Review

Human Resources Management Development Regarding Work-Related Flow in Contrast to Either Happiness or PERMA Factors for Career Sustainability

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Human Resources Management Development Regarding Work-Related Flow in Contrast to Either Happiness or PERMA Factors for Career Sustainability

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Abstract: Human resources management (HRM) development aims at career sustainability. Work-related flow, as originated and defined by Csikszentmihalyi, is a process experienced by those optimally challenged by their work, considered the optimal work-related experience. Happiness is a judgment-dependent state of a pleased satisfaction with one's current experience that one hopes will continue. PERMA (Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment) represents five measurable factors of positive psychology that constitute well-being. As the optimal work-related experience, flow determines career sustainability compared with either happiness or PERMA factors. HRM development programs focused on happiness or PERMA factors thus represents risk factors regarding an inability to develop career sustainability. Established from this publisher's founding ongoing concern with sustainability, articles published in MDPI journals with the keywords "flow, Csikszentmihalyi, work" were searched, excluding those pertaining to education, health, leisure, marketing, non-workers, and spirituality. Of 628 results returned, 28 reports were included for potential assessment. Although current studies on flow represented only three, the results regarding flow position it as the best indicator of career sustainability, contrasted to either happiness or PERMA. Consequently, HRM is advised to concentrate on developing practices for assessing and encouraging employees' engagement with work-related flow in its aim of career sustainability.

Keywords: HRM; career sustainability; work-related flow; Csikszentmihalyi; happiness; PERMA; positive psychology; MDPI

1. Introduction

Human resources management (HRM) aims at career sustainability supportive of satisfying work-related experiences across the working lifespan [1]. Nevertheless, HRM has been considered to lag in this aim [2]. Yet, as a valuable process enhancing psychological health, there has been surprisingly little research into HRM development practices regarding work-related flow [3].

Work-related flow is a theory pioneered by psychologist Mihaly Csikszentmihalyi (1934-2021 [4]) that includes: (1) clear goals every step of the way; (2) immediate feedback to one's actions; (3) a balance between challenges and skills; (4) action and awareness being merged; (5) distractions being excluded from consciousness; (6) no worry of failure; (7) the disappearance of self-consciousness; (8) a distorted sense of time; and (9) the activity becoming autotelic [5]. As a particular goal-directed process dependent on meeting challenges, flow is identified as the optimal work-related experience [6]. Yet, flow is not equivalent to the experiences of fun, joy or happiness [7]. This is because aspects of the flow process may be considered frustrating by the employee during a particularly challenging task in the pursuit of the goal [8]. Recognized as one of the most significant in contemporary psychology [9], the importance of this theory—particularly with the 1990 publication of Csikszentmihalyi's book *Flow: The Psychology of Optimal Experience* [10]—was lauded by the then

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president of the American Psychological Association (1998-2000), Martin Seligman, in describing Csikszentmihalyi as "the world leader in positive psychology research" [9]. A book translated into twenty-three languages by his death in 2021, *Flow*'s author is among the most cited psychologists in a variety of fields [9] with the theory of flow validated [11] and remaining virtually unaltered since its development [12].

Flow theory became the center of a psychology that concentrated on "the good life—what it is to be healthy and sane, and what humans choose to pursue when they are not suffering or oppressed" [13] (p. 3) initiated by Seligman and Csikszentmihalyi in 1998 [13]. From its initial focus on flow, positive psychology then redirected in 2011 based on Seligman suggestion that PERMA (Positive Emotion, Engagement, Relationships, Meaning and Accomplishment) factors constitute well-being [14]. Although the originality of this measure of the good life has been called into question as differing little from the 1984 three-factor model of subjective well-being [15], PERMA factors have become a contemporary priority of research in positive psychology [16–18] including HRM research [19]. Yet, studies supporting this model have been called into question by a systematic review of PERMA related to HRM [20] and by a thirty-year positive psychology researcher's findings that these measures remain poorly constructed [21]. For these reasons, there are conceptual difficulties with basing HRM development on PERMA factors, representing a risk factor for their inability to develop career sustainability. Contrasted to PERMA factors, flow has continuously demonstrated validity and reliability [22–24].

Happiness in comparison is a judgment-dependent state in which a person, upon considering their situation, determines that they have a pleased-satisfaction with their current experience [25] that they would like to continue [26]. Unlike happiness, flow is not a judgment. Instead, it is an engaged process in which the person in flow feels indistinct from their ongoing activity [27]. If a person is asked to evaluate their situation while experiencing flow, rather than describing themselves as happy, the likely response would be they feel optimally challenged [28], although once the flow experience is over, they could be expected to say that they found the process in its totality enjoyable [29]. As such development programs by HRM that focus on happiness are risk factors to career sustainability. In this respect, career sustainability is dependent on developing and maintaining the process of flow rather than encouraging the judgment of happiness as representing one particular point in time.

How flow has been referenced in contrast to happiness or PERMA factors in articles published in journals publicly committed to sustainability is investigated. MDPI (Multidisciplinary Digital Publishing Institute) is a publisher of open access scientific journals and a member of the United Nations Global Compact in support corporate sustainability [30]. Sustainability is stated as at the core of MDPI's values [31], with a flagship journal devoted to sustainability as well as organized conferences and events based on sustainability [32]. Predicated on MDPI's concern for sustainability, a search was conducted using the MDPI search engine on 22 December 2023 for all MDPI articles with the keywords "flow, Csikszentmihalyi, work". The purpose of the search was to determine how Csikszentmihalyi's work on flow has been interpreted by MDPI authors regarding career sustainability in light of the publisher's focus on sustainability.

It is found that although interest in flow remains regarding career sustainability, research focus in MDPI publications has preferred investigations regarding happiness and PERMA factors as the predominant concerns. Yet, supported by the research results returned, HRM is presented with practical methods to support development of work-related flow rather than to either happiness or measuring PERMA factors in career sustainability.

