important for this topic	„I intend to go on vacation soon“(2932)
To Drive	Not important for this topic	Not important for this topic	„I can drive a car quite well” (2932)
Sick	Not important for this topic	Not important for this topic	„What I dislike about getting older is that you usually get sick and the body doesn't function as well” (4026)
Home	Not important for this topic	Not important for this topic	„So richtig wohl fühle ich mich zu Hause in meinem Haus und Garten." (816)

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*Note.* This is a translation of the original phrases found in the appendix. The number in the patentees indicates the individual case number of the participants.

## SWB CONCEPTS AND SUCCESSFUL AGING

### *Introduction of each Topic*

The first topic provides a holistic view of health, life, and satisfaction, integrating family and individual aspects with a global perspective. Health is seen as fundamental for maintaining work, enjoying life, and supporting family members. Family is a core component, and life is viewed comprehensively through personal achievements and future intentions, as illustrated by phrases such as, „When I think about myself, I realize that my outlook on life has significantly improved since I started my own family” (3935). Work concerns include broader economic issues and personal job security, as demonstrated by phrases such as, „It is hard for me to understand that the state squandered the funds during good times” (2221). Time is anticipated as a future resource, reflecting on past and present experiences. For example, „What I like about getting older is that we have time for ourselves, for traveling, and enjoying life” (2036). Satisfaction is tied to personal and professional accomplishments, reflecting a comprehensive perspective on well-being, as one participant noted, „When I think about myself, I am satisfied with what I have achieved so far” (3935). Given these elements, this topic was labeled “Holistic Views and Family Values”.

The second topic focuses on individual health conditions, emotional impacts, and personal experiences, emphasizing the importance of interpersonal relationships. Participants mention personal losses, emotional challenges, and coping mechanisms, such as, „It is hard for me to experience that two of my children are unfortunately unemployed. Unfortunately, I can only support them a little” (1655), and „I often feel very unhappy after the death of my daughter Sabine” (1001). Health discussions center on personal health issues and their emotional and psychological impacts. Life is examined through specific relationships, with reflections on regret and managing relational dynamics, as shown by, „When I can no longer do certain things, I will certainly get help from my husband and my daughter with her family” (2547). Time is used in specific personal contexts, emphasizing healing and personal growth. Satisfaction is linked to relationships and overall life circumstances, with family viewed as a source of emotional support and happiness, „What I like about getting older is that my family is concerned about me” (2711). Complementary to the focus on interpersonal relationships, participants in this topic often express fear of being alone and facing life without their children or partner, “I am afraid that I will be left alone without my husband” (1001), „I am afraid that I will be completely alone when the children leave home” (740), and „It would be nice if I don’t have to stay alone” (2547). Given these elements, this topic was labeled “Specific Relationships and Emotional Challenges”.

The third topic combines personal health maintenance with practical and financial considerations, highlighting the importance of health in enabling a fulfilling life. Health is linked to daily activities, leisure activities, and financial stability, with a strong desire to stay

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healthy to maintain quality of life and a fear of becoming sick, „I have resolved to do more for a healthy life” (1298), „I feel really comfortable on vacation” (2149), „I would like to go on vacation more” (2932), and „I fear that I might get seriously ill one day” (1298). Life discussions focus on self-reflection, personal growth, and future goals. Work is approached from a personal perspective, emphasizing individual capabilities and job security concerns. For example, „I am afraid that I might lose my job or die too early” (4485), and „I believe that I have to work until I am 65” (2149). Time management is linked to health and future, while satisfaction involves health-related contentment and self-comparison, „I intend to live well together with my sister” (816), and „It would be nice if I stay healthy” (2932). This topic also highlights the contentment and peace found in oneself and at home, as illustrated by, „I feel really comfortable at home in my house and garden” (816), and „What I like about getting older is that one has more time for oneself” (2760). Given these elements, this topic was labeled “Work, Life and Leisure Balance”.

### *Overlapping and Unique Keywords*

Shared keywords across all topics included health, life, satisfaction, and work, but their meaningful differences in their use. In the context of "Holistic Views and Family Values", health referred to family health and collective well-being, while in "Specific Relationships and Emotional Challenges", it focused on individual health issues and their emotional effects. In "Work, Life, and Leisure Balance", health was about practical maintenance, personal reflections, and balancing work, health, and leisure activities. Similarly, the concept of "life" varied: in "Holistic Views and Family Values", it was a comprehensive view of life; in "Specific Relationships and Emotional Challenges," it was connected to relationships; and in "Work, Life, and Leisure Balance", it involved intrapersonal reflections and finding peace and balance. The notion of satisfaction also shifted across themes, from achievement-oriented satisfaction in "Holistic Views and Family Values" to relational dynamics in "Specific Relationships and Emotional Challenges," and health-related satisfaction in "Work, Life, and Leisure Balance." The keyword "work" ranged from broader economic concerns in "Holistic Views and Family Values" to personal work capabilities and job security in "Work, Life, and Leisure Balance."

The meaning of these themes is further illustrated by the context of the words shared across all themes and underscored by the keywords that are shared with only one other theme or are unique to them. For example, the concept of "time" varied, transitioning from a global perspective in "Holistic Views and Family Values" to specific personal contexts in "Specific Relationships and Emotional Challenges", reflecting individual experiences and life stages impacted by significant others. The interpersonal value and importance of people within the theme are demonstrated by keywords such as “children”, “people”, and “alone”. The theme

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"Work, Life, and Leisure Balance" highlights terms like "vacation", "fear of getting sick", "driving", and "house", demonstrating the desire for autonomy and self-actualization. The keyword "women/wife" was unique to "Holistic Views and Family Values", aligning with its core belief in family health and happiness.

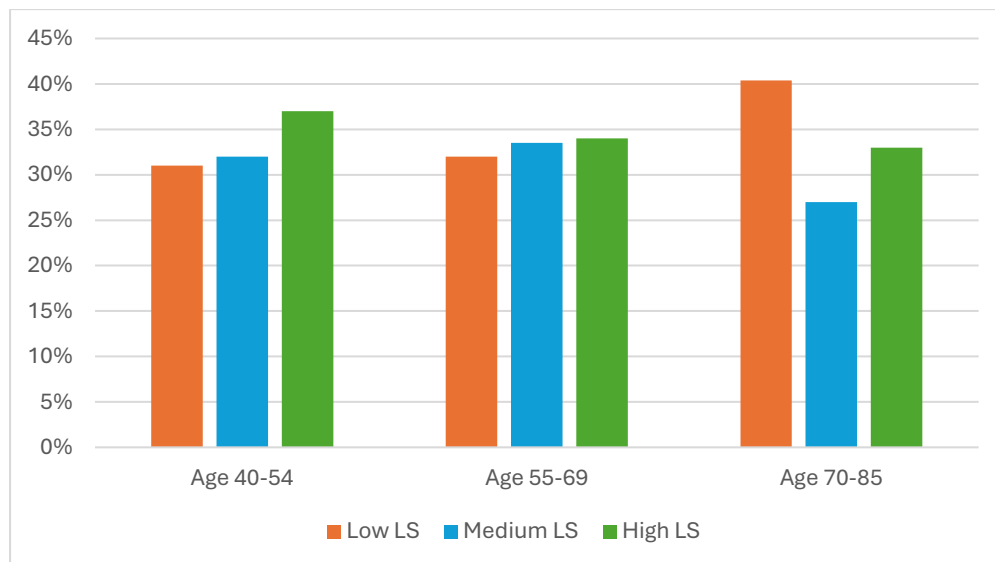
### **Bivariate Analyses among Themes, Age Group and Life Satisfaction**

The second research question investigated bivariate relations between three pairs. All three Chi-square analyses demonstrated significant differences between observed and expected frequencies of the variables of interest, indicating significant relationships for age group and life satisfaction group ( $\chi^2(4) = 20.58, p < .0001$ ), assigned topic and age group ( $\chi^2(4) = 82.04, p < .001$ ), as well as for assigned topic and life satisfaction group ( $\chi^2(4) = 14.05, p < .007$ ), addressing the three sub-questions of the second research question. Cramér's V indicated a weak effect for all three relationships (Cramér's  $V = .065$ , Cramér's  $V = .130$ , Cramér's  $V = .054$ , respectively). The results of the tests of independence for each sub-question are separate for each pair below.

#### ***Age and Life Satisfaction***

**Figure 3**

*Distribution of Satisfaction Level across Age Groups*



*Note.* The Y-axes indicates the percentage of the specific life satisfaction group (LS) within the given age group.

