



Age-Specific Motivational Differences Among Long-Term Male Clients of Health-Focused Fitness Companies

George F. Zarotis^{1*}, Walter Tokarski²

¹University of the Aegean, Faculty of Human Sciences, Rhodes, Greece; drgzarotis@t-online.de, zarotisg@rhodes.aegean.gr (G.F.Z.)

²German Sport University, Cologne.

Abstract. In order to remain competitive and have a lasting presence on the market, Fitness studios must implement sustainable innovations in their products and services. This is crucial because a targeted approach to customer satisfaction can improve customer satisfaction, which in turn has a positive impact on customer relationships and financial success. All of the valuable activities of the fitness centres should be focused on meeting the needs of the clients. The findings from research on the motivations behind fitness sport can help to better design offerings that cater to the unique needs of athletes and market them through targeted audience targeting. The current study provides a motivational framework for fostering enthusiasm among long-time fitness sport participants. Male members of a health-focused fitness club in a city were under suspicion. The questionnaire consists of 15 items that can be combined into seven motivators. The questions were answered by the fitness centre. They may be taken home to be filled or they could be filled right in the club. Ultimately, 350 questions were prepared, 278 of which were answered. This leaves the response rate at 79.4%. Members who just train on devices are the ones being questioned. The distribution of the genders is almost equal, with a slight overhang (between 53%) of more male respondents. The sample consisted of N=147 male respondents. The average age of the respondents was 57.7 years with a spread around the mean of 12.8 years. The age distribution shows a clear concentration of middle-aged to very old respondents, while younger respondents are comparatively rarely represented. Among respondents with a membership of more than one year, the average length of membership is 10.9 years (spread: 6.8 years). The results show demonstrably significant differences in 4 of the 17 significance tests. In detail, the following significant correlations between motives and age can be found, which are therefore not to be regarded as purely random effects of this specific sampling: a) People who mention the motive 'Positive influence on physical complaints' are older than people who do not mention this motive (mean values 61.0 years to 52.8 years), b) People who mention the motive 'Balancing every day and professional stress' are younger than people who do not mention this motive (mean values 52.7 years to 64.2 years), c) People who mention the motive 'Continuous guidance and training control' are older than people who do not mention this motive (mean values 63.4 years to 55.8 years) and people who mention the motive 'Pleasant and relaxed training' are older than people who do not mention this motive (mean values 58.9 years to 52.9 years). Of all the age differences, the difference in the motive 'Balancing every day and professional stress' is the most pronounced at 11.5 years. The second largest difference with a mean difference of 8.2 years is found in the motive 'Positive influence on physical complaints'. In order to retain customers in the long term, it is important to find out their motivations thoroughly and seriously, to familiarise yourself with them and categorise them, and to make individual recommendations for action and fitness. The insights gained also help to create the conditions for the long-term success of fitness clubs and to enhance the reputation of fitness sport as a whole.

Keywords: Customer loyalty, Fitness companies, Male clients, Motivation, Motives.

1. INTRODUCCION

The prominence of the two main areas of life, "work" and "leisure," is changing significantly as a result of the alienation of labour, rising income, and shifting conventional societal norms. These basic shifts also have an impact on sport, which is a component of leisure. There are new sports on the rise that take health considerations into consideration while satiating the desire for adventure, pleasure, and enjoyment. Sports related to fitness are a prime example. They mix the need for self-expression, the obsession with youth, the pursuit of one's own identity, and the drive to preserve and advance one's health, among other human addictions and aspirations (Zarotis, 1999; Zarotis, 2021). Sports providers must understand the psychological and motivational elements that affect people's leisure sports behaviour in order to satisfy their requirements and preferences. Research on motivation provides useful data and insights on the motivations behind leisure activities as well as sports in general (Zarotis et al., 2002; Zarotis, 2021). Since motivational psychology examines both the internal and environmental factors that influence human behaviour, it begins with the issue of why. It uses the sociological and psychological concepts of "motif" and "motivation," which also refer to a fictitious construct, to explain the variety of this human conduct. Based on behavioural observations and theories, this hypothetical construct explains a phenomenon that is neither directly observable or quantifiable (Heckhausen & Heckhausen, 2010; Zarotis, 2020; Zarotis, 2021). Motivational psychology focusses on the target behaviour. Which states are avoided and which goals are sought, as well as how much work and perseverance are put into them, are all influenced by motivation. It is the outcome of the interplay between situational variables (incentives) and organism variables (motivations or requirements). Motives sharpen awareness of situations, rewards, and happenings that are likely to meet demands. These incentives have a very strong emotional appeal. Latent evaluative dispositions known as motives are triggered or activated by rewards before manifesting as motivation and conduct (Puca & Schüler, 2017). There are two types of motivation: internal motivation and motivation derived from outside sources. Extraneous elements like avoiding punishment, maintaining social status, or material values are characteristics of extrinsic motivation. In this context, extrinsic refers to the use of replacement methods to satisfy requirements that originate from extrinsically motivated conduct rather than the behaviour itself. The original behaviour has no direct bearing on the actual fulfilling of wants. Since they do not allow for the immediate satisfaction of demands, rewards (stimuli), which often dictate the work input alone, are useless in and of themselves (Kroehler & Berti, 2014). It is relevant because intrinsic motivation is produced by the object itself. Extrinsic basic requirements must be partially satisfied before the stimulating potential of intrinsic motivation can be realised. Only when one's material life is reasonably secure can people look for new non-material experiences (Reinhardt, 2018; Zarotis, 2020; Zarotis,