2. Materials and Methods

The materials gathered and methods used in the 22 December 2023 search of MDPI articles pertaining to the keywords "flow, Csikszentmihalyi, work" are represented in the flow diagram of Figure 1. The records identified numbered 628 with 2 removed for lacking Csikszentmihalyi. The following were the number excluded for not pertaining to work: education—171, health—96, leisure—101, marketing—56, non-worker—123, and spirituality—51. The process followed for the

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search is that recommended by the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) [33].

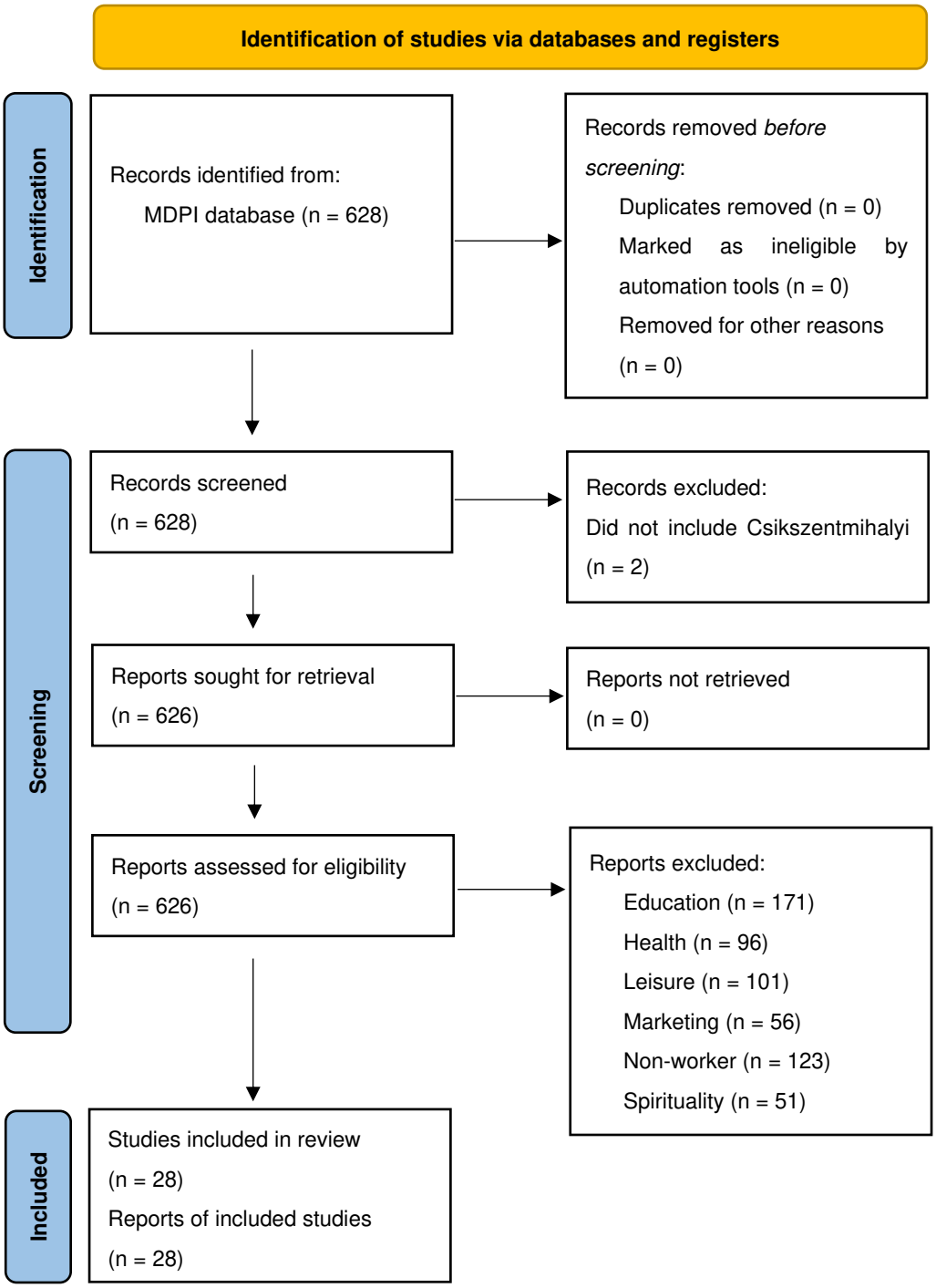

Figure 1. Results of a 22 December 2023 search of keywords "flow, Csikszentmihalyi, work" using the MDPI search engine. The flowchart template follows the PRISMA recommendations [33].

3. Results

The reports included from the search performed are the articles mentioning work-related flow while referencing a publication by Csikszentmihalyi. These articles are examined in the following manner. First, year of publication and the MDPI journal title (see Table 1). Considering that MDPI began publishing in 1996 [31], there was no restriction placed on year of publication for the search conducted. As such, reports that were included might have returned those older than five years; yet best practice in scientific research recommends that references be published within the last five years

[34]. Therefore, although all returns of reports of included studies will be listed, only those reports published within the last five years will be discussed—those from 2019-2023. Second, the articles cited written by Csikszentmihalyi will be examined for how flow is referenced by the authors of the reports included. The data for this second examination are found in Table 2. Third to be considered is whether the understanding of flow in the article is focused on flow, happiness, or some other measure, with particular attention to if PERMA factors are the "other" mentioned. The data for this assessment are found in Table 3.