Post-hoc analysis revealed one significant finding: individuals in the age group 70-85 were significantly more likely to be in the lowest satisfaction group than in the other life satisfaction groups, as shown in Figure 3. Notably, the younger groups of the second half of life (40-54, 55-69), show both the lowest prevalence of low life satisfaction and the highest

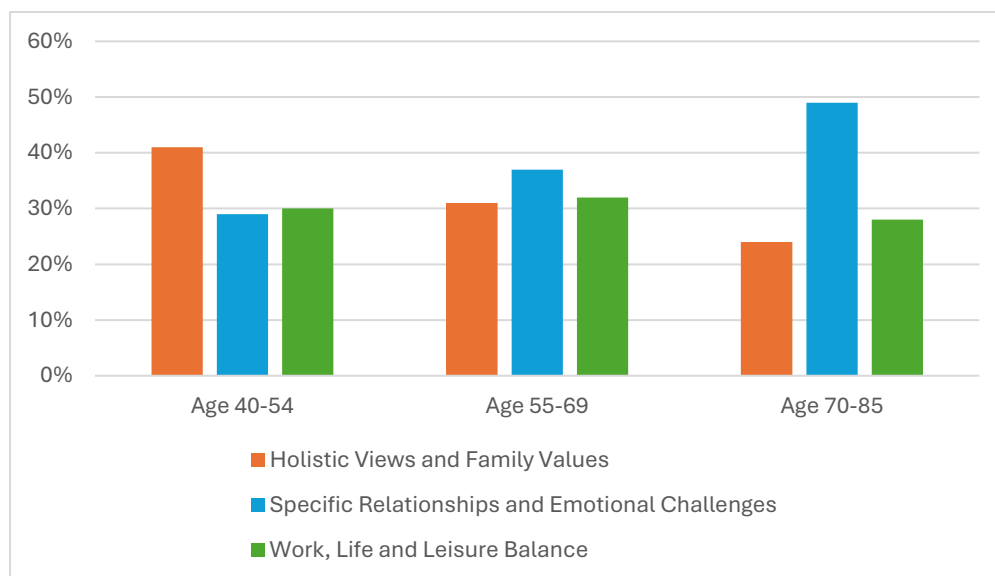
## SWB CONCEPTS AND SUCCESSFUL AGING

prevalence of high life satisfaction, suggesting a general increase in life satisfaction up to age 70. The overall picture indicates a decline in high life satisfaction and slight increase in low life satisfaction with advancing age groups. For the distribution table, see Table D1 in Appendix D.

### *Age Group and Topics*

**Figure 4**

*Distribution of Topics across Age Groups*



*Note.* The Y-axes indicates the percentage of the specific topic within the given age group.

Examining the relationship between age group and topics visually, as indicated by Figure 4, the most prevalent topic for the youngest age group (40-54) is "Holistic Views and Family Values". The prevalence of "Specific Relationships and Emotional Challenges", increases with progressing age group, peaking in the oldest age group (70-85). "Work, Life, and Leisure Balance" is most prominent in the middle age group (55-69).

Post-hoc pairwise comparisons identified four significant pairs. Specifically, the youngest age group is significantly associated with the topic "Holistic Views and Family Values" and has the smallest proportion of participants in "Specific Relationships and Emotional Challenges". In contrast, the oldest age group has significantly the smallest proportion in the "Holistic Views and Family Values" topic and significantly the largest in "Specific Relationships and Emotional Challenges". Additionally, most participants in the middle age group (55-69) were assigned to "Specific Relationships and Emotional Challenges". Overall, the least represented topic is "Work, Life, and Leisure Balance", whereas "Specific Relationships and Emotional Challenges" is the most represented topic,

## SWB CONCEPTS AND SUCCESSFUL AGING

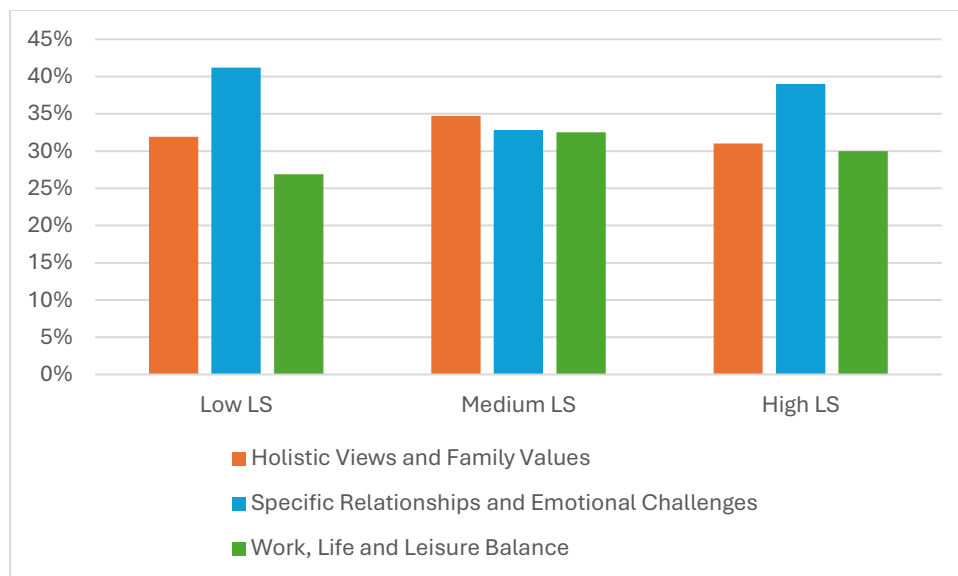
showing an increase in popularity with advancing age groups. For the distribution table, see Table D2 in Appendix D.

### *Satisfaction Group and Topics*

Although the overall Chi-Square test was significant, individual pairwise comparisons, after applying the Bonferroni correction, did not reveal significant differences between specific pairs of satisfaction levels and topics. This suggests that the overall pattern of satisfaction levels differs by topic, even though no single pairwise comparison was strong enough to be significant on its own. Despite the lack of significant differences between the groups, it can be seen in Figure 5 that most participants with low satisfaction were assigned to “Specific Relationships and Emotional Challenges”, most participants with medium life satisfaction were quite equally distributed with a slight preference for “Holistic Views and Family Values”, and most participants with high satisfaction were assigned to “Specific Relationships and Emotional Challenges”. For the distribution table, see Table D3 in Appendix D.

**Figure 5**

*Distribution of Satisfaction Level among Topics.*



*Note.* The Y-axes indicates the percentage of the specific topic within the given life satisfaction (LS) group.

### **Multivariate Analysis for Themes and Age group on overall Life Satisfaction**

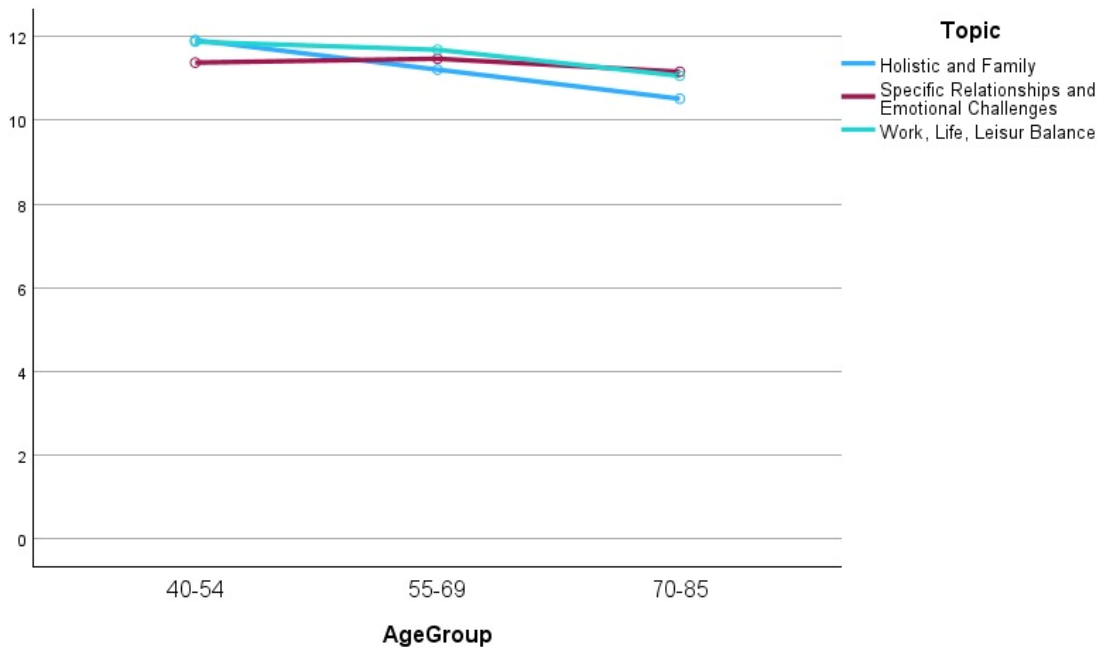
The third research question investigated the relationship between age group and topics on life satisfaction. The assumption of homogeneity of variances was not violated, as indicated by Levene’s test, which showed no evidence to reject the null hypothesis of equal variances ( $p = .06$ ). The ANOVA test revealed a significant main effect of age group on life

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satisfaction scores ( $F(2,2438) = 1.179, p < .001$ ). Multiple comparisons, using the Least Significant Difference (LSD) method for age groups and topics, revealed significantly lower life satisfaction for the oldest age group compared to the youngest ( $p < 0.001$ ) and the middle age group ( $p < .020$ ).

**Figure 5**

*The Distribution of Life Satisfaction among Topics and Age Groups.*



*Note.* The Y-axes displays the mean life satisfaction score of given age group and topic.