2021). According to Csikszentmihalyi, intrinsic motivation is contingent upon the best possible balance between performance requirements and performance competence. The flow area is where this optimum occurs, which pushes people without being too demanding and therefore creates a feeling of accomplishment. Csikszentmihalyi asserts that flow can be found in the conflict between an individual's degree of abilities and skills and the demands of their surroundings. Since intrinsic motivation differs from external motivation, the conduct itself is what makes it satisfying. Behaviour and need satisfaction happen at the same time. Intrinsic behaviour enhances a good sense of freedom since needs are met without the help of outside rewards. Therefore, the same task may be perceived as easy and satisfying when motivated by intrinsic factors or as challenging and unpleasant while under the influence of extrinsic rewards. Any activity can be internally rewarding provided it is well designed and our talents match the demands, according to Csikszentmihalyi's studies on intrinsically motivated behaviour (Csikszentmihalyi & Jackson, 2000; Schueler et al., 2020; Zarotis, 2021). For those who work in the sports industry, the topic of why individuals participate in sports is especially significant. In addition to making human behaviour easier to grasp, the answer to this question offers fresh perspectives on methodology, didactics, and sports program design. Recreational sports motivations stem from complex, multi-motivated structures that have historical, social, psychological, and physical roots rather than being monocausal. (Elbe, 2020; Beckmann et al., 2009). Changes in preferences were the main cause of the rise in fitness sports. Motives including health, exercise, enjoyment, relaxation, and well-being replaced competition and performance (Dilger, 2008). In the various scientific fields of sport, it is crucial to comprehend motivations in the context of sport. On the one hand, control procedures in fitness studios can be identified as motivated by economic objectives. Similarly, from the standpoint of training science, different motivational traits—which may be construed as either excessive or insufficient motivation—can be essential for improving performance. When compared to other actions, the psychological motivations behind the behaviour are also noteworthy. Designing training, products, and target group marketing with the individual in mind requires that training be geared to client motives (Hackfort, 2001; Zarotis, 2021). The motivations for fitness have been the subject of numerous studies in recent years, thus by this point, a comprehensive picture of the current fitness motivations appears to exist. A change may nonetheless occur, for example, as a result of societal shifts or individual circumstances, even when a certain stability is ascribed to the person's motivational orientation. Furthermore, it's probable that research with distinct focusses or those conducted at various times have different motivational orientations. These disparities may result from social reasons as well as, for instance, industry changes. This review emphasises the need for recurrent assessments of motivational orientations from an economic as well as psychological standpoint. In order to better take individual objectives into account when creating the offer and offering training support, it should be beneficial to compare the goal of identifying the underlying motivations and individual prerequisites (Middelkamp & Steenbergen, 2012). From a psychological perspective, the motivational phase is associated with expectations about the results of actions, among other things. Initially, a particular purpose is linked to a certain condition, which must be met by completing specified actions (Nitsch, 2004). Research on fitness motivations offers a useful perspective on their traits and importance. They typically provide insight into the reasons behind the popularity of fitness sports, allowing for the distinction of various fitness motivations among various demographics (Zarotis & Tokarski, 2005). It should be underlined in this context that there are ways to differentiate between reasons for joining, continuing, and leaving. It's also possible that the initial motivations for choosing a fitness membership evolve over time, become less significant, or are replaced by a variety of new or different factors (Gabler, 2002; Hackfort et al., 2004). Understanding the reasons behind the population's participation in leisure sports is always a good place to start when creating and organising offerings tailored to a particular target group. This can help to keep existing members and draw in new fitness athletes (Zarotis, 2021).

