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Linking Irrational Beliefs with Well-Being at Work: The Role of Fulfilling Performance Expectations

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Abstract: This study explored the association between irrational beliefs—i.e., rigid, unrealistic, and illogical convictions that people hold—and well-being at work. In detail, we tested whether secondary irrational beliefs (i.e., self-depreciation, low frustration tolerance, and awfulizing) displayed both common and unique associations with well-being. Furthermore, we investigated whether the perceived degree of performance expectations' fulfillment mediate such associations. Data were collected on a sample of 3576 employees from companies providing business and consulting services. Results showed that the general irrationality factor and awfulizing were negatively associated with well-being, both directly and indirectly (via a lower degree of performance expectations' fulfillment). Low frustration tolerance was positively related with the performance expectations' fulfillment, which, in turn, fully mediated its association with well-being. Self-depreciation did not relate to our outcomes. The study contributes to the advancement of irrational beliefs literature as it is the first to disentangle the common and unique associations they have with well-being at work and identified the perceived fulfillment of performance expectations as a relevant mediating mechanism in the workplace. Theoretical and practical implications are discussed.

Keywords: irrational beliefs; performance; well-being

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1. Introduction

The COVID-19 pandemic has forced organizations to place employees' well-being among their top priorities [1], calling for keys to understand the factors that can determine or undermine it and how to intervene. To date, the literature has focused mainly on building personal resources such as resilience and self-efficacy [2] and on valuing character strengths [3] to enable employees to cope effectively with adverse events and actively pursuit an intrinsic sense of pleasure and fulfillment. However, the inner complexity of human beings carries along not only resources they can rely on but also vulnerabilities that can hinder their personal adjustment. Indeed, individuals can set demanding requirements on themselves and their behavior that give rise to physical and psychological costs or withhold functional responses to their environment, ultimately leading to health impairment [4,5]. For instance, employees may put pressure on themselves by investing disproportionate efforts in their job [6] in order to achieve absolute excellence in what they do or match their own perfectionistic concerns [7]. Acknowledging individuals' vulnerabilities is essential for gaining a more holistic understanding of individual functioning. This awareness can pave the way for innovative approaches to promoting human sustainability within organizations, ensuring the long-term well-being and flourishing of individuals. Therefore, in the present study, we chose to explore this perspective through irrational beliefs, thereby emphasizing the consequences that the way people decode and interpret reality can have on their well-being.

Irrational beliefs can be conceptualized as rigid, inconsistent with reality, and dysfunctional convictions [8]. Indeed, they stem from a primary demand that a certain condition pertaining to important aspects of the self (e.g., "I must be perfect") or the external environment (e.g., Others should approve me) must or must not exist, namely demandingness [9]. However, individuals may differ in the secondary beliefs they develop about the meaning and implications of events that violate this cardinal demand [10]. In fact, when there are events that thwart these fundamental expectations, secondary irrational beliefs (i.e., awfulizing, self-depreciation, and low frustration tolerance) uniquely influence how an individual interprets and responds to them [10]. More precisely, with respect to awfulizing, individuals exhibit a propensity to exaggerate the gravity of negative events, viewing them as irreparable or exceedingly severe. Others can be inclined toward self-depreciation, deducing feelings of profound inadequacy or unworthiness from unfavorable events. Others display low frustration tolerance, perceiving the actual or potential occurrence of such events as intolerable.

Research and clinical practice have extensively demonstrated that these cognitive structures are generally harbingers of maladaptive psychological and behavioral reactions to contextual demands [11,12]. Although the application of irrational beliefs in the workplace is very recent [13], research has begun to find associations in samples of employees with increases in strain (e.g., burnout) and negative work-related outcomes (e.g., intention to quit; absenteeism) [14–16]. Despite this, several issues require further investigation. First, the evidence on the comparative effects of irrational beliefs on psychological well-being is still not conclusive. Previous research provided strong support to the relationship between irrationality and indicators of psychological general distress [e.g., 12], while the association with indicators of psychological well-being has been less empirically tested [17], especially in the workplace. This is relevant since well-being at work emphasizes the person's perception of well-being within the workplace and then differs from general well-being, which refers to the overall state of an individual's life. However, based both on the strong evidence in the wider field of general psychology and on the limited studies in the organizational one, it has been suggested that as irrational beliefs interfere with the functionality of emotional, cognitive, and behavioral responses to the demands of the environment [18], they may induce malaise and potentially prevent people from feeling fully satisfied and fulfilled in their work lives [19]. Moreover, the unique contribution of each irrational belief to people's functioning is still a matter of debate. In this regard, the literature has postulated that all specific types of irrational beliefs share a common demandingness [9,10] and previous studies on their measurement have shown that their best empirical representation is given when both their underlying general irrationality and the uniqueness of each type is accounted for [20–22]. However, in comparing the specific fallouts of each irrational belief, previous studies have overlooked their commonalities, biasing the conclusions that can be drawn from empirical evidence [23].