The truncated titles of the reports included represent 28 MDPI articles. They are as follows: Building Work Engagement in Organizations [35], Changing the Environment Based on Empowerment [36], Contributions to Sustainability in SMEs: Human Resources [37], Creativity and Resilience as Predictors of Career Success [38], Does Happiness Launch More Businesses? Affect, Gender [39], Effect of Attainment Value and Positive Thinking [40], Effects of Selected Positive Resources on Hospitality Service [41], Engagement, Passion and Meaning of Work [42], Explaining the Paradox: How Pro-Environmental [43], Factors Affecting Entrepreneurship and Business [44], Gratitude in Organizations: Psychometric Properties [45], Human Resource Practices, Eudaimonic Well-Being [46], Intelligence and Creativity: Mapping Constructs [47], Occupational Stress: Preventing Suffering, Enhancing Wellbeing [48], Personality Traits and Positive Resources of Workers [49], Positive Orientation and Strategies for Coping with Stress [50], Promoting Flow at Work through Proactive Personality [51], Psychological Capital, Workload, and Burnout [52], Relationships between High Ability (Gifted) and Flow [53], Revisiting the Happy-Productive Worker Thesis [54], David J. Rowe's Career-Long Methods [55], Self-Perceived Employability and Meaningful Work [56], The Influence of Corporate Social Responsibility [57], The Longitudinal Link between Organizational Citizenship [58], The Nature of Job Crafting: Positive and Negative Relations [59], The Role of Relationships at Work and Happiness [60], To Be Happy: A Case Study of Entrepreneurial [61], What Are the Common Themes of Physician Resilience? [62].

3.1. Publication Date and Journal Title

The publication dates of the reports included for assessment citing Csikszentmihalyi concerning work-related flow activities, as well as the journal titles of those publications, are listed in Table 1.

Table 1. Included reports for a 22 December 2023 search of MDPI articles with the keywords "flow, Csikszentmihalyi, work" regarding their citation number, the truncated article title, the year of publication, and the MDPI journal in which the article is published.

#	Article Title (Truncated)	Year	MDPI Journal Title
35	Building Work Engagement in Organizations	2023	Behavioral Sciences
36	Changing the Environment Based on Empowerment	2014	Entropy
37	Contributions to Sustainability in SMEs: Human Resources	2021	Sustainability
38	Creativity and Resilience as Predictors of Career Success	2021	Sustainability
39	Does Happiness Launch More Businesses? Affect, Gender	2020	International Journal of Environmental Research and Public Health
40	Effect of Attainment Value and Positive Thinking	2020	Journal of Open Innovation: Technology, Market, and Complexity
41	Effects of Selected Positive Resources on Hospitality Service	2019	Sustainability
42	Engagement, Passion and Meaning of Work	2019	International Journal of Environmental Research and Public Health
43	Explaining the Paradox: How Pro-Environmental	2013	Sustainability
44	Factors Affecting Entrepreneurship and Business	2018	Sustainability

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45	Gratitude in Organizations: Psychometric Properties	2022	International Journal of Environmental Research and Public Health
46	Human Resource Practices, Eudaimonic Well-Being	2019	Sustainability
47	Intelligence and Creativity: Mapping Constructs	2020	Journal of Intelligence
48	Occupational Stress: Preventing Suffering, Enhancing Wellbeing	2016	International Journal of Environmental Research and Public Health
49	Personality Traits and Positive Resources of Workers	2018	Sustainability
50	Positive Orientation and Strategies for Coping with Stress	2019	International Journal of Environmental Research and Public Health
51	Promoting Flow at Work through Proactive Personality	2022	Sustainability
52	Psychological Capital, Workload, and Burnout	2020	Sustainability
53	Relationships between High Ability (Gifted) and Flow	2020	Sustainability
54	Revisiting the Happy-Productive Worker Thesis	2021	Sustainability
55	David J. Rowe's Career-Long Methods	2022	Challenges
56	Self-Perceived Employability and Meaningful Work	2019	Sustainability
57	The Influence of Corporate Social Responsibility	2018	Sustainability
58	The Longitudinal Link between Organizational Citizenship	2021	International Journal of Environmental Research and Public Health
59	The Nature of Job Crafting: Positive and Negative Relations	2019	International Journal of Environmental Research and Public Health
60	The Role of Relationships at Work and Happiness	2019	Sustainability
61	To Be Happy: A Case Study of Entrepreneurial	2020	Sustainability
62	What Are the Common Themes of Physician Resilience?	2022	International Journal of Environmental Research and Public Health

As *Flow* was published in 1990 [10], and the MDPI publishing house began in 1996 [31], that the first article published regarding the search of "flow, Csikszentmihalyi, work" was in 2013 is noteworthy. Although the theory of work-related flow was available for research assessment, 16 years passed before a paper was published in an MDPI journal citing Csikszentmihalyi in this regard. Furthermore, the majority of returned articles were published in 2019 and 2020. Older that five years, the following six articles will not be considered in the Discussion to follow: [36,43,44,48,49,57]. Figure 2 illustrates the publication year and number of publications per year.

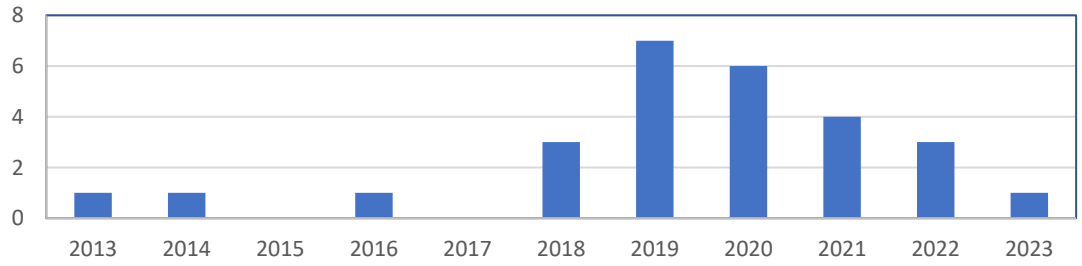

Figure 2. Number of publications in each year of publication for all articles in MDPI journals referencing Csikszentmihalyi with respect to work-related flow.

Figure 3 depicts the number of publications that reference Csikszentmihalyi in each of the various journals in which articles on work-related flow were published during the history of the MDPI publishing house. It is relevant that the largest number of publications have been published in

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MDPI's premiere journal specifically regarding sustainability [32] as this demonstrates that these various publications represent the aim of the publishing house as intended [31] most directly.