A total of 147 male members of a fitness club were surveyed. In addition to information on age, details on the length of membership in this club and previous memberships in other clubs were provided. A total of 15 motives for fitness club membership were asked as multiple choice answers.

These 15 motives can be grouped into the following 7 dimensions:

Table 1:

Fitness/Health	General improvement of physical fitness
	Cardiovascular training with emphasis on endurance
	Positive impact on physical problems
	<ul style="list-style-type: none"> • Cardiovascular problems • Orthopaedic problems
Appearance	Weight loss (general fat loss)
	Specific bodyshaping
	Bodybuilding
Psychological experience	Compensation for daily routine and occupational stress
	Pleasant and relaxed training
Cognitive dimension	Continuous guidance and training control
	Information about exercise effects and anatomical background knowledge
Social dimension	Being able to plan and control training independently
	Training with a partner
Performance	Specific sporting performance
Motor dimension	Supplement to my own sport
	Preparation for my own sport

The following analyses examine whether the frequencies with which motives are mentioned depend significantly on the age of the men surveyed. The frequency distributions throughout the entire set of respondents are presented in the presentation, which is first restricted to solely descriptive statistics. In the framework of these assessments, neither hypotheses about potential correlations—whether between motives or about how motives depend on other traits—are developed nor tested (Willimczik & Ennigkeit, 2018). The results help build a recreational sports fitness program that is tailored to each individual's needs and goals, establish the groundwork for fitness clubs to succeed in the long run, and enhance the perception of fitness sports in general.

2. METHODOLOGY

2.1. Survey Methodology

Male members of a fitness studio in Cologne were interviewed. The questions on the motives for fitness training in this studio consist of a total of 15 multiple-choice answer options, with two additional sub-questions on specific complaints being provided in one case (the question about physical complaints as a motive). So there is a total of 15, or 17 with the sub-questions, information on motives, whereby each motive can be selected or not selected by the respondents. The questionnaires were provided by the fitness centre and could be completed there or at home. 278 of the 350 available questionnaires were completed and returned. 79.4% was the response rate as a result. Members who just train on equipment were the subjects of a research. Respondents included members who had attended the club for 26 years and those who had just been there for six months. Multiple-choice questions about each person's motivations made up the questionnaire. At the data level, there are two choices for each reason: "mentioned" and "not mentioned." It was necessary to provide the respondents' ages in years. For descriptive purposes, the age data was further divided into four age groups: from 40, 41 to 55, 56 to 65, and older than 65 age in years is one metrically scaled feature. Depending on whether or not the specific motivations are stated, each case is divided into two case groups. T-tests for independent samples are used to determine whether the connections with age are significant. The t-test is used to determine whether the mean values of two groups differ significantly. If the mean age of respondents who stated a motivation differs significantly from the mean age of those who did not, then there is a correlation between age and motive choice. Age influences the motivated decision, according to a causal explanation of this. Age in years is one metrically scaled feature. Depending on whether or not the specific motivations are stated, each case is divided into two case groups. Using t-tests for independent samples, the significance of the age-related correlations is investigated. The t-test is used to ascertain whether the mean values of two groups differ significantly. If the mean age of respondents who stated a motivation differs significantly from the mean age of those who did not, then there is a correlation between age and motive choice. Therefore, this might be interpreted causally as showing that age influences the motivated choice. Since the sample size is far more than $N=30$, a separate test for the dependent variable's normal distribution is not conducted. Based on the central limit theorem, we can assume that the T-test is robust in this case even if the normal distribution assumption is violated. This suggests that the T-test also produces reliable results in the significance analysis if the dependent variable's data are not regularly distributed. In each case, the precondition of the model assumption of homogeneous variances is checked using the Levene test. If there is a significant deviation from the model assumption of homogeneous variances, the significance is assessed using the corrected t-test (Welch test), which takes variance differences into account (Willimczik & Ennigkeit, 2018).