Descriptive statistics from the ANOVA showed that mean satisfaction scores were generally higher for younger age groups across all topics. However, the life satisfaction means were quite similar across topics and age groups, ranging from 10.52 to 11.92 as also seen in Figure 5 (See Table E1 in Appendix E for full table of descriptives). Between the age groups 40-54 and 55-69, life satisfaction scores decreased by 0.029. From age 55-69 to 70-85, the mean life satisfaction score decreased by 0.48. Together with the very small effect size ( $\eta^2 = .006$ ), these changes indicate a slight negative trend in life satisfaction scores with advancing age groups. No significant differences were found between the topics regarding satisfaction scores ( $p = .308$ ). Additionally, there were no significant interactions between age group and topics ( $p = 0.201$ ).

## Discussion

The current study aimed to investigate different themes within individual conceptions of SWB, as well as how these themes vary across age groups and levels of life satisfaction in the second half of life. Answering the first research question, three distinct topics were

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identified among concepts of SWB: “Holistic Views and Family Values”, “Specific Relationships and Emotional Challenges”, and “Work, Life and Leisure Balance”. For the second research question, the bivariate analyses demonstrated associations between age group and life satisfaction, theme and age group, and theme and life satisfaction. Notably, the youngest age group exhibited the highest levels of life satisfaction, which decreased with increasing age. Furthermore, the youngest age group was predominantly associated with “Holistic Views and Family Values”, which became less popular with advancing age, while the prevalence of “Specific Relationships and Emotional Challenges” was smallest in the youngest age group and increased with advancing age. Answering the third research question, multivariate analyses revealed that age serves as a predictor for life satisfaction. There was no interaction effect of age group and themes on life satisfaction.

### **Themes within Lay Concepts of SWB**

Regarding the first research question on different themes within SWB conceptions, three distinct themes were identified, each with considerable keyword overlaps that required further interpretation through context analysis. Despite common keywords such as “Health, Life, Satisfaction, and Work” across the three themes, there were notable differences in their meanings and usage between the topics. These differences were further emphasized by the unique keywords specific to each theme. For example, in the theme “Specific Relationships and Emotional Challenges”, shared keywords like “Health, Life, Satisfaction and Work” were primarily used in relation to concerns about specific individuals, such as a daughter or partner. Its focus on emotions and relationships was further supported by unique keywords for this theme, such as “children”, “people”, and “alone”. In sum, interpreting the results of the topic modeling analysis, the first theme emphasized a holistic view of health and life, with a core focus on family. The second theme highlighted individual experiences, particularly interpersonal relationships, and the fear of loneliness. The third theme centered on balancing work, life and leisure activities, stressing the importance of vacations and health maintenance for a fulfilled life.

Complementary to other research suggesting that lay conceptions of SWB integrate both hedonic and eudaimonic facets, the findings underscore the multidimensionality of SWB concepts as outlined in the introduction of this paper (King & Napa, 1998; McMahan & Estes 2011). The shared keywords “health”, “satisfaction” and “life” resonate with both approaches and are reflected throughout the three themes. The emphasis on values in “Holistic Views and Family Values” aligns strongly with eudaimonic principles, while the emotional focus in “Specific Relationships and Emotional Challenges” may be a stronger indicator of hedonic values. However, the importance placed on relationships in “Specific Relationships and Emotional Challenges” also supports eudaimonic principles. Similarly, “Balancing Work,



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Life and Leisure” connects well with hedonic well-being, emphasizing the enjoyment of life and stress avoidance, and relates to eudaimonic well-being through the achievement of personal goals and the maintenance of autonomy.

These findings highlight the complex interplay between hedonic and eudaimonic elements in lay conceptions of SWB, suggesting the importance of both for the construction of self-perspectives and worldviews. Practically, this insight can inform interventions aimed at improving well-being by addressing both immediate emotional needs and longer-term goals related to personal growth and relationships. Future research should further explore how these dimensions interact across different populations and cultural contexts to develop more tailored and effective well-being interventions.

### **Bivariate Relations among Themes, Age Groups, and Life Satisfaction Groups**

#### *Age Groups and Satisfaction Groups*

Regarding the first sub question of the second research question, this study examined the relationship between age groups and life satisfaction group, demonstrating a slight decrease of high life satisfaction among advancing age groups, especially after the age of 70. The present findings suggest that the two younger groups (40-54, 55-69) generally report higher levels of life satisfaction compared to oldest individuals (70-85). This aligns with other research indicating a decline in Subjective Well-Being (SWB) in later life stages. For example, a Norwegian study by Hansen and Slagsvold (2012) examined the SWB paradox from a multidimensional perspective among individuals aged 40-85. The study found a decline in life satisfaction starting at age 70, with a more pronounced decline from age 75 onward. The present findings support Hansen and Slagsvold's suggestion that the SWB paradox holds only until early old age. This may be due to reaching a threshold of declining functioning, making compensation increasingly challenging (Hansen & Blekesaune, 2022).

#### *Age Group and Themes*

Regarding the second sub question of the second research question, the present study indicates a relationship between age groups and themes related to self-concepts. Specifically, "Holistic Views and Family Values" was most frequently mentioned by the youngest age group (40-54) and least frequently by the oldest age group (70-85). In contrast, "Specific Relationships and Emotional Challenges" was most frequently mentioned by both the oldest (70-85) and middle age group (55-69), with the highest prevalence in the oldest group (70-85) and the lowest prevalence in the youngest group (40-54), showing an increase in popularity with age. This trend suggests that as people age in the second half of life, their focus on holistic views and family values decreases, whereas their focus on specific relationships and emotional challenges increase.

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A possible explanation for the shift towards specific interpersonal relationships after age 54 is that the youngest age group often still has important active family responsibilities. As people age, their children become more independent, reducing the caregiving role and allowing relationships with spouses to evolve into more personal partnerships, each with unique and independent roles in one's life (Vrkljan et al., 2019; Mansoor et al., 2019).

Notably, "Work, Life, and Leisure Balance" is generally the least popular theme compared to the other two themes. Interestingly, comparing the theme across age groups, it is most prominent among the middle age group (55-69), a stage of life often marked by preparing for or adjusting to retirement. This phase typically comes with new insecurities, both financial and related to increased free time compared to earlier years (Luhmann et al., 2012). Additionally, health becomes a crucial concern for this group, as they often begin to realize the mortality and fragility of their bodies (Rai et al., 2019).

### *Life Satisfaction Groups and Themes*

Regarding the third sub question of the second research question, the findings of the present study showed an association between life satisfaction and themes. Although no empirical group difference was found to be most important, it is noticeable that the theme "Specific Relationships and Emotional Challenges" theme is mostly linked to life satisfaction, being prominent in both low and high satisfaction groups. This indicates the strong impact difficult relational dynamics might have on low life satisfaction, while the focus on interpersonal relationships in high satisfaction group might reflect the benefits of resourceful and high-quality relationships contributing to ones' life satisfaction (Monnot & Beehr, 2014). These findings are in line with existing research indicating that relationship satisfaction has a strong impact on psychological well-being in terms of perceived stress, fewer depressive symptoms, and the perception of older adults themselves on successful aging (Depp & Jeste, 2006; Fuller-Iglesias, 2015).

The bivariate relational findings addressing the second research question demonstrate an increase in life satisfaction up to a certain age cohort, the identification of age-related differences in well-being themes, and the relationship between life satisfaction and certain themes. These findings highlight the complexity and dynamic nature of successful aging. The strongest bivariate relationship, compared to the other two associations found, suggests a shift in the construction of Subjective Well-Being (SWB) towards more centering individual relationships and specific perspectives. These findings support the notion that successful aging is associated with shifts in values, goals, and beliefs as adaptive responses. Notably, the selective optimization with compensation model is relevant here, suggesting that compensation becomes crucial for well-being concepts as people age due to the increased likelihood of losses, such as health issues or the death of loved ones (Baltes & Carstensen,

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1996; Freund & Baltes, 1998). Research supports this, showing that effective compensation correlates with improved well-being in later life (Ebner et al., 2006; Freund & Baltes, 1998).

### **Multivariate Relationships of Themes and Age Group on Overall Life Satisfaction**

To address the third research question, which aimed to explore the simultaneous relationship between themes and age groups on overall life satisfaction, an ANOVA was conducted. The present findings suggest that advancing age group predicts a slight decrease in life satisfaction, contradicting the paradox of well-being that suggests SWB remains stable or increases with age. However, this decrease falls within a narrow range of mean life satisfaction scores from 10.52 to 11.92, representing only a minor change. One explanation for these findings differing from other studies investigating age and life satisfaction within the German Aging Survey due to a selection effect, as the specific combination of participants who completed both the SELE and SWLS and were divided into age groups has not been examined together before (Westerhof & Keyes, 2006; Westerhof, 2001).

Another explanation could be the psychological impact of historical events at the time of data collection, as the present life satisfaction scores are generally quite low considering the range from 5 to 25. SWB is influenced not only by individual factors such as age, income, health, and adaptive strategies but also by national differences like economic development measured by Gross Domestic Product (Diener et al., 1995). A study by Swift and Colleges (2014), using the European Social Survey, investigated the paradox of well-being across different economic contexts. The findings underscore the importance of economic stability for Subjective Well-Being (SWB), particularly for older individuals, as countries with lower GDP tend to struggle to provide adequate elderly care. The dataset of the present study was collected during a significant historical period, the reunification of Germany after the fall of the Berlin Wall. During this era, there were rapid societal and economic changes, particularly in East Germany, which is slightly overrepresented in this sample (Burda & Hunt, 2001). Unemployment rates in East Germany rose to 16.6%, compared to 10.1% in West Germany (Statistisches Bundesamt, 1997). These job instabilities had a significant impact on older adults, as stable employment is closely linked to self-worth and personal identity (Wahrendorf et al., 2013). Hence, such historical changes likely contributed to a decrease in general life satisfaction among age groups and possibly also explain why the group means of life satisfaction are considerably low. Future research should explore the generalizability and robustness of these findings during periods of less drastic change and across diverse cultural contexts to extend the applicability beyond the German sample.