Second, the intervening mechanisms that may explain the relationship between irrational beliefs and well-being have been little addressed in the workplace to date. A central component of organizational contexts is performance as a direct expression of the competences needed to achieve the expected results of one's job role and is the main target of developmental actions (e.g., incentives, informal feedback from managers, performance management systems) [24,25]. Even if performance is objectively quantifiable (e.g., sales performance, financial profits) [26], the way people symbolize it, through their own subjective perceptions, judgments, and expectations, may offer a key to the employee's sense of self-actualization and satisfaction. Indeed, the expectations that people have on their own performance act as an internal challenge, as they require an increase in efforts and investments on the job, to achieve motivational and self-enhancing benefits [4]. Previous studies have shown that irrational thoughts can objectively undermine individual performance [27]. In addition, they have been linked with high and strict evaluation standards (e.g., perfectionism) and one's work overinvestment due to feelings of internal inadequacy and guilt (e.g., workaholism), which usually result in reduced well-being and

distress [7,28–31]. For this reason, we argue that irrational beliefs may be harmful to well-being at work because they may hinder employees' perceptions of their own performance and, more specifically, the degree to which they are matching performance expectations.

As such, the present study aims to examine the common and distinctive associations between irrational beliefs and well-being at work. Moreover, we examine the extent to which employees' perceived fulfillment of performance expectations mediate the link between irrational beliefs and well-being at work. In detail, as shown in Figure 1, we tested whether the three secondary irrational beliefs (i.e., self-depreciation, low frustration tolerance, and awfulizing) and a general irrationality factor (i.e., accounting for the underlying commonalities among irrational beliefs), when considered simultaneously, predicted unique variance in the perceived fulfillment of performance expectations and, in turn, in well-being at work.

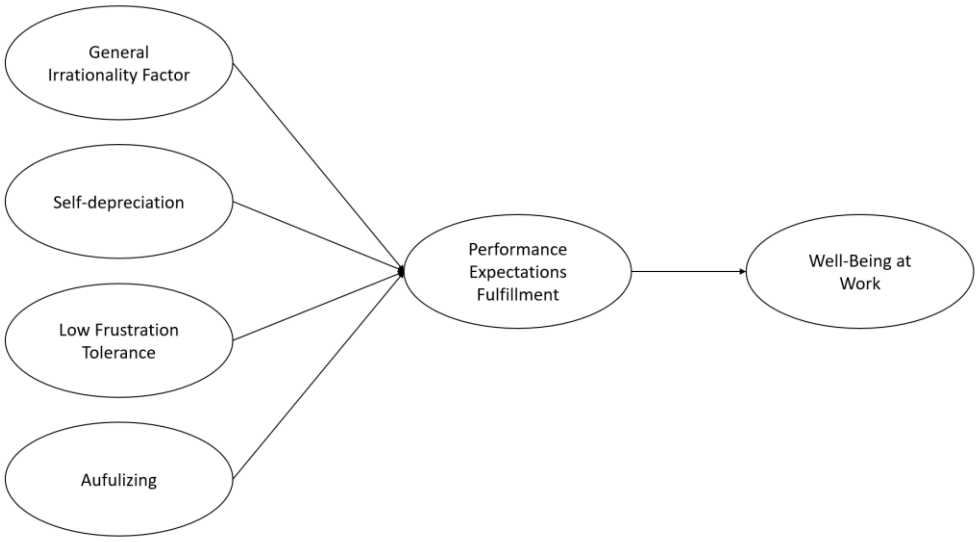

Figure 1. The overarching conceptual model.

1.1. Disentangling the Common and Distinctive Effects of Secondary Irrational Beliefs on Well-Being

Irrational beliefs can be organized into four major categories: demandingness, awfulizing, self-depreciation, and low frustration tolerance [32]. Demandingness refers to absolutistic and dogmatic requirements that individuals express towards themselves, others, or their general context in the form of "musts" (e.g., "I must be successful"). Notably, it represents the primary irrational belief [9,10], the deep cognitive assumption on which the construction of the other three, or secondary, irrational beliefs rests [33]. Self-depreciation refers to the individual tendency to draw global and self-downing evaluations from negative events (e.g., "(I must be successful, so...) if I fail I am worthless"). Low frustration tolerance is related to people's beliefs that they are unable to tolerate a given negative situation or set of circumstances (e.g., "(I must be successful, so...) I cannot bear an obstacle standing between me and my goals"). Awfulizing indicates the individual tendency to catastrophize present or future negative events by exaggerating their unpleasantness and severity to the utmost (e.g., "(I must be successful, so...) it would be terrible having a setback").