3. RESULTS

3.1. Sample Description

The sample consists of $N=147$ male respondents. The mean age of the respondents is 57.7 years, with a dispersion around the mean of 12.8 years. The age distribution shows a clear accumulation of respondents in middle to old age, with younger respondents being comparatively rare.

Table 2. Age distribution in the sample.

Feature	Characterisation	Quantity	%	Mean value	Std. dev.
Age categories	up to 40 years	15	10.2%		
	41 to 55 years	41	27.9%		
	56 to 65 years	50	34.0%		
	Older than 65 years	41	27.9%		
	Total	147	100.0%		
Age in years		147		57.7	12.8

The duration of membership is over a year for 95.9% of respondents (141 out of 147). In 4 cases (2.7%), the membership is between half a year and a year, and in 2 cases (1.4%) the membership is shorter. For those surveyed who had been members for more than a year, the median membership duration was 10.9 years (range: 6.8 years). 57 of the men surveyed stated that they had previously been members of another fitness studio. The average duration of these previous memberships was 7.2 years (range: 6.3 years).

3.2. Effects of Age on the Mention of Motives - Descriptive Statistics

Table 3 shows the mean values (MV) and standard deviations (SD) in the age at which the respective motives are mentioned or not mentioned.

Table 3: Age and motives cited.

Motives	Not named		Named		Total	
	MW	SD	MW	SD	MW	SD
Motive area: Fitness / Health						
Improve physical fitness in general	61.0	9.8	57.4	13.0	57.7	12.8
Endurance-orientated cardiovascular training	56.0	15.4	59.8	8.2	57.7	12.8
Phys. Positively influence physical complaints	52.8	15.4	61.0	9.5	57.7	12.8
<i>if yes: cardiovascular complaints</i>	61.3	9.5	59.7	9.7	61.0	9.5
<i>if yes: orthopaedic complaints</i>	57.8	9.5	61.6	9.4	61.0	9.5
Motive area: Appearance						
Weight reduction	59.6	12.8	56.1	12.6	57.7	12.8
Specialised figure training (body shaping)	57.9	12.2	56.8	15.5	57.7	12.8
Training to build muscle (bodybuilding)	59.0	11.5	55.3	14.6	57.7	12.8
Motive area: Mental experience						
Balance out every day and professional stress	64.2	12.7	52.7	10.4	57.7	12.8
Exercise in a pleasant and relaxed way	52.9	13.1	58.9	12.5	57.7	12.8
Motive area: Cognitive dimension						
Continuous guidance / training control	55.8	12.4	63.4	12.5	57.7	12.8
Info exercise effect / anatomical knowledge	57.2	13.6	58.9	10.6	57.7	12.8
Motive area: Social dimension						
Planning and managing training independently soon	58.6	10.8	56.7	14.8	57.7	12.8
Training with a partner or other people	58.2	12.6	54.9	13.6	57.7	12.8
Motive area: Performance						
Concrete sporting performance	57.0	12.9	59.8	12.5	57.7	12.8
Motive area: Motor dimension						
Addition to my sport	58.5	12.5	52.9	13.7	57.7	12.8
Preparation for my sport	58.0	13.1	53.0	5.8	57.7	12.8

From a purely descriptive point of view, the differences in the mean age values can be seen for influencing physical complaints, pleasant and relaxed training and continuous guidance and training control, where the people who mentioned the motive are older, as well as for the motive of balancing every day and work stress, where the people who did not mention the motive are older. With regard to the other motives, there are only slight descriptive mean differences in age between those who mentioned the motive in question and those who did not.

3.3. Age Influences on the Naming of Motives - Significance Test

Table 4 shows the results of the 17 T-tests for independent samples. The significance is shown as the probability of the validity of the null hypothesis in the population as well as the associated test statistics, i.e. the t-value and its degrees of freedom (df).

Degrees of freedom with non-integer values indicate that in this case the significance was calculated using the Welch test due to inhomogeneous variances.

Table 4: Significance test for motives and age.