Furthermore, there was no interaction effect nor a main effect of topics on life satisfaction. This is an important finding as it demonstrates that despite age differences in

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themes, these differences are not related to life satisfaction. This indicates that the shift in lay concepts of SWB among age groups is independent of life satisfaction.

### **Strengths and Limitations**

This study has several notable strengths. One key strength is its mixed-method approach, which combines the quantitative data from the SWLS with the qualitative data from the SELE questionnaire. This integration enables a deeper interpretation and provides a nuanced perspective on the underlying mechanisms of SWB. By leveraging the strengths of both data types, this comprehensive approach enhances the validity and reliability of the results, leading to more robust and practical conclusions (Creswell & Clark, 2017).

Additionally, the use of Latent Dirichlet Allocation (LDA) text mining to analyze responses from a large and diverse sample adds significant strength to the study (Blei et al., 2003). Analyzing data from 2,438 participants allowed for the extraction of meaningful themes from the textual data, offering valuable insights into different conceptions of SWB among older adults. This large sample size ensures that the findings are both robust and widely applicable, enhancing the overall generalizability of the study's conclusions (Mason, 2010).

However, there are limitations. LDA relies on the quality and pre-processing of the text data and subjective interpretation of topic labeling, which can introduce biases. This necessitated considerable manual effort to read representative documents and accurately label topics, an aspect that LDA should ideally minimize (Weston et al., 2023). Further, the scientific literature offers limited concrete guidance on conducting unsupervised topic modeling analyses for interview datasets, necessitating considerable iteration and trial-and-error in this study. Future research should involve two independent researchers in labeling topics to ensure consistency and reliability (Chen et al., 2023). These limitations indicate that while topic modeling can enhance human analysis, it cannot replace it entirely, and substantial effort is still required to achieve satisfactory results. Nonetheless, the demonstration that certain themes are more prevalent in specific age groups enhances the credibility and robustness of the topic modeling results, suggesting that the identified themes reflect genuine patterns in the data rather than random noise. This consistency with existing theories or literature about age-related differences in life satisfaction or well-being further corroborates the validity of the themes.

Additionally, the high satisfaction group has a broader range (13-25) compared to the low (5-9) and medium (10-12) groups, which can introduce variability within the high group. This variability may potentially obscure specific trends or effects that are more easily observed in the narrower ranges of the other groups (Field, 2013). This heterogeneity can introduce biases, making it harder to draw precise conclusions (Kline, 2023).

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Despite these challenges, choosing similarly sized groups minimizes the risk of Type I and Type II errors and facilitates more straightforward and equitable comparisons, enhancing statistical power (Cohen, 1988). However, the present findings of life satisfaction groups should be interpreted with caution, and future studies should investigate the role of life satisfaction in relation to age and concepts of SWB with reduced within-group variability and improved analysis precision.

### **Reflecting on the 1996 Sample**

Reflecting on the present sample from 1996, it is crucial to consider the unique historical context of post-reunification Germany. Six years after the fall of the Berlin Wall, individuals aged 40-85 were adapting to significant socio-economic and political changes, including shifts in national identity, economic restructuring, and cultural integration. These experiences likely shaped their self and life concepts, emphasizing resilience, adaptability, and coping with rapid societal transformations (Berdahl, 1999; Fulbrook, 2002). The cohort aged 40-85 in 1996 included individuals born between 1911 and 1956, encompassing those who experienced World War II, post-war reconstruction, and the Cold War. These major historical events likely influenced their self and life concepts (Fulbrook, 2002; Elder, 1998).

In contrast, today's cohort aged 40-85, born between 1938 and 1983, has witnessed different significant events such as the digital revolution, globalization, progressing climate crises, and the recent COVID-19 pandemic (Ahmad & Zhang, 2020; Kristensen & Ruckenstein, 2018; Zacher & Rudolph, 2021). These experiences impact people's subjective well-being, identity development, and sense of safety, emphasizing technological integration, global interconnectedness, heightened self-awareness, and health consciousness (Bucci et al., 2019; Djelassi et al., 2018; Elder, 1998; García-Montes et al., 2006; Sachs, 2014; Wanka et al., 2014).

Despite these historical differences, fundamental aspects of human experience, such as the need for social connections, personal growth, and life satisfaction, remain consistent. The themes identified in the present study, such as the importance of family and community, close interpersonal relationships, work-life balance, and the desire for health maintenance, resonate with Maslow's conceptualized basic human needs for love and belonging, and self-actualization. Maslow compares the need for loving relationships to basic needs such as sleep and food and emphasizes the realization of personal potential and self-fulfillment (Maslow, 1943). Additionally, these themes align with the basic psychological needs emphasized by Self-Determination Theory (SDT), which include autonomy, competence, and relatedness. These needs are proposed as essential ingredients for psychological growth, integrity, and well-being (Deci & Ryan, 2013). The fulfillment of these needs is crucial for self-

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construction and personal well-being, regardless of cultural context, and still resonates today, albeit in different forms and contexts (Ryff & Singer, 2008)

Human development theories, such as those proposed by Piaget and Erikson, suggest that individuals go through similar stages of cognitive and emotional development (Erikson, 1959; Piaget, 1936). These stages provide a framework within which individuals construct their sense of self (Boyd, 2010). Hence, the ability to navigate challenging life events in one's unique historical time, whether post-reunification in 1996 or the rapid changes in technology and challenges of climate crises today, indicates that fundamental human coping mechanisms and the pursuit of well-being remain relevant (Bonanno, 2004; Elder, 1994).

### **Future Research**

Future research should aim to conduct longitudinal studies that compare cohorts from different historical periods and contemporary settings to better understand how socio-economic and cultural contexts shape self and life concepts over time. Additionally, exploring the impact of contemporary challenges, such as digitalization, climate change, and global pandemics, on different age groups can provide valuable insights into the evolving nature of SWB and the understanding of successful aging. Furthermore, examining diverse cultural settings beyond Germany can enhance the generalizability of findings and offer a more comprehensive understanding of global trends in SWB.

Additionally, understanding the changes in themes of SWB in the second half of life highlights the importance of examining differences in SWB themes during the first half of life. By identifying and analyzing early-life themes, researchers can gain a comprehensive picture of how SWB concepts evolve over the entire lifespan. This holistic perspective allows for a better understanding of the foundational factors that contribute to SWB in later years and deepens insights into the dynamic nature of SWB. Such understanding might be beneficial for a deeper comprehension of successful aging and for targeting early preventive interventions.

### **Implications**

The findings from this study provide valuable insights for developing specific practical interventions aimed at enhancing well-being among older adults. Interventions should be tailored to address both the hedonic and eudaimonic aspects of SWB, given their integral role in shaping individual conceptions of life satisfaction. For instance, for the younger age group (40-54), programs that reinforce family values and holistic well-being could be beneficial. This could include family counseling, community support groups, and activities that promote family bonding and collective well-being. For middle-aged individuals (55-69) and the oldest age group (70-85), it is crucial to prioritize fostering specific interpersonal relationships and providing support for emotional challenges, along with

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interventions aimed at increasing life satisfaction. This might involve creating social networks, offering grief counseling, and facilitating activities that encourage social engagement and the building of meaningful relationships (Antonucci et al., 2010). For individuals older than 70, it might be beneficial to encourage movement to maintain physical health as much as possible. At the same time, it is important to promote acceptance of their changing bodies and declining health. Additionally, using positive psychological approaches such as enhancing gratitude or writing a personal autobiography can enhance life satisfaction through enhanced personal meaning in life (Chamorro-Garrido, 2021., Sutipan et al., 2017).

### **Conclusion**

In conclusion, this study highlights the complex and dynamic nature of successful aging by identifying distinct themes within individual conceptions of life satisfaction and their variations across age groups. The integration of both hedonic and eudaimonic elements underscores the multidimensionality of SWB. The findings suggest a slight decrease in life satisfaction among age groups, possibly due to sample selection or the historical context of data collection. However, the results align with existing literature indicating that the decline in SWB becomes more pronounced after the age of 70.

The study also revealed different themes within SWB across age groups. For those in the early second half of life, holistic views and family values were more prominent, whereas, with increasing age, the focus shifted towards specific relationships and emotional challenges. These insights have important implications for interventions aimed at improving successful aging and enhancing SWB among the elderly.

While this study provides valuable insights into the SWB concepts of individuals during a unique historical period, it is essential to contextualize these findings within the contemporary socio-economic landscape. This approach helps us better understand the enduring and evolving aspects of human experience, ultimately enhancing our strategies for promoting well-being in an ever-changing world.

Finally, these findings contribute to the understanding of successful aging and emphasize the need for tailored interventions that address the multidimensionality of SWB to support and improve the aging process.