The problematic nature of irrational beliefs is that they become rigid cognitive structures through which individuals encode and interpret reality in a stable way [10]. Thus, such beliefs drive and settle maladaptive patterns of emotional, cognitive, and behavioral functioning to cope with contextual demands, thereby imposing additional personal costs on one's adjustment [33]. This is because irrationality wraps itself around a relevant or intense desire/motivation that, if thwarted, makes activating events unacceptable and limits the repertoire of possible functional responses [22]. Thus, the constant thought and

worry about the extreme rigorous demands upon the self could impede individuals from experiencing positive emotions and satisfaction in relation to their life [17]. Indeed, evidence found that they commonly lead to poorer well-being [34,35] and to individual strains as they have been associated with health problems (e.g., higher systolic blood pressure) [36] and psychological distress indicators (e.g., anxiety and depression) [37–40]. However, the consequences of irrational beliefs have been mainly addressed in clinical or subclinical samples and student populations [12], while research in performance-driven contexts such as the working one is more recent [13]. Indeed, within organizational settings, only a few studies reported that employees with higher irrational beliefs are more likely to experience burnout [41], psychological distress [14], and compulsive work behaviors [15,16].

Moreover, although demandingness is crucial in understanding the degree of irrationality underlying all secondary beliefs and their similar fallouts, each belief takes on specific properties and, thus, may impact well-being with different intensity or in unique ways [42]. In other words, all secondary irrational beliefs imply a common absolutistic and inflexible interpretation of reality (i.e., how individuals perceive that they or others should be/behave or how their existence should unfold) that makes one's interaction with the environment more demanding and stressful and, thus, undermines individual well-being. In addition, each secondary irrational belief may eventually have a different weight and influence on employees' well-being. Indeed, individuals manifest their dogmatic "oughts" in distinct yet dysfunctional ways such as inferring their absolute unworthiness from a single misstep, letting themselves being overwhelmed by frustration, and over-inflating the consequences of certain courses of action [8]. For instance, the recent meta-analysis by Vîslă et al. [12] found that low frustration tolerance alone contributed significantly more to individual distress (i.e., general distress, depression, anxiety, anger, and guilt) than the other types of secondary irrational beliefs. Instead, other studies underlined the prominent role of awfulizing and self-depreciation in explaining a broad range of internalizing and externalizing problems as well as emotional disturbances [43]. To our current knowledge, the existing studies examining the distinct effects of irrational beliefs within the workplace context have consistently produced analogous results. While findings can be argued in terms of the strength of the relationship between each irrational belief and diverse outcomes, they fall short of identifying specific patterns in these associations. For instance, Turner et al. [14] identified significant negative correlations between self-depreciation, well-being, and life satisfaction, as well as between the other irrational beliefs and depression, anxiety, and anger. However, these relationships were not specifically explored within the confines of their study. Furthermore, Turner et al. [13,14] and Popov et al. [15] have employed measures of trait depression and anxiety for the posited outcomes variables of their studies, which are not explicitly tailored to the working context. Despite their findings, these studies do not account for the shared substrate of demandingness within irrational beliefs, resulting in reported similarities in effects among irrational beliefs and various outcomes. Moreover, even though they have been conducted within organizational contexts, they do not specifically investigate work-related well-being.

Below, this potential common and distinctive paths of secondary irrational beliefs towards well-being are specifically discussed in the working context, positing the fulfillment of performance expectations as a crucial explaining mechanism.

1.2. The Fulfillment of Performance Expectations: A Missing Link between Secondary Irrational Beliefs and Well-Being at Work?

Irrational beliefs are generally a source of unrealistic or unattainable expectations upon one's performance [13], proving detrimental for individuals' objective results in the sports context and academic achievement [27,44,45]. Indeed, empirical evidence has shown that irrationality underpins a constellation of psychological processes that can lead to lower performance, such as procrastination [46] and increased anxiety under pressure [47]. Regardless of the quantifiable value of performance, we argue that secondary irrational beliefs may bias the perception that individuals have of their own efforts and achievements