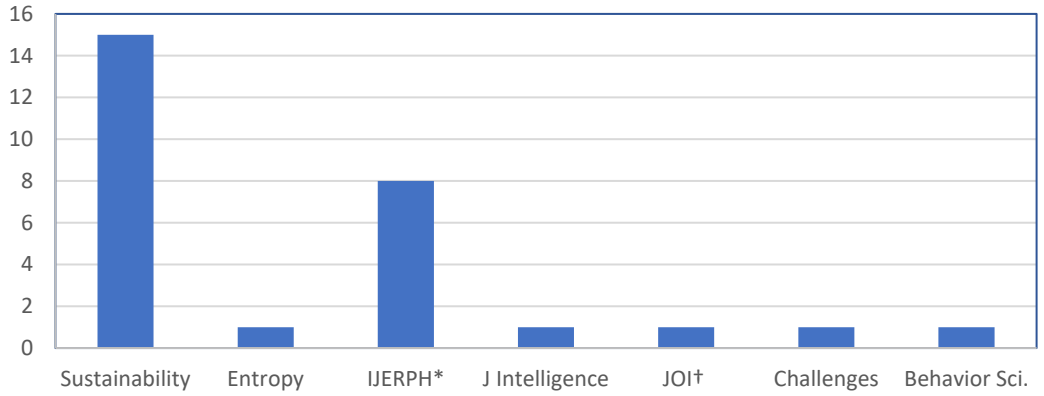

Figure 3. MDPI journal names publishing articles referencing Csikszentmihalyi regarding work-related flow depicted in order of the date of the first publiation in the various journals.* International Journal of Evironmental Research and Public Health, † Journal of Open Innovtion: Technology, Market, and Complexity.

3.2. Reference to Csikszentmihalyi Articles

Table 2 lists the Csikszentmihalyi articles referenced by the reports returned in the 22 December 2023 keyword search of "flow, Csikszentmihalyi, work". Some articles contain more than one reference to a Csikszentmihalyi publication, so each is listed. There are 18 different Csikszentmihalyi references that historically MDPI journal articles have cited. These include the following titles: Positive Psychology: An Introduction [63], *Beyond Boredom and Anxiety: experiencing flow in work and play* [29], *Creatividad: El fluir y la psicología del descubirmiento y la invención* [64], *Flow: The psychology of optimal experience* [65], *Optimal Experience: Psychological Studies of Flow in Consciousness* [66], If we are so rich, why aren't we happy? [67], The Concept of Flow [68], The experience sampling method [69], All You Need Is Love: The Importance of Partner and Family Relations to Highly Creative Individuals' Well-Being and Success [70], *The creative vision: a longitudinal study of problem finding in art* [71], Optimal experience in work and leisure [72], *Creativity: flow and the psychology of discovery and invention* [5], Musical improvisation: A systems approach [73], Proneness for Psychological Flow [74], Cultivating talent throughout life [75], Flow theory and research [76], Optimal Experience in Adult Learning: Conception and Validation of the Flow in Education Scale (EduFlow-2) [77], The construction of meaning through vital engagement [78].

Table 2. Included reports for a 22 December 2023 search of MDPI articles with the keywords "flow, Csikszentmihalyi, work" regarding their citation number in this publication, the truncated article title, the citaion number in this publication of the work by Csikszentmihalyi cited in the included report, and the truncated title of the work by Csikszentmihalyi cited by the included report.

#	Article Title (Truncated)	#	Csikszentmihalyi Title (Truncated)
35	Building Work Engagement in Organizations	63	Positive Psychology. An Introduction
36	Changing the Environment Based on Empowerment	29	Beyond Boredom and Anxiety
37	Contributions to Sustainability in SMEs: Human Resources	64	Creatividad: El Fluir Y La Psicología
38	Creativity and Resilience as Predictors of Career Success	64	Creatividad: El Fluir y La Psicología
39	Does Happiness Launch More Businesses? Affect, Gender	65	Flow

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40	Effect of Attainment Value and Positive Thinking	66	Optimal Experience: Psychological
41	Effects of Selected Positive Resources on Hospitality Service	63	Positive psychology: An introduction
42	Engagement, Passion and Meaning of Work	63	Positive psychology: An introduction
43	Explaining the Paradox: How Pro-Environmental	67	If we are so rich, why aren't we happy?
44	Factors Affecting Entrepreneurship and Business	68	The concept of flow
45	Gratitude in Organizations: Psychometric Properties	63	Positive psychology: An introduction
46	Human Resource Practices, Eudaimonic Well-Being	63	Positive psychology: An introduction
47	Intelligence and Creativity: Mapping Constructs	69	The experience sampling method
		70	All You Need Is Love
48	Occupational Stress: Preventing Suffering, Enhancing Wellbeing	63	Positive psychology: An introduction
49	Personality Traits and Positive Resources of Workers	63	Positive psychology: An introduction
50	Positive Orientation and Strategies for Coping with Stress	63	Positive psychology: An introduction
51	Promoting Flow at Work through Proactive Personality	29	Beyond boredom and anxiety
52	Psychological Capital, Workload, and Burnout	63	Positive psychology: An introduction
53	Relationships between High Ability (Gifted) and Flow	71	The Creative Vision
		64	Creatividad. El Fluir y la Psicología
		65	Flow
		72	Optimal experience in work and
		5	leisure
		73	Creativity: The Work and Lives*
		74	Musical improvisation
		75	Proneness for Psychological Flow
		76	Cultivating talent throughout life
			Flow theory and research
54	Revisiting the Happy-Productive Worker Thesis	65	Flow
55	David J. Rowe's Career-Long Methods	65	Flow
		67	If we are so rich, why aren't we
		72	happy?
		77	Optimal experience in work and leisure
			Optimal experience in adult learning
56	Self-Perceived Employability and Meaningful Work	78	The construction of meaning
57	The Influence of Corporate Social Responsibility	63	Positive psychology: An introduction
58	The Longitudinal Link between Organizational Citizenship	63	Positive psychology: An introduction
59	The Nature of Job Crafting: Positive and Negative Relations	65	Flow
60	The Role of Relationships at Work and Happiness	63	Positive psychology: An introduction
61	To Be Happy: A Case Study of Entrepreneurial	63	Positive psychology: An introduction

62 What Are the Common Themes of Physician Resilience? 65 Flow

*This title's ISBN no longer refers to the book as Creativity: The Work and Lives of 91 Eminent People. It is now titled Creativity: Flow and the Psychology of Discovery and Invention although it is the same book.