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## Appendix A

## Topic Modell Preprocessing

Table A

*Table of Stop Words for the Orange Preprocessing*

Stop Words					
mehr	manchmal	lassen	mach	blieb	wa
gut	oft	jahren	kommen	nie	fit
ka	bleib	gar	müssen	müßte	al
geht	schon	schwer	halten	möglich	au
möchte	früher	u	kommt	guter	bi
muß	hätte	gibt	zuviel	gehe	ohn
bleiben	schlecht	bisher	vielleicht	last	manch
immer	recht	bekomm	konnt	o	un
besser	eigentlich	ändern	brauch	trotz	macht
viel	wäre	weiß	vielen	schön	de
wenig	ding	langsam	schaff	beim	krei
hoff	gern	öfter	große	neue	hatt
mal	schlechter	schöne	drauf	k	kürzer
jahr	bleibt	einigermaßen	bekommen	b	sollt
lang	richtig	komm	finden	s	trotzdem
ganz	schnell	bald	früh	dran	falsch
heut	lxi	lass	find	werd	großen
gehen	lxy	weiterhin	nein	all	mußt
tun	schnell	z	ab	etwa	rei
daran	eigen	möglichst	getan	bzw	gegenüb
dingen	fertig	zurecht	voll	eben	situat



## Appendix B

## LDA Topic Modeling: Most Important Example Phrases

Table B1

*Examples of Topic-Specific Phrases for Each Keyword with Translations*

	Topic 1	Topic 2	Topic 3
	Holistic Views and Family Values	Specific Relationships and Emotional Challenges	Work, Life and Leisure Balance
<b>Keyword</b>			
Gesund/gesundheitlich, gesund (Health)	„Am wichtigsten für mich ist Gesundheit in der Familie." (The most important thing for me is health in the family; 2383)	„Am wichtigsten für mich ist meine Gesundheit." (The most important thing for me is my health; 1442)	„Später, wenn ich älter bin und das Geld reicht dann noch und ich gesund bleibe, mehr Urlaub und Spaziergänge." (Later when I am older and the money is still enough and I stay healthy, more vacations and walks; 4485)
Leben (Life)	„Ich bin stolz darauf... im Kreise meiner Familie leben." (I am proud of... living in the circle of my family; 2383)	„Ich bin stolz darauf, dass ich so gut mit dem Leben klar komme, denn ich habe vor einem Jahr meinen Mann“(verloren) (I am proud that I cope so well with life, because I lost my husband a year ago; 1655)	„Ich habe mir vorgenommen, mehr für ein gesunden Leben zu tun“ (I have decided to do more for a healthy life; 1298)
Zeit (time)	„In den nächsten Jahren hoffe ich, mehr Zeit für die Familie und Freizeit zu haben." (In the coming years, I hope to have more time for family and leisure; 19)	„Ziemlich gut kann ich mich noch an die alten Zeiten erinnern." (I can still remember the old times quite well; 1001)	„Später, wenn ich älter bin habe ich viel Zeit für mein Hobby." (Later, when I am older, I will have a lot of time for my hobby; 2149)
Zufrieden (satisfaction)	„Wenn ich über mich nachdenke bin ich mit mir zufrieden, was ich bis jetzt gemacht habe." (When I think about myself, I am satisfied with what I have done so far; 3935)	„Im Vergleich zu früher bin ich heute zufriedener, weil ich mehr kann und auch an mich denke." (Compared to before, I am more satisfied today because I can do more and also think about myself; 2547)	„Wenn ich mich mit anderen vergleiche bin ich mit mir noch zufrieden." (I am still satisfied with myself; 1567)
Familie (family)	„Am wichtigsten für mich ist die Gesundheit und das Wohlergehen der Familie" (The most important thing for me is the health and well-being of the family; 19)	„Was mir in letzter Zeit zu schaffen macht, sind schwere Krankheiten und Todesfälle in der engsten Familie“ (What has been bothering me lately are serious illnesses and deaths in the family; 2670)	Not important for this topic

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Arbeit/arbeiten (work/to work)	„Es stört mich, in der Gesellschaft die Arbeitslosigkeit“ (I am bothered by the unemployment in society; 4003)	Not important for this topic	„Ich habe die Absicht, so lange es geht noch zu arbeiten“ (I intend to work as long as I can; 1567)
Frau (wife)	„So richtig wohl fühle ich mich, wenn ich mit meiner Frau im Urlaub bin, mit Freunden beisammen bin, wenn alle Familienmitglieder gesund sind.“ (I feel truly comfortable when I am on vacation with my wife, together with friends, when all family members are healthy; 2036)	Not important for this topic	Not important for this topic
Kinder (children)	Not important for this topic	„In den nächsten Jahren möchte ich den Lebensweg meiner Kinder weiter begleiten dürfen“ (In the coming years, I would like to continue accompanying my children's life path; 3864).	Not important for this topic
Menschen (Humans/People)	Not important for this topic	„Was mir in letzter Zeit zu schaffen macht, ist die Gewalt unter Menschen, besonders wenn sie von jungen Menschen ausgeht“ (What has been bothering me lately is the violence among people, especially when it comes from young people; 4093)	Not important for this topic
Allein (alone)	Not important for this topic	„Ich habe Angst, dass ich mal so ganz alleine bin, wenn die Kinder aus dem Haus gehen“ (I am afraid that I will be completely alone when the children leave home; 740)	Not important for this topic
Mann (man/husband)	Not important for this topic	„Wenn ich über mich nachdenke, muss ich sagen, dass ich mit meinem Leben bis zum Tod meines Mannes glücklich war.“ (When I think about myself, I have to say that I was happy with my life until my husband died; 1558)	Not important for this topic

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Urlaub (vacation)	Not important for this topic	Not important for this topic	"Ich habe die Absicht bald in Urlaub zu fahren" (I intend to go on vacation soon; 2932)
Fahren (To drive):	Not important for this topic	Not important for this topic	"Ziemlich gut kann ich Auto fahren" (I can drive a car quite well; 2932)
Krank (sick):	Not important for this topic	Not important for this topic	„Was mir am Älterwerden missfällt, daß man meist krank wird, und der Körper nicht mehr so will" (What I dislike about getting older is that you usually get sick and the body doesn't function as well; 4026).
Haus (house)	Not important for this topic	Not important for this topic	"So richtig wohl fühle ich mich zu Hause in meinem Haus und Garten." (I feel really comfortable at home in my house and garden; 816)

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*Note.* The Number in parentheses is the participants case number.

## Appendix C

## Additional Topic Specific Phrases of Keywords

Table C1

*Example Phrases of Shared Keywords for Topic 1*

Gesund/gesundheitslich, gesund (Health):	Leben (Life)	Arbeit/arbeiten (Job/ to work)	Zufriedenheit (Satisfaction)
„Am wichtigsten für mich ist Gesundheit in der Familie.“ (The most important thing for me is health in the family; 2383)	„Ich bin stolz darauf... im Kreise meiner Familie leben.“ (I am proud of... living in the circle of my family; 2383)	„Es stört mich (die) wirtschaftliche Zerrissenheit im jetzigen System und die Arbeitslosigkeit“ (I am bothered by the economic fragmentation in the current system and the unemployment; 148)	„Wenn ich über mich nachdenke bin ich mit mir zufrieden, was ich bis jetzt gemacht habe.“ (When I think about myself, I am satisfied with what I have done so far; 3935)
„In den nächsten Jahren hoffe ich daß ich und meine Familie in Gesundheit und Frieden leben kann.“ (In the coming years, I hope that my family and I can live in health and peace; 2383)	„Ich glaube, dass ich mein Leben gut gestaltet habe“ (I believe that I have shaped my life well; 1228)	„Es stört mich, in der Gesellschaft die Arbeitslosigkeit“ (I am bothered by the unemployment in society; 4003)	„Wenn ich mich mit anderen vergleiche bin ich mit mir zufrieden.“ (When I compare myself to others, I am satisfied with myself; 3400)
„Es wäre schön wenn ich einigermaßen gesund bleibe.“ (It would be nice if I stay reasonably healthy; 3935)	„Ich habe die Absicht, mein Leben weiter so führen“ (I intend to continue living my life this way; 3935)	„Was mir in letzter Zeit zu schaffen macht, dass ich meinen Arbeitsplatz bis zum Rentenalter behalte“ (What has been troubling me lately is keeping my job until retirement age; 2383)	„Im vergleich zu früher, war man zufriedener mit weniger.“ (Compared to earlier, people were more satisfied with less; 2221)
„Am wichtigsten für mich ist die Gesundheit und das Wohlergehen der Familie.“ (The most important thing for me is the health and well-being of the family; 19)	„Ich würde gerne, viele weitere Jahre mit meiner Frau ein sorgloses Leben führen“ (I would like to lead a carefree life with my wife for many more years; 2036)	„Angst habe ich, dass ich bis zur Rente arbeite und vielleicht davon nichts habe“ (I am afraid that I will work until retirement and maybe not benefit from it; 3935)	„Mein Körper entspricht meinem Alter und damit bin ich noch zufrieden.“ (My body corresponds to my age and I am still satisfied with it; 148)
„Ich habe mir vorgenommen etwas gesünder zu leben und etwas mehr für meine Gesundheit zu tun.“ (I have resolved to live a bit healthier and do a bit more for my health; 1118)	„Ich habe mir vorgenommen, ruhig und bescheiden mein Leben zu Ende zu führen“ (I have resolved to quietly and modestly lead my life to its end; 148)	„Ich glaube, dass ich einmal sehr wenig Rente bekomme und bis 70 arbeiten muss“ (I believe that I will get very little pension and have to work until I am 70; 2221)	„Ich habe festgestellt, dass ich jetzt zufriedener und glücklicher leben kann.“ (I have found that I can live more satisfied and happier now; 148)
„Jetzigen Lebensstandard noch recht lange genie(ßen zu können)“ (The most important thing for me is our health and the ability to enjoy the current standard of living for as long(as possible); 148)	„Ich glaube, dass ich mein Leben bis jetzt gut gemeistert habe“ (I believe that I have managed my life well so far; 1118)	„Wenn ich mich mit anderen vergleiche, bin ich froh, noch meine Arbeit zu haben“ (When I compare myself to others, I am glad to still have my job; 1118)	
„Was mir am Älterwerden missfällt daß sich doch gesundheitliche Probleme einstellen.“ (What I dislike about getting older is that health problems do arise; 1118)		„Ziemlich schlecht fühle ich mich, wenn ich auf Arbeitssuche bin und ich mein Alter nenne. Da fühle ich mich wie ein Großvater (...).“ (I feel pretty bad when I am job hunting and mention my age. I feel like a grandfather (...); 4001)	
„Am wichtigsten für mich ist unsere Gesundheit und die Möglichkeiten dem jetzigen Lebensstandard noch recht lange genie(ßen zu können)“ (The most important thing for me is our health and the ability to enjoy the current standard of living for as long(as possible); 148)			
„In den nächsten Jahren hoffe ich das ich noch viele Jahre gesund bleibe.“ (In the coming years, I hope to stay healthy for many more years; 1228)			
„Mein Körper könnte gesundheitlich besser gehen.“ (My body could be healthier; 1228)			