Motives	t	df	Significance
Motive area: Fitness / Health			
Improve physical fitness in general	1.016	145	0.311
Endurance-orientated cardiovascular training	1.951	126.672	0.053
Phys. Positively influence physical complaints	3.619	87.563	<0.001
<i>if yes: cardiovascular complaints</i>	0.630	86	0.530
<i>if yes: orthopaedic complaints</i>	1.424	86	0.158
Motive area: Appearance			
Weight reduction	1.662	145	0.099
Specialised figure training (body shaping)	0.397	145	0.692
Training to build muscle (bodybuilding)	1.577	85.965	0.118
Motive area: Mental experience			
Balance out every day and professional stress	6.004	145	<0.001
Exercise in a pleasant and relaxed way	2.311	145	0.022
Motive area: Cognitive dimension			
Continuous guidance / training control	3.208	145	0.002
Info exercise effect / anatomical knowledge	0.707	145	0.480
Motive area: Social dimension			
Planning and managing training independently soon	0.875	145	0.383
Training with a partner or other people	1.103	145	0.272
Motive area: Performance			
Concrete sporting performance	1.139	145	0.257
Motive area: Motor dimension			
Addition to my sport	1.823	145	0.070
Preparation for my sport	1.207	145	0.229

The results show verifiable, significant results in 4 of the 17 significance tests. In one case, the age differences are significant at the 5% level, in another case at the 1% level and in two cases at the 0.1% level. In three other cases (endurance-orientated cardiovascular training, weight reduction and addition to my sport) the significance is only just missed.

In detail, the following significant correlations between the motives and age can be found, which therefore cannot be regarded as pure random effects of this specific sampling:

- People who mention the motive 'positively influence physical complaints' are older than people who do not mention this motive (mean values 61.0 years to 52.8 years).
- People who cite the motive 'balancing every day and professional stress' are younger than those who do not (mean 52.7 years to 64.2 years).
- People who cite the motive 'continuous guidance and training control' are older than those who do not (mean 63.4 years to 55.8 years).
- People who mention the motive 'enjoyable and relaxed training' are older than those who do not mention this motive (mean 58.9 years to 52.9 years).

4. DISCUSSION OF THE RESULTS

The subject of why athletes participate in sports is very pertinent to them. In addition to improving our understanding of human conduct, the answer to this question offers fresh perspectives on technique, didactics, and the creation of athletic events. Training successes that have a positive impact can result from this process improvement. Regardless of the setting, Lehnert et al. (2011) stress that in order to foster loyalty, health club workout programs must consider the various needs. In the setting of random sampling, eleven of the selected reasons exhibit no age dependence, at least not any that extends beyond just accidental variations. For around 3/4 of the selectable motives, there are no dependencies on age, at least none that go beyond purely random fluctuations in the sampling process. The four motives for which there are significant age differences provide an essentially plausible picture with regard to the direction of the influence of age: Those who want to influence physical discomfort as a motive, value continuous guidance and training control and want to train in a pleasant and relaxed manner tend to be older. The second largest difference, at 8.2 years as a mean value difference, is found in the influence on physical complaints. With regard to the concretisation of this motive as cardiovascular complaints or orthopaedic complaints, however, there are no longer any demonstrable age influences. Most senior fitness athletes believe that the increasing prevalence of lifestyle diseases caused by contemporary industrial civilisations poses a threat to their health. They make every effort to maintain and improve their health through suitable leisure activities (Zarotis, 1999; Zarotis et al., 2011; Zarotis, 2021). Furthermore, research has demonstrated that consistent fitness training benefits people's health (Zarotis & Tokarski, 2020; Tokarski et al., 2023). Riess et al. (2014) also showed in their scientific study that combined strength and endurance training has a positive impact on health. Additionally, according to other studies, back discomfort is preventable (Stephan et al., 2011). As they get older, male customers express a preference for a relaxed and comfortable training setting. According to this, older fitness athletes are more drawn to fitness activities for their own enjoyment and overall health than younger ones. For the elderly, continuous care is obviously more important than for the younger population. Getting professional advice makes older folks feel more secure because they don't want to make mistakes when exercising. They place a high importance on the exercises being performed accurately and diligently because they fear the possible consequences of incorrect training (Zarotis, 1999; Zarotis, 2021).