The particular concern of this investigation is those articles that not only reference Csikszentmihalyi, but that they do so regarding his theory of flow in a work-related setting. Figure 4 demonstrates that 13 of the 28 articles that cite Csikszentmihalyi are in regards to the article Positive Psychology: An Introduction. Although the theory of flow is mentioned in this publication, there is no explanation of the theory with respect to work. As such, in the Discussion to follow, those of the 28 articles that cite only this article regarding work-related flow will be excluded from consideration. Beyond those that have already been elimiated from the Discussion to follow as a result of being published pre-2019 [36,43,44,48,49,57], these additional 10 records will not be part of the Discussion because they reference Positive Psychology: An Introduction and no other reference by Csikszentmihalyi [35,41,42,45,46,50,52,58,60,61].

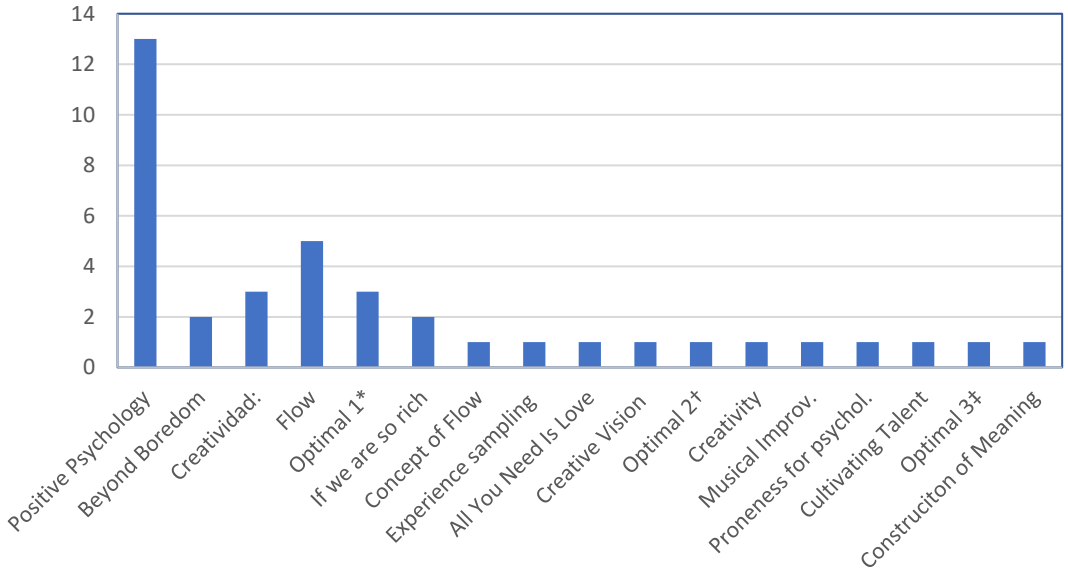

Figure 4. Number and title of Csikszentmihalyi publications referenced in the various MDPI articles in order of their appearance in Table 2. * *Optimal Experience: Psychological Studies of Flow in Consciousness,* †Optimal Experience in Work and Leisure, ‡Optimal Experience in Adult Learning: Conception and Validation of the Flow in Education Scale (EduFlow-2).

Futher to be eliminated from assessment are those returned records that reference other Csikszentmihalyi-authored publications that do not discuss the theory of work-related flow. This includes one included record [46]. It references pulibcations by Csikszentmihalyi related to daily living practices rather than to work [69,70].

3.3. Flow, Happiness, or Other (Including PERMA Factors)

Table 3 represents whether the included reports focus on flow, happiness or another measure (with specific reference to PERMA factors if they are the other). All of the returned reports are listed in this manner in Table 3. The articles that will no longer be considered have been eliminated because they are either too old [36,43,44,48,49,57], or reference works by Csikszentmihalyi that do not focus on the theory of work-related flow [35,41,42,45,46,50,52,58,60,61]. Since these articles have now been eliminated from further consideration, only those articles embolden in Table 3 will be those referred to in the Discussion to follow [36–39,50,52–55,58,61].

Table 3. Reports of included studies for a 22 December 2023 search of MDPI articles with the keywords "flow, Csikszentmihalyi, work" regarding their citation number, the truncated article title, and whether the article mentions, flow, happiness or some other aspect to develop career sustainability noting those that refer to one or more PERMA factors. Items emboldened represent the reports meeting the criteria for assessment.

#	Article Title (Truncated)	Flow	Happiness	Other
35	Building Work Engagement in Organizations	×	×	Work engagement *
36	Changing the Environment Based on Empowerment	✓	×	×
37	**Contributions to Sustainability in SMEs: Human Resources**	×	×	**Creativity**
38	**Creativity and Resilience as Predictors of Career Success**	×	✓	**Creativity**
39	**Does Happiness Launch More Businesses? Affect, Gender**	×	✓	**Positive emotions***
40	**Effect of Attainment Value and Positive Thinking**	×	✓	**Engagement*** **Positive emotions*** **Creativity**
41	Effects of Selected Positive Resources on Hospitality Service	×	×	Work engagement* Positive emotions*
42	Engagement, Passion and Meaning of Work	✓	✓	Positive emotions* Character strengths
43	Explaining the Paradox: How Pro-Environmental	×	✓	Doing good
44	Factors Affecting Entrepreneurship and Business	✓	✓	Motivation
45	Gratitude in Organizations: Psychometric Properties	×	✓	Gratitude
46	Human Resource Practices, Eudaimonic Well-Being	×	✓	Creativity
47	Intelligence and Creativity: Mapping Constructs	×	✓	Creativity
48	Occupational Stress: Preventing Suffering, Enhancing Wellbeing	×	✓	Engagement* Positive emotions* Satisfaction Meaning*
49	Personality Traits and Positive Resources of Workers	×	×	Optimism Hope
50	Positive Orientation and Strategies for Coping with Stress	×	×	Positive orientation
51	**Promoting Flow at Work through Proactive Personality**	✓	✓	**Engagement***
52	Psychological Capital, Workload, and Burnout:	×	×	Psychological capital
53	**Relationships between High Ability (Gifted) and Flow**	✓	×	×
54	**Revisiting the Happy-Productive Worker Thesis**	×	×	**Engagement***
55	**David J. Rowe's Career-Long Methods**	✓	✓	×
56	**Self-Perceived Employability and Meaningful Work**	×	✓	**Meaningful work***
57	The Influence of Corporate Social Responsibility	×	✓	Meaningful work*
58	The Longitudinal Link between Organizational Citizenship	×	✓	Flourishing †
59	**The Nature of Job Crafting: Positive and Negative Relations**	×	×	**Job autonomy**
60	The Role of Relationships at Work and Happiness	×	✓	Meaningful work*
61	To Be Happy: A Case Study of Entrepreneurial	×	✓	Entrepreneurship