Note. The Number in parentheses is the participants case number.

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Table C2

## Example Phrases of Shared Keyword "Time" for Topic 1

Zeit (Time)			
„Was mir am Älterwerden gefällt, ist dass ich hoffe, dass ich dann mehr Freizeit habe." (What I like about getting older is that I hope to have more free time; 2383)	„Ich habe festgestellt, dass ich in der letzten Zeit immer schwerer höre." (I have found that I have been hearing more and more difficult lately; 1228)	„In den nächsten Jahren hoffe ich, mehr Zeit für die Familie und Freizeit zu haben." (In the coming years, I hope to have more time for family and leisure; 19)	„Es stört mich, dass wir uns nach der Wende oft wie 2. Wahl Menschen fühlen und nicht die gleiche Zeit bekommen." (It bothers me that we often feel like second-class citizens after the reunification and don't get the same time; 2036)
„Ich fühle mich oft nicht verstanden in der Freizeit (Verein)." (I often feel misunderstood in my free time (club); 3935)	"Ich würde gern mehr Zeit für meine Familie haben." (I would like to have more time for my family; 19)	„Es wäre schön, wenn alles so bleibt, wie es zur Zeit ist." (It would be nice if everything stays as it is now; 19)	„Ich habe mir vorgenommen, mich noch recht lange fit zu halten, jegliche Zeit zu nutzen."
„Was mir am Älterwerden gefällt, ist dass ich Zeit für alles haben kann." (What I like about getting older is that I can have time for everything; 3935)	„Ich fühle mich oft nachdenklich, was die Zeit von heute mit sich bringt." (I often feel thoughtful about what the current times bring; 19)	„Ich würde gern noch mehr Freizeit und Ruhe für meine Hobbys haben." (I would like to have even more free time and peace for my hobbies; 2221)	„Was mir am Älterwerden gefällt, ist dass wir Zeit haben für uns, fürs Verreisen, das Leben genießen." (What I like about getting older is that we have time for ourselves, for traveling, and enjoying life; 2036)
„Wenn ich bestimmte Dinge nicht mehr kann, denke ich, wird sich zu gegebener Zeit eine Lösung finden." (When I can no longer do certain things, I think a solution will be found in due time; 1118)	„Später, wenn ich älter bin, möchte ich noch mehr meine Freizeit mit Frau und Kindern verbringen." (Later, when I am older, I want to spend even more of my free time with my wife and children; 2221)	„Ich habe die Absicht, mehr Zeit in der Natur zu verbringen." (I intend to spend more time in nature; 2221)	„Es ist für mich schwer zu verstehen, daß der Staat die Gelder in guten Zeiten verschleudert hat." (It is hard for me to understand that the state squandered funds in good times; 2221)
„Was mir am Älterwerden gefällt, ist die schmale Rente und Zeit für meinen Garten." (What I like about getting older is the modest pension and time for my garden; 3400)	„Ich fürchte, dass ich in nächster Zeit noch unruhiger werde, wenn man an die Entwicklungen denkt." (I fear that I will become even more restless in the near future when thinking about developments; 4003)	„Wenn ich mein vergangenes Leben betrachte, bedaure ich, dass mein Leben durch Krieg und Nachkriegszeit stark beeinflusst wurde." (When I look back on my past life, I regret that my life was strongly influenced by the war and post-war period; 148)	„Wenn ich mein vergangenes Leben betrachte, bedaure ich, dass die Zeit viel zu schnell vergangen ist." (When I look back on my past life, I regret that time has passed much too quickly; 2221)

Note. The Number in parentheses is the participants case number.

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**Table C3***Example Phrases of Shared Keyword "Family" for Topic 1*

Familie (Family)			
„Am wichtigsten für mich ist meine Familie" (The most important thing for me is my family; 1118)	„So richtig wohl fühle ich mich im Kreise meiner Familie" (I feel truly comfortable in the circle of my family; 2221)	„In den nächsten Jahren hoffe ich, mehr Zeit für die Familie und Freizeit zu haben" (In the coming years, I hope to have more time for family and leisure; 19)	„Ich bin stolz darauf die Familie funktioniert und meine Söhne einen Beruf haben" (I am proud that the family functions and my sons have a job; 3935)
„Am wichtigsten für mich ist gutes Familienleben" (The most important thing for me is a good family life; 3400)	„Am wichtigsten für mich ist die Gesundheit und das Wohlergehen der Familie" (The most important thing for me is the health and well-being of the family; 19)	„Später, wenn ich älter bin, will ich nur noch der Familie widmen" (Later, when I am older, I will only dedicate myself to the family; 19)	

Note. The Number in parentheses is the participants case number.

**Table C4***Example Phrases of Topic 1 specific Keyword "Wife"*

Frau (Wife)		
„Später, wenn ich älter bin, möchte ich mit meiner Frau viel verreisen." (Later, when I am older, I want to travel a lot with my wife; 2383)	„So richtig wohl fühle ich mich, wenn ich mit meiner Frau im Urlaub bin, mit Freunden beisammen bin, wenn alle Familienmitglieder gesund sind." (I feel truly comfortable when I am on vacation with my wife, together with friends, when all family members are healthy; 2036)	„In den nächsten Jahren möchte ich nach Genesung meiner Frau noch recht oft verreisen, um jene Teile der Welt kennenzulernen." (In the coming years, I want to travel quite often after my wife's recovery to get to know those parts of the world; 2036)
„Ich würde gern viele weitere Jahre mit meiner Frau ein sorgloses Leben führen." (I would like to lead a carefree life with my wife for many more years; 2036)	„Es wäre schön, wenn ich mit meiner Frau und unseren Freunden noch viele Jahre verbringen könnte, ohne um jemanden bangen zu müssen." (It would be nice if I could spend many more years with my wife and our friends without having to worry about anyone; 2036)	„Was mir in letzter Zeit zu schaffen macht, sind meine Knochenbeschwerden und die anfällige Gesundheit meiner Frau." (What has been bothering me lately are my bone complaints and my wife's susceptible health; 2036)

Note. The Number in parentheses is the participants case number.