Those who cite compensation for everyday and work-related stress as a motive tend to be younger. Of all the age differences, the difference in the motive 'Balancing every day and work-related stress' is the most pronounced at 11.5 years. Younger male clients are more likely to prioritise balance between personal and work stress. The study makes it abundantly evident that exercise sports give younger people a great chance to manage the responsibilities of their jobs and daily life. Professional integration is becoming increasingly challenging due to the high performance requirements, which often lead to a dismal work atmosphere, and the lack of workplace appreciation. This leads to a loss of mental stability and frustration. Younger people are encouraged to "adjust to the stress of their daily and professional lives" for this important reason (Zarotis, 1999; Zarotis et al., 2002). Exercise reduces anxiety, controls stress, and enhances cognitive function (Battaglia, 2014). People's increasing awareness of and readiness to take proactive steps for their own health is a promising basis for the sector's future growth. This is also the case in other countries where the fitness industry is more widely recognised as a provider of health services. A positive trend towards health-oriented offers is reaching older age groups that have not received as much attention from the business thus far. In a dynamic environment, it is essential to manage development proactively and seize opportunities as they arise. A good concept should always be created from the customer's perspective and should be focused on their unique goals. One of the main causes of member departure is probably the inability to satisfy or achieve their needs, desires, and objectives. Therefore, the cornerstone of health-oriented exercise training should be intrinsic motivation from the start. The sport-related consequence experience should also be improved by promoting good fitness training experiences and reducing negative ones (Ryan & Deci, 2000; Zarotis et al., 2017; Zarotis, 2021).

5. CONCLUSION

Over time, the public's perception of fitness sports has changed. Being physically fit these days is a sign of an active, health-conscious, and body-conscious way of living. The industry's significant focus on health, among other things, has contributed to reversing the downward trend. This enables people to meaningfully combine their reasons for exercising, resting, and taking care of themselves. To better tailor the offerings to each fitness enthusiast's needs, it can be helpful to understand their motivations. A more focused approach to the target

demographic may also lead to more targeted marketing.

In almost a quarter of the recorded motives for fitness training, there is a significant influence of age with regard to the mention of these motives; this is not the case for a good three quarters of the motives. Physical complaints, pleasant and relaxed training, as well as continuous instruction and training control, are more likely to be mentioned by older people as motives. Stress reduction, on the other hand, is more likely to be mentioned by younger people as a motive. Only satisfied customers will undoubtedly remain loyal to a fitness provider. While some fitness providers completely avoid talking about customer happiness, others try—and occasionally succeed—to survey their members and customers on a regular basis. Some fitness providers find it difficult to evaluate and understand the data they gather, even when the principles of empirical survey methodology are taken into consideration. However, maintaining a favourable impact on customer satisfaction and, in turn, their loyalty can be achieved by taking meaningful action based on the survey's findings. To win over long-term clients, it is essential to thoroughly and honestly identify, understand, and categorise their motives. Giving appropriate, individualised action and fitness guidance is also essential. Additionally, the knowledge gained helps fitness centres succeed in the long run.