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62	**What Are the Common Themes of Physician Resilience?**	×	✓	**Self-determination**

*A PERMA factor (Positive Emotions, Engagement, Relationships, Meaning, or Accomplishment). † Article directly references PERMA.

3.4. Final Reports Included to be Considered for Assesment

As listed in Table 4, the final reports to be considered for assessment of those included are 11 in number [36–39,50,52–55,58,61]. Of these, 6 articles are published in *Sustainability*, 3 in *International Journal of Environmental Research and Public Health*, and 1 each in *Journal of Open Innovation: Technology, Market, and Complexity*, and in *Challenges*. The number of Csikszentmihalyi references cited by these reports in total equal 13. They are cited here in relation to how they appear in Table 4 [5,29,64–66,71–78]. Of these 11 reports, 3 mention flow, 7 consider happiness, and 9 investigate some other measure, including identifying PERMA factors in 6 cases (one report mentioned two of the PERMA factors).

Table 4. Final reports to be considered for assessment of included studies for a 22 December 2023 search of MDPI articles with the keywords "flow, Csikszentmihalyi, work" regarding their citation number, the MDPI journal in which they are published, the work by Csikszentmihalyi that is referenced, and whether the article mentions, flow, happiness or some other aspect to develop career sustainability noting those that refer to one or more PERMA factors.

#	MDPI Journal Title	#	Csikszentmihalyi Title (Truncated)	Flow	Happiness	Other
37	Sustainability	64	Creatividad: El Fluir Y La Psicología	×	×	Creativity
38	Sustainability	64	Creatividad: El Fluir Y La Psicología	×	✓	Creativity
39	International Journal of Environmental Research and Public Health	65	Flow	×	✓	Positive emotions*
40	Journal of Open Innovation: Technology, Market, and Complexity	66	Optimal Experience: Psychological	×	✓	Engagement* Positive emotions* Creativity
51	Sustainability	29	Beyond boredom and anxiety	✓	✓	Engagement*
53	Sustainability	71	The Creative Vision	✓	×	×
		64	Creatividad. El Fluir y la Psicología			
		65	Flow			
		72	Optimal experience in work and leisure			
		5	Creativity: The Work and Lives			
		73	Musical improvisation			
		74	Proneness for Psychological			
		75	Flow			
		77	Cultivating talent throughout life			
			Flow theory and research			
54	Sustainability	65	Flow	×	×	Engagement*
55	Challenges	65	Flow	✓	✓	×
		67	If we are so rich, why aren't we happy?			

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		72	Optimal experience in work and leisure			
		77	Optimal experience in adult learning			
56	Sustainability	78	The construction of meaning	×	✓	Meaningful work*
59	International Journal of Environmental Research and Public Health	65	Flow	×	×	Job autonomy
62	International Journal of Environmental Research and Public Health	65	Flow	×	✓	Self-determination

*A PERMA factor (Positive Emotions, Engagement, Relationships, Meaning, or Accomplishment).

4. Discussion

The aim of this work is to determine the way in which work-related flow has been referenced in contrast to happiness or PERMA factors in articles published since 2019 in journals publicly committed to sustainability where MPDI journals have been noted as those specifically created in relation to sustainability. Why flow is the focus is that PERMA factor measurement has been found unreliable regarding career sustainability [20,21] and a focus on happiness is in relation to a fixed time point rather than consistent work sustainability [25,26]. Although flow has been referenced in each of the 11 final reports considered for assessment, only three of the articles were found to actually discuss flow as important to career sustainability [51,53,55]. As a result, only these three reports are further assessed. Two of these articles discuss both flow and happiness [51,55], while one concerns flow alone [53]. Of these reports, two are published in *Sustainability* [51,53], while one is published in *Challenges* [55]. One of these included reports also discusses a PERMA factor [51]; this is an article published in *Sustainability*. The relevance of the points made in these three papers concerning HRM of career sustainability is discussed next.

4.1. Three Reports Discussing Flow

The three reports published within the last five years regarding work-related flow are examined in relation to when and where they were published, the work by Csikszentmihalyi they reference, the aim of the study, its results, and how it interprets work-related flow.