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Table C5

## Example Phrases of Shared Keywords for Topic 2

Gesund/gesundlich, gesund (Health)	Leben (life) 1.0	Leben (life) 2.0	Zufriedenheit (satisfaction)
„Am wichtigestn für mich ist meine Gesundheit.“ (The most important thing for me is my health; 1442)	„Es stört mich, wenn sich Verwandte in mein Leben einmischen, Ich habe die Absicht mein Leben in Zukunft etwas ruhiger zu gestalten (It bothers me when relatives interfere in my life, I intend to make my life a little quieter in the future; 2670)	„Ich bin stolz darauf, dass (ich) ein selbständiges Leben führen kann und liebenswerte Enkelkinder habe“ (I am proud that I can lead an independent life and have lovely grandchildren; 1558),	„Wenn ich über mich nachdenke ich bin mit meinem Leben zufrieden.“ (I am satisfied with my life; 2711)
„Wenn ich über mich nachdenke kann ich zufrieden sein wegen guter Gesundheit.“ (When I think about myself, I can be satisfied because of good health; 1442)	„Ich habe mir vorgenommen bis zum Schluss des Lebens für mich und meinen Mann alleine zu sorgen (I have decided to take care of myself and my husband alone until the end of life; 1001)	„Was mir am Älter werden gefällt, dass jeder neue Tag der Beginn vom Rest meines Leben ist“ (What I like about getting older is that every new day is the beginning of the rest of my life; 3864)	„Wenn ich über mich nachdenke bin ich nicht unzufrieden. Mein Mann und ich haben uns gut arrangiert.“ (I am not dissatisfied. My husband and I have arranged ourselves well; 1655)
„In den nächsten Jahren möchte ich weiterhin gesund bleiben, damit ich mir u. meiner Familie helfen kann.“ (In the next few years, I want to stay healthy so that I can help myself and my family; 2711)	„Ich bin stolz darauf, dass ich so gut mit dem Leben klar komme, denn ich habe vor einem Jahr meinen Mann (verloren) (I am proud that I cope so well with life, because I lost my husband a year ago; 1655)	„Wenn ich über mich nachdenke habe ich mir mein Leben eigentlich anders vorgestellt.“ (When I think about myself, I actually imagined my life differently; 740)	„Mein Körper gibt keinen Anlaß zur Sorge. Ich bin zufrieden.“ (There is no cause for concern. I am satisfied; 1655)
„In den nächsten Jahren etwas mehr für meine Gesundheit tun müßte, mehr Zeit für mich bräuchte.“ (In the next few years, I should do more for my health and need more time for myself; 3864)	„Es ist für mich schwer zu erleben, daß zwei meiner Kinder leider arbeitslos sind. Leider kann ich sie nur wenig unterstützen.“ (It is hard for me to experience that two of my children are unfortunately unemployed. Unfortunately, I can only support them a little; 1655)	„In den nächsten Jahren möchte ich den Lebensweg meiner Kinder weiter begleiten dürfen, mehr ausgehen können.“ (In the coming years, I would like to continue accompanying my children's life path, to be able to go out more; 3864)	„Ich habe festgestellt, dass ich insgesamt zufrieden bin. Ich bin allerdings auch manchmal unzufrieden.“ (Overall, I am satisfied. However, I am sometimes dissatisfied too; 1655)
„Was mir in letzter Zeit zu schaffen macht ist die Sorge um meine Gesundheit.“ (What has been bothering me lately is the concern about my health; 1001)	„Ich fürchte, dass ich mir Sorgen machen muss, wegen der Kinder für ihr späteres Leben“ (I fear that I have to worry about the children for their later life; 2711)	„Wenn ich mich mit anderen vergleiche denke ich, daß ich den Höhepunkt meines Lebens noch vor mir habe.“ (When I compare myself to others, I think that I still have the peak of my life ahead of me; 4093)	„Ich glaube, dass ich mit kleinen Abstrichen, mit meinem Leben zufrieden.“ (With small reservations, I am satisfied with my life; 2670)
		„Wenn ich mein vergangenes Leben betrachte, bedaure ich, dass ich die Eigenarten der einzelnen Lebensabschnitte nicht mehr genossen habe (Studium - Kindheit).“ (When I look back on my past life, I regret that I no longer enjoyed the peculiarities of the individual stages of life (studies - childhood); 4093)	„Wenn ich über mich nachdenke kann ich zufrieden sein wegen guter Gesundheit.“ (When I think about myself, I can be satisfied because of good health; 1442)
			„Im Vergleich zu früher bin ich heute zufriedener, weil ich mehr kann und auch an mich denke.“ (Compared to before, I am more satisfied today because I can do more and also think about myself; 2547)

Note. The Number in parentheses is the participants case number.

**Table C6***Example Phrases of Shared Keyword "Family" for Topic 2*

Familie (family)		
„Ich fühle mich oft mit meiner Familie glücklich“ (I often feel happy with my family; 2711)	„Was mir in letzter Zeit zu schaffen macht, sind schwere Krankheiten und Todesfälle in der engsten Familie“ (What has been bothering me lately are serious illnesses and deaths in the family; 2670)	„Am wichtigsten für mich ist ein harmonisches Familienleben“ (The most important thing for me is a harmonious family life; 2547)
„In den nächsten Jahren möchte ich weiterhin gesund bleiben, möchte ich weiterhin gesund bleiben, damit ich mir u. meiner Familie helfen kann.“ (In the coming years, I want to stay healthy so that I can continue to help myself and my family; 2711)	„Wenn ich über mich nachdenke finde ich, dass ich doch manches gut gemacht habe für die Familie.“ (When I think about myself, I find that I have done some things well for the family; 1001)	„Später, wenn ich älter bin, hoffe ich auf Hilfe von meiner Familie“ (Later, when I am older, I hope for help from my family; 2547)
„Was mir am älter werden gefällt, dass meine Familie um mich besorgt ist.“ (What I like about getting older is that my family is concerned about me; 2711)	„Am wichtigsten für mich ist Familie, Gesundheit, Frieden, für andere da zu sein.“ (The most important thing for me is family, health, peace, and being there for others; 3864)	„Wenn ich bestimmte Dinge nicht mehr kann bekomme ich bestimmt Hilfe von meinem Mann, meiner Tochter mit Familie.“ (When I can no longer do certain things, I will certainly get help from my husband and my daughter with her family; 2547)

*Note.* The Number in parentheses is the participants case number.

**Unique Keywords of Topic 2**

The keyword "Kinder" is frequently mentioned in the context of pride, responsibility, and ongoing support. Respondents express a deep sense of accomplishment in raising their children, as seen in statements like „Ich bin stolz darauf, dass ich meine Kinder zu guten Menschen erziehen konnte" (I am proud that I was able to raise my children to be good people; 2711). There is also a desire to continue being involved in their children's lives, as reflected in „In den nächsten Jahren möchte ich den Lebensweg meiner Kinder weiter begleiten dürfen" (In the coming years, I would like to continue accompanying my children's life path; 3864). These examples highlight the importance of maintaining close relationships with children and the emotional fulfillment derived from these connections.

The term "Menschen" encompasses broader social interactions and reflects concerns about societal issues and personal relationships. For instance, „Meine Schwächen sind, dass es mich stört, dass so wenig für alte Menschen getan wird" (My weaknesses are that it bothers me that so little is done for old people; 1558) shows a sensitivity to the needs of the elderly. Additionally, „Was mir in letzter Zeit zu schaffen macht, ist die Gewalt unter Menschen, besonders wenn sie von jungen Menschen ausgeht" (What has been bothering me lately is the violence among people, especially when it comes from young people; 4093) indicates a concern for social harmony and the impact of societal violence on personal well-being. These statements reflect an awareness of and engagement with broader social issues that affect individual lives.

The theme of being "allein" (alone) is closely tied to fears of loneliness and the loss of autonomy. Respondents express anxiety about future solitude, particularly in the context of children leaving home or the loss of a spouse. For example, „Ich habe Angst, dass ich mal so ganz alleine bin, wenn die Kinder aus dem Haus gehen" (I am afraid that I will be completely alone when the children



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leave home; 740) and „Angst habe ich, dass ich mal alleine bleiben muss, mein kranker Mann alleine bleibt" (I am afraid that I will have to stay alone, my sick husband will be alone; 1442) reveal deep-seated fears about isolation. These sentiments underscore the emotional challenges associated with potential solitude and the desire for continued companionship and support.

**Table C7***Example Phrases of Topic 2 specific Keyword "Husband"*

<b>Mann (men/husband)</b>				
„Es wäre schön, wenn ich mit meinem Mann noch eine schöne Zeit hätte." (It would be nice if I still had a nice time with my husband; 1001)	„In den nächsten Jahren hoffe ich, dass ich gesund bleibe, und mindestens 80 Jahre alt werde, zusammen mit meinem Mann." (In the next few years, I hope to stay healthy and live to be at least 80 years old, together with my husband; 2670)	„Was mir in letzter Zeit zu schaffen macht, ist, ob ich noch lange mit meinem Mann in der Wohnung bleiben kann." (What has been troubling me lately is whether I can stay in the apartment with my husband for a long time; 1442)	„Wenn ich mein vergangenes Leben betrachte, bedaure ich, dass ich innerhalb eines Jahres meinen Mann verloren habe 79 Jahre und meine Mutter 95 Jahre." (When I look back on my past life, I regret that I lost my 79-year-old husband and my 95-year-old mother within one year; 1558)	„Wenn ich mein vergangenes Leben betrachte, bedaure ich, dass mein Mann so frühzeitig erkrankt ist, und ich keine Kinder habe." (When I look back on my past life, I regret that my husband fell ill so early, and I have no children; 1442)
Ich habe die Absicht bis zum Schluss des Lebens für mich und meinen Mann alleine zu sorgen." (I intend to take care of myself and my husband until the end of life; 1001)	„Angst habe, dass ich mal alleine bleibe ohne meinen Mann." (I am afraid that I might end up alone without my husband; 1001)	„Angst habe, dass ich mal allein bleiben muss, mein kranker Mann alleine bleibt." (I am afraid that I might end up alone, and my sick husband stays alone; 1442)	„Angst habe, dass es meinem Mann nicht gut geht." (I am afraid that my husband is not doing well; 1442)	„Ich habe festgestellt, dass ich bestimmt Hilfe von meinem Mann, meiner Tochter mit Familie bekomme." (I have found that I definitely get help from my husband, my daughter, and her family; 2547)