REFERENCES

- Battaglia C., di Cagno A., Fiorilli G., Giombini A., Borrione P., Baralla F., Marchetti M., and Pigozzi F. (2014). Participation in a 9-month selected physical exercise programme enhances psychological well-being in a prison population. *Criminal Behaviour and Mental Health*.
- Beckmann, J., Froehlich, S. M., & Elbe, A. (2009). Motivation und Volition. *Grundlagen der Sportpsychologie*, 11-562.
- Csikszentmihalyi, M., & Jackson, S. A. (2000). *Flow im Sport. Der Schluessel zur optimalen Erfahrung und Leistung*. Muenchen: BLV-Buchverlag.
- Dilger, E. (2008). *Die Fitnessbewegung in Deutschland*. Schorndorf: Hofmann.
- Elbe, A. (2020). Motive und Motivation im Sport. *Sport in Kultur und Gesellschaft*, 1-14.
- Gabler, H. (2002). *Motive im Sport: Motivationspsychologische Analysen und empirische Studien*. Schorndorf: Hofmann.
- Hackfort, D. (2001). Psychologische Aspekte des Freizeitsports. In: H. Gabler, J.R. Nitsch & R. Singer (Hrsg.), *Einfuehrung in die Sportpsychologie. Teil 2: Anwendungsfelder. 2. erweiterte und ueberarbeitete Auflage (207-236)*, Schorndorf: Hofmann-Verlag.
- Hackfort, D., Regoes, R. & Schlattmann, A. (2004). *Effekte beim Handeln. 100 Beispiele aus Sport, Beruf und Alltag*. Aachen: Meyer & Meyer-Verlag.
- Heckhausen, J., & Heckhausen, H. (2010). *Motivation und Handeln (4., ueberarb. und erw. Aufl.)*. Berlin: Springer.
- Kroehler, A., & Berti, S. (2014). Anwendung der sport- und bewegungsbezogenen Selbstkonkordanz auf den Leistungssport. *Zeitschrift für Sportpsychologie*, 21 (3), 119-126.
- Lehnert, K., Sudeck, G. & Conzelmann, A. (2011). BMZI–Berner Motiv- und Zielinventar im Freizeit - und Gesundheitssport. *Diagnostica*, 57 (3), 146-159.
- Middelkamp, J. & Steenbergen, J. (2012). Kundenbindung im Fitnessstudio. In: M. Baart de la Faille-Deutekom, J. Middelkamp & J. Steenbergen (Hrsg.), *The state of research in the global fitness industry (128-139)*. Zeist: HDD Group / Kennispraktijk.
- Nitsch, J.R. (2004). Handlungstheoretische Grundlagen der Sportpsychologie. In: H. Gabler, J.R. Nitsch & R. Singer (Hrsg.), *Einführung in die Sportpsychologie. Teil 1: Grundthemen. 4. unveränderte Auflage (43-164)*, Schorndorf: Hofmann-Verlag.
- Puca, R. M., & Schueler, J. (2017). Motivation. *Allgemeine Psychologie*, 223-249.
- Reinhardt, C. (2018). *Flow-Erleben im Sport: Empirische Untersuchungen eines motivationsbezogenen Phänomens (1. Aufl.)*. Hamburg: Kovac.
- Ryan, R. M. & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, 55 (1), 68-78.
- Riess K. J., Haykowsky M., Lawrance R., Tomczak C. R., Welsh R., Lewanczuk R., Tymchak W., Haennel R. G. & Gourishankar S. (2014). Exercise training improves aerobic capacity, muscle strength, and quality of life in renal transplant recipients. *Applied Physiology, Nutrition and Metabolism*, 39, 566-571.
- Schueler, J., Wegner, M., & Plessner, H. (2020). *Sportpsychologie: Grundlagen und Anwendung (1. Aufl.)*. Berlin: Springer.
- Stephan, A., Goebel, S. & Schmidtbleicher, D. (2011). Effekte eines maschinengestützten Krafttrainings in der Behandlung chronischen Rueckenschmerzes. *Deutsche Zeitschrift für Sportmedizin*, 62 (3), 69-74.
- Tokarski W., Tosounidis A., Zarotis G. (2023). The Need for Health & Prevention through Fitness Sports. *European Journal of Sport Sciences* 2 (4), 34-42.
- Willimczik, K., & Ennigkeit, F. (2018). *Statistik im Sport: Grundlagen - Verfahren - Anwendungen; mit Online-Uebungsaufgaben an einem realen Datensatz (5., voellig ueberarb. u. erw. Aufl.)*. Hamburg: Feldhaus, Edition Czwalina.
- Zarotis, G. F. (1999). *Ziel Fitness-Club: Motive im Fitness-Sport. Gesundheit? Aussehen? Ausgleich? Spaß?* Aachen: Meyer & Meyer.
- Zarotis, G. F., Tosounidis, A., & Zarotis, I. F. (2002). Motive zum Fitness-Sport. *Forschung Innovation Technologie: Das F.I.T.-Wissenschaftsmagazin der Deutschen Sporthochschule Köln*, 7 (1), 4-12.
- Zarotis, G., Tokarski, W. (2005). Gender-specific differences for motivation in health-oriented sports and fitness facilities. *Spectrum free time*, 28 (2), 81-89.
- Zarotis, G., Tokarski, W., Kontakos, A., & Katsagolis, A. (2011): *Free time. Physical activity, Health and Quality of Life*. Athen/Zefyri: Diadrasi.
- Zarotis G., Athanailidis I., Tosounidis A., Mastrogiannopoulos N. (2017). Drop-Out in Fitness-Sport. Comparing the general relevance of Reasons for quitting. *TRENDS in Sport Sciences*, 24 (4), 175-181.
- Zarotis G. & Tokarski W. (2020). The Effect of Recreational Sports on Human Health. *Journal of Sports and Physical Education*, 7 (3), 25-33.
- Zarotis G. F. (2020). Psychological Aspects of Leisure and Mass Sports. *East African Scholars Journal of Psychology and Behavioural Sciences*, 2 (3), 38-48.
- Zarotis G. F. (2021). Motives of Long-Term Participants in Recreational & Fitness Sport from a Socio-Psychological Perspective. *Scholars Journal of Economics Business and Management*, 8 (8), 219-227.