4.1.1. Proactive Personality and Flow in Italian Employees

The full title of the first article regarding flow is Promoting Flow at Work through Proactive Personality: A Sequential Mediation Model with Evidence from Italian Employees [51]. It was published 2022 in *Sustainability*. The Csikszentmihalyi work that the authors rely on regarding their understanding of work-related flow is his book published in 2000, *Beyond Boredom and Anxiety: Experiencing Flow in Work and Play* [29]. The authors seek to fill a gap in the literature regarding the relationship between proactivity and flow at work, and the role of the proactive personality, job crafting, and work engagement (a PERMA factor) in promoting flow at work. They report on an online study of 362 Italian employees to determine the relationship among these variables. The results indicate that proactive employees are able to experience flow at work through job crafting and work engagement. However, the value of these results related to Csikszentmihalyi's meaning of flow is questionable. The reason is that after introducing Csikszentmihalyi's definition of flow [29], the authors turn to alternative definition of the term [79] depending on the work of Ryan and Deci regarding self-determination theory [80]—which deals with evaluations of individual action (e.g. acting autonomously or competently) in contrast to flow theory which focuses on the experience itself

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[81]. In substituting another understanding of flow than Csikszentmihalyi's, these authors have interpreted the purpose of engaging in flow to be enjoyment. As has been noted, the focus of flow in Csikszentmihalyi's research findings is not enjoyment (although he believed life's activities should be enjoyable [82] (pp. xx-xxi)), rather employees engage in flow and prefer flow activities because they are optimally challenging and this is what produces the optimal work-related experience [72]. Consequently, it is unclear whether those with proactive personality are most likely to craft work that produces the type of work engagement that is optimally challenging. Rather, their focus may be making their work as enjoyable as possible. That these authors have reinterpreted flow matters because they consider flow a short-term peak experience. Interpreted in this way, contrary to Csikszentmihalyi's understanding, flow is not career sustainable.

4.1.2. Flow in High Ability Spanish Music Performers

The second article that concerns flow is titled Relationships between High Ability (Gifted) and Flow in Music Performers: Pilot Study Results [53] and was published in 2020, also in *Sustainability*. The authors of this article reference nine of Csikszentmihalyi's publications: *The Creative Vision: A Longitudinal Study of Problem Finding in Art* [71]; *Creatividad: El fluir y la psicología del descubirmiento y la invención*. [64]; *Flow: The Psychology of Optimal Experience* [65]; Optimal experience in work and leisure [72]; *Creativity: The Work and Lives of 91 Eminent People* (note, the title has now changed for this work) [5]; Musical Improvisation: A Systems Approach [73]; Proneness for Psychological Flow in Everyday Life: Associations with Personality and Intelligence [74]; Cultivating talent throughout life [75]; Flow theory and research [76]. Unlike the first article on Italian employees, these authors have a deeper and more nuanced understanding of Csikszentmihalyi's theory of flow, yet even with this better understanding, rather than stating that work in this regard is optimally challenging, they instead summarize it as being pleasurable. On the other hand, apart from this summary, the body of the paper clarifies that their definition of flow is actually that supported by Csikszentmihalyi. The aim of their study is to investigate the relationship among high ability Spanish musicians, dedication to music, and flow while they engage in musical activities. The result: the best indicator of the flow state is found to be a loss of self-consciousness when performing to a statistically significant degree. What the authors also found is that their results supported Csikszentmihalyi's findings that there is no relationship between intelligence and the experience of flow measured using a fluid intelligence test, such as Raven's SPM Plus or the Wiener Matrizen Test [74]. Their results also note that those with the greatest talent experienced flow more often than others. In this regard, talent includes the courage to be different, possessing independent thought and action, and having high levels of self-confidence. Additionally, the authors suggest that flow state during musical performance may relate to greater emotional intelligence based on a 2013 reference [83]. Generally, these authors consider investigating flow to be worthwhile regarding career sustainability, especially regarding the aspect of a loss of self-consciousness, which they consider may be tied to better learning in highly accomplished musicians.

4.1.3. Promoting Flow in Canadian Physics Research

The final article of the three discussing flow in work is one by this author, published 2022 in *Challenges*. Its full title is Self-Direction in Physics Graduate Education: Insights for STEM from David J. Rowe's Career-Long Methods [55]. Although this is an essay that concerns education—and search returns regarding education were initially excluded from consideration—this publication is focused on career sustainability. For this reason, it is included for assessment. The works by Csikszentmihalyi referenced in the paper are: *Flow: The Psychology of Optimal Experience* [65]; If We Are so Rich, Why Aren't We Happy? [67]; Optimal experience in work and leisure [72]; Optimal Experience in Adult Learning: Conception and Validation of the Flow in Education Scale (EduFlow-2) [77]. This study explores the self-directed learning promoted by University of Toronto physicist David J. Rowe in response to the type of research flow he consistently experienced as a theoretical mathematical physicist that brought him the greatest work-related satisfaction. Explored are the ways he structured his work with colleagues to encourage everyday flow in their interactions concerning what he

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provided to them with regards to his space, time, open mindedness, and the particular theoretical contributions he offered. The results of his methods encouraged his collaborators to sustain their careers through consistently pioneering insightful resolutions to complex, multidimensional, mathematical physics problems. This research process permitted and encouraged Rowe to sustain his own research career until the day of his death at 84. In this regard, Rowe understood work-related flow as Csikszentmihalyi defined it—a desired activity stretching the researcher's mind to its limits in a voluntary effort to accomplish something personally valued as both difficult and worthwhile [65].

4.2. Future Research Directions

This study of searched reports of the keywords "flow, Csikszentmihalyi, work" in MDPI journals investigated for their fundamental support of sustainability has resulted in the finding that there are only three articles published in MDPI journals within the last five years that investigate how flow might contribute to career sustainability. This paucity of publications on the topic, together with the result that work-related flow is recognized as most important for career sustainability because it aligns with employees' values [84], present reasons why work-related flow as envisioned by Csikszentmihalyi is a useful area of research in HRM. In undertaking such work, researchers must be cautious to consider flow as an optimally challenging work-related activity rather than erroneously focusing on it as peak enjoyment. As noted, concerning the Italian study that based its understanding of flow on later research other than that of Csikszentmihalyi, if flow is interpreted as outstanding enjoyment, it is a short-term result rather than a career-sustaining activity. In this way, what needs to be considered by HRM in investigating flow is what can be enhanced in employees and what types of resources can be provided to promote work-related flow.

The research regarding high ability Spanish musicians recognized high emotional intelligence coupled with a lack of self-consciousness as the areas to be enhanced to encourage flow. In that these the researchers presented Csikszentmihalyi's understanding of flow rather than another interpretation, their findings have particular applicability. Regarding how physicist David Rowe organized his work with colleagues to increase their self-direction and the regular research flow of each participant—he followed a six-step process (involving four different aspects) summarized to follow [55]:

1. Identify resources needed to achieve each goal—(space)
2. Identify the structure and sequence of learning activities—(time)
3. Outline how it will be known those goals have been achieved—(time)
4. Create a timeline for activities' completion—(time)
5. Locate a mentor to provide feedback on the plan—(open mindedness)
6. Develop goals for study—(theoretical contributions).