**Table C7***Example Phrases of Shared Keywords for Topic 3*

<b>Gesund/gesundlich, gesund (Health)</b>	<b>Leben (life)</b>	<b>Arbeit/arbeiten (Job/ to work)</b>	<b>Zufriedenheit (satisfaction)</b>
„Später wenn ich älter bin und das Geld reicht dann noch und ich gesund bleibe, mehr Urlaub und Spaziergänge." (Later when I am older and the money is still enough and I stay healthy, more vacations and walks; 4485)	„Wenn ich über mich nachdenke, bin ich mit dem Leben zufrieden" (When I think about myself, I am satisfied with life; 816)	„Ziemlich gut kann ich, handwerkliche Arbeiten" (I can do manual work quite well; 816)	„Wenn ich über mich nachdenke bin ich mit dem Leben zufrieden." (I am satisfied with life; 816)
„Am wichtigsten für mich ist daß ich gesund bleibe." (The most important thing for me is that I stay healthy; 816)	„Ich habe festgestellt, dass ich einige Fehler in meinem Leben gemacht habe" (I have found that I have made some mistakes in my life; 4558)	„Ich habe die Absicht, so lange es geht noch zu arbeiten" (I intend to work as long as I can; 1567)	„Wenn ich über mich nachdenke bin ich zufrieden." (I am satisfied; 1298 & 1373)
„Ich habe mir vorgenommen mehr für ein gesundes Leben zu tun." (I have resolved to do more for a healthy life; 1298)	„Wenn ich so über mich nachdenke, habe ich viel falsch gemacht im Leben" (When I think about myself, I have done a lot wrong in life; 2026)	„Was mir am Älterwerden mißfällt, dass die Kraft bei der Arbeit nicht mehr so ist wie früher" (What I dislike about getting older is that my strength at work is not what it used to be; 1567)	„Ich glaube, dass ich "mit meiner Gesundheit zufrieden sein soll." (I should be satisfied with my health; 1567)
„Es wäre schön, wenn ich gesund bleibe." (It would be nice if I stay healthy; 1298)	„Ich glaube, dass ich mein Leben bis jetzt gut gemeistert habe" & Wenn ich bestimmte Dinge nicht mehr kann, wird mir das Leben wohl schwerer fallen (I believe that I have mastered my life well	„Am wichtigsten für mich ist arbeiten" (The most important thing for me is to work; 4026)	„Wenn ich mich mit anderen vergleiche bin ich mit mir noch zufrieden." (I am still satisfied with myself; 1567)

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	so far & If I can no longer do certain things, life will probably become more difficult for me; 4485)		
„Mein Körper, glaube ich ist gesund.“ (My body, I believe, is healthy; 4558)	„Ich bin stolz darauf, dass ich im Leben soviel geschafft habe“ (I am proud that I have accomplished so much in life; 2149)	„In den nächsten Jahren, will ich arbeiten“ (In the next few years, I want to work; 4026)	„Wenn ich mich mit anderen vergleiche bin ich doch ganz zufrieden.“ (I am quite satisfied; 4485)
„Später, wenn ich älter bin und gesund bleibe, Reise ich noch mehr.“ (Later, when I am older and stay healthy, I will travel even more; 1567)	„Wenn ich über mich nachdenke, habe ich in meinem Leben bis jetzt schon viel gearbeitet (When I think about myself, I have already worked a lot in my life so far; 2149)	„Wenn ich so über mich nachdenke, habe ich in meinem Leben bis jetzt schon viel gearbeitet“ (When I think about myself, I have already worked a lot in my life so far; 2149)	
„Ich würde gerne gesund bleiben.“ (I would like to stay healthy; 1567)	„Ich bin stolz darauf, dass ich im Leben meinem Mann gestanden habe“ (I am proud that I have stood by my husband in life; 816)	„Angst habe ich, dass ich die Arbeit vielleicht verliere, oder zu früh sterbe“ (I am afraid that I might lose my job or die too early; 4485)	
„Was mir am älterwerden gefällt, wenn man gesund und fit bleibt.“ (What I like about getting older is when you stay healthy and fit; 1567)	„Ich habe die Absicht, mit meiner Schwester gut zusammen zu leben“ (Later, when I am older, I want to live without worries; 816)	„Angst habe ich, dass ich eventuell keine Arbeit finde“ (I am afraid that I might not find a job; 4558)	
„Am wichtigsten für mich ist Gesundheit.“ (The most important thing for me is health; 2149)	„Ich glaube, dass ich einiges im Leben richtig gemacht habe“ (I believe that I have done some things right in life; 1373)	„Ich würde gerne selbständiger arbeiten“ (I would like to work more independently; 4485)	
		„Wenn ich über mich nachdenke, bin ich froh meine Arbeit zu haben“ (When I think about myself, I am glad to have my job; 2932)	

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*Note.* The Number in parentheses is the participants case number.

### Unique Keywords of Topic 3

The concept of "Urlaub" (vacation) is frequently mentioned in the context of leisure, well-being, and future aspirations. Respondents express a strong desire to enjoy vacations as a means of relaxation and fulfillment. For instance, „Am wichtigsten für mich ist meine Frau, Kinder, Arbeit, Urlaub“ (The most important thing for me is my wife, children, work, vacation; 4485) highlights the central role of vacations alongside family and work. Additionally, statements like „Später, wenn ich älter bin und das Geld reicht dann noch und ich gesund bleibe, mehr Urlaub und Spaziergänge“ (Later, when I am older and the money is still enough and I stay healthy, more vacations and walks; 4485) emphasize the connection between health and the ability to enjoy vacations. The desire to travel more is also evident in „Ich habe die Absicht bald in Urlaub zu fahren“ (I intend to go on vacation soon; 2932), reflecting the importance of planning and looking forward to leisure activities.

"Fahren" (to drive) is closely tied to the notion of independence and mobility. Respondents mention their ability to drive as a significant aspect of their daily lives and future plans. For example, „Ziemlich gut kann ich Auto fahren“ (I can drive a car quite well; 2932) underscores confidence in their driving skills. The aspiration to travel more is

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reinforced by statements like „Ich würde gern mehr in Urlaub fahren" (I would like to go on vacation more; 2932) and „In den nächsten Jahren will ich weit in Urlaub fahren" (In the coming years, I want to go on vacation far away; 2932), indicating that driving is an enabler for fulfilling these desires. This theme of mobility extends to reflections on personal growth, as seen in „Im Vergleich zu früher erfahrener geworden" (Compared to before, I have become more experienced; 1567), suggesting an appreciation for the increased freedom and opportunities that driving provides.

Concerns about health and sickness are prominent in Topic 3, reflecting the practical and emotional impacts of aging. Respondents frequently express fears of becoming ill, as seen in „Ich fürchte, dass ich krank werde" (I fear that I will get sick; 1373) and „Angst habe, dass ich krank werde" (I am afraid that I will get sick; 1373). The negative aspects of aging are highlighted by statements such as „Was mir am Älter werden missfällt, daß man meist krank wird, und der Körper nicht mehr so will" (What I dislike about getting older is that you usually get sick and the body doesn't function as well; 4026). Despite these concerns, some respondents reflect on their past health positively, as in „Ich habe festgestellt, dass ich eigentlich in meinem Leben nicht viel krank war" (I have found that I was not very sick in my life; 2149), indicating a sense of gratitude for previous health. The recurring fear of serious illness is evident in „Ich fürchte, dass ich einmal ernsthaft krank werden kann" (I fear that I might get seriously ill one day; 1298), showing the deep-seated anxiety about health in later life.

## Appendix D

## Contingency Tables of Bivariate Relationships

Table D1

*Contingency Table of Age Group and Life Satisfaction (LS)*

Age Group		Life Satisfaction Group		
		Low LS	Medium LS	High LS
40-54	% within age group	31	32	37
55-69	% within age group	32	34	34
70-85	% within age group	40*	27	33
Total	% within age group	34	31	35

*Note.* \* $p < .001$ 

Table D2

*Contingency Table of Age group and Topic*

Age Group		Topic		
		Holistic View and Family Values	Specific Relationships and Emotional Challenges	Work, Life and Leisure Balance
40-54	% within age group	41*	30*	3
55-69	% within age group	31	37	32
70-85	% within age group	24*	49*	27
Total	% within age group	32	38	30

*Note.* \* $p < .001$ 

Table D3

*Contingency Table of Life Satisfaction (LS) Group and Topic*

LS Group		Topic		
		Holistic View and Family Values	Specific Relationships and Emotional Challenges	Work, Life and Leisure Balance
Low LS	% within LS group	32	41	27
Medium LS	% within LS group	35	33	33
High LS	% within LS group	31	39	30
Total	% within LS group	32	38	30

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## Appendix E

## Descriptive Statistics ANOVA

Table E1

Descriptive Statistics of Topics and Age Groups on Life satisfaction Score

	Age Group	<i>M</i>	<i>SD</i>	<i>N</i>
Holistic Views and Family Values	40-54	11,92	3,942	343
	55-69	11,21	3,740	276
	70-85	10,52	3,725	172
	Total	11,37	3,860	791
Specific Relationships and Emotional Challenges	40-54	11,38	4,180	239
	55-69	11,47	4,240	327
	70-85	11,16	4,306	356
	Total	11,33	4,248	922
Work, Life and Leisure Balance	40-54	11,88	4,157	246
	55-69	11,69	4,207	279
	70-85	11,06	4,055	200
	Total	11,58	4,156	725
Total	40-54	11,75	4,078	828
	55-69	11,46	4,079	882
	70-85	10,98	4,110	728