That this process developed by Rowe has been successful in promoting consistent work-related flow in his colleagues is witnessed by the comments made by four of the physicists he worked with throughout his career in their adopting similar techniques to those of Rowe in their own research groups . Concerning the influence of Rowe's research program organization, Jerry Draayer, Professor of Physics and Louisiana State University Distinguished Research Master, has stated, "David Rowe was a master mentor and clever innovator—at LSU we are attempting to keep that spirit alive" [85]. George Rosensteel Professor of Physics at Tulane University was Rowe's most illustrious graduate student who died a few months after Rowe in 2021. That he had upheld the flow-encouraging work-group style of Rowe was highlighted in Rosensteel's obituary: "He was kind and generous with his knowledge and his time. George brought out the best in people, challenged his students, and encouraged them to reach their potential" [86]. Hubert de Guise, Professor of Physics at Lakehead University, has stated that the qualities of Rowe in getting the best out of his research colleagues included that "he was unhurried by the outside world…immensely patient" and that he had a skill "identifying, developing and leveraging the interests" of his colleagues "without impeding their progress while still maintaining sufficient focus to actually solve a non-trivial problem" [87]. Canada Research Chair in Theoretical Chemistry, Associate Professor Stijn De Baerdemacker made this

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comment regarding the flow experience of working with David Rowe: "David… showed me his thought processes on multiple occasions during group meetings. I have taken that with me… There would be a research presentation every week by one of us (or a visitor). I contributed to that on multiple occasions. The magic ingredient was that these were topics that were tangentially related to everybody's interests" [88].

Beyond investigating the role of emotional intelligence related to flow when considering career sustainability as advised regarding working with high achieving musicians, it is suggested HRMs study making appropriate changes to the space available to employees, their approach to time management, the open-mindedness of supervisors, and management's foundational contributions to introducing and discussing work-related problems comparable to the process developed by Rowe. The details of this process have been discussed in the 2022 publication on Rowe's methods [55]. These approaches to flow are worth studying as they have been found fruitful in achieving career sustainability. Furthermore, HRM would do well to study the publications by Csikszentmihalyi referenced in the two articles that use his understanding of flow with respect to their study results [64,65,67,71–77]. Although two of these articles are specific to careers in the arts [71,73], and one is the Spanish version [64] of another publication by Csikszentmihalyi in English [5], most would be of general interest to HRM looking to develop career sustainability through work-related flow.

4.3. Limitations

A limitation to this work is that a decision was made by the author to search only MDPI journals regarding the keywords "flow, Csikszentmihalyi, work", rather than conducting a true scoping review of these keywords in all journals. This decision was made because the aim was to investigate research published by publishing houses created with a commitment to sustainability. Although other publishing houses have adopted this commitment [89–91], MDPI appears to be the only publishing house created with sustainability as the focus. As this study is regarding career sustainability, the importance of sustainability for the publishing house in general was deemed relevant.

An additional limitation of a study comparing mentions of flow, happiness and PERMA factors in HRM-related documents is that happiness and PERMA factors were investigated only concerning their mention in studies that investigated flow. As such, there are other studies of happiness [92,93] alone and in combination with PERMA factors [94–97] that do not discuss flow. Given that the focus of this work is flow in making a comparison with happiness or PERMA factors, this omission is to be expected. Nevertheless, it represents a limitation of this study.

There were only three papers identified that investigated Csikszentmihalyi's understanding of flow and, of these, only two that did so in relation to his research findings. As a result, the work environments in which flow was considered were concerning those of professional musicians and theoretical mathematical physicists—two exceptionally creative fields open to few employees. There is no research currently available in MDPI journals regarding flow experiences in more mundane occupations. For this reason, it is unknown if what is important regarding flow to developing sustainable careers for other employees is similar to what has been found within these technically difficult occupations.

The evaluation of the articles for their authors' points of view was contingent on the reading done by this author. This is an additional limitation. Although this author undertook the present study with the aim of objectivity, it is possible that the author had an unrecognized cognitive bias [98]. Various frameworks have been developed to debias research. Nevertheless, there remains little research on the efficacy of these models and, as such, how to recognize and reduce cognitive bias is identified as an area in need of additional research [99].

5. Conclusions

The importance of work-related flow regarding career sustainability was pioneered by Csikszentmihalyi and became popular with the publication of his 1990 book, *Flow*. It is notable that the theory he initially proposed regarding flow based on his research has remained unchanged since then in representing the optimal work-related experience. The search of MDPI journal articles of the keyword "flow, Csikszentmihalyi, work" found 28 reports. However, although flow is stable predictor of career sustainability, within the last five years only three of these articles have been published in MDPI journals that may be of help to HRM in developing career sustainability regarding flow. Interest in flow has remained regarding career sustainability over the years; nevertheless, research focus on career sustainability has shifted from a study of flow to investigations regarding happiness and aspects of PERMA as the predominant concerns. This has resulted in a paucity of the research devoted to flow—a concept that has proven its value for career sustainability unlike either a focus on happiness or PERMA factors . As a result, HRM are advised to redirected their development of career sustainability to work-related flow in contrast to happiness or measuring PERMA factors. From the research presented, how best to do this is for HRM to (1) concentrate of recruitment of employees with courage to be different, who possess independent thought and action, and have high levels of self-confidence, and (2) support programs that provide employees with the appropriately designed space and time to undertake what they personally value; as well as providing supervisors who are open minded in their approach to solving problems and able to provide foundational theoretical contributions to solving work-related problems. Studying the works by Csikszentmihalyi referenced by these researchers would be additionally helpful to developing programs. In adopting these means, HRM may anticipate strides in developing employee career sustainability.

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