as they are dependent on personal evaluative standards and criteria. For instance, a large body of evidence linked irrational beliefs with perfectionism [16,48,49], which involves striving for extremely high standards of performance and being critical in evaluating one's own actions [50]. In the organizational context, Van Wijhe et al. [15] found that employees who hold onto such cognitions are more prone to workaholism, pushing themselves to work excessively hard in the lingering feeling of not having done enough. As such, employees who generally indulge in irrationality may perceive more negatively or ruminate on the occurrence of events (e.g., errors, failures, setbacks, negative feedback) that do not match with their strict performance expectations and, thus, down-scale the degree to which they perceive to have met them. Furthermore, such perceptions may be further hindered by how they specifically conceive and react to performance-related working events. For example, employees prone to self-depreciation in response to failure may project generalized feelings of personal unworthiness from the single negative event onto their entire performance. Also, those with low frustration tolerance may end up wallowing in the negative reactions felt in the face of a critical feedback, losing sight of what has already been accomplished and the learnings that can be derived from the situation. Finally, employees with a higher tendency to awfulize undesired events may over-exaggerate the consequences of personal errors and setbacks on their performance. Thus, we formulated the following hypothesis:

H1: Secondary irrational beliefs (i.e., considered simultaneously as general irrationality factor and the three specific beliefs of self-depreciation, low frustration tolerance, and awfulizing) will be negatively associated with the degree of performance expectations' fulfillment.

The literature has long established the positive relationship between performance and well-being in the organizational context, demonstrating that successfully reaching one's goals or managing one's tasks leads to flourishing proxies like higher job satisfaction [51], engagement [52] and positive emotions [53].

According to Judge et al. [51], the reason why there is a positive association between performance and satisfaction may be because an employee's job performance influences their sense of self-worth according to the degree of which their performance is considered good or not. Indeed, task completion satisfaction, perceived performance, and objective performance all predict positive emotional states like engagement [53–55] and reduce negative emotions states like exhaustion [52].

It is therefore reasonable to assume that one's perception of having fulfilled their performance expectations could be linked to the underlying mechanisms of needs and motivation satisfaction (e.g., need for achievement) and their self-worth, consequently contributing to the enhancement of their well-being within the workplace.

Hence, we formulated our second hypothesis as follows:

H2: The degree of performance expectations' fulfillment will be positively related to employees' well-being at work.

Employees can derive their sense of self-esteem and self-realization from their performance [56], such that it enables them to cultivate a greater state of well-being within the working context [5]. However, individuals characterized by irrational beliefs oblige themselves to unrealistic and rigid requirements and, based on these, engage in maladaptive actions to respond to contextual demands, driving lower performance and higher psychological distress [13]. For this reason, as the intensity of irrationality increases, employees may be more likely to have a distorted and lower perception of their own performance, as this may easily fall short of the rigid evaluative criteria they have set for themselves. Furthermore, it is plausible that, if matching performance expectations requires an increase in one's effort and investment in work [5], secondary irrational beliefs may increase the stressful and hindering nature of this experience rather than the sense of an intrinsically motivating challenge [4]. In turn, this perception may deprive employees of a central source of well-being as well as involve psychological costs, making them more likely to

feel less satisfied, realized, and experience more negative than positive arousal at work. As such, we expected that higher levels of work-related secondary irrational beliefs may result in deteriorated well-being within the workplace as a function of the degree to which individuals perceive that they have fulfilled their performance expectations. Thus, our third hypothesis posits that:

H3: The degree of performance expectations' fulfillment will mediate the relationships between secondary irrational beliefs (i.e., as a general irrationality factor and the three specific beliefs of self-depreciation, low frustration tolerance, and awfulizing) and employees' well-being at work.

2. Materials and Methods

The study was conducted via an online self-report questionnaire in four large Italian companies operating in the administrative and business services and industry sectors. All companies are active throughout Italy and are large in size. Questionnaire administration was not simultaneous in the four companies but nevertheless close, covering a time period between February and November 2022. Participation in the study was voluntary, and the research team guaranteed anonymity to all respondents. The final sample comprised 3576 employees, of which 55.01% were men and 44.99% were women. Regarding age, 31.05% were 40–49 years old, 28.38% were 50–59 years old, 22.08% were 30–39 years old, 10.22% were older than 60 years, and 9.59% were younger than 30 years.

2.1. Measures

2.1.1. Irrational Beliefs at Work

The secondary irrational beliefs of self-depreciation, low frustration tolerance, and awfulizing were assessed by using 9 items adapted from the irrational performance beliefs inventory (iPBI) [13]. Self-depreciation (3 items) measured the individual tendency to draw global self-downing evaluations from the occurrence of negative events at work such as setbacks and failures. Sample items are: *"If I face setbacks in my job, it shows how worthless I am"* and *"If I am not given opportunities at work, then it shows that I do not deserve them"*. Low frustration tolerance (3 items) measured the individual tendency to infer one's inability to tolerate the negative activation in response to negative events or circumstances at work. Sample items are: "*I can't tolerate it when I fail at something that means a great deal to me*" and "*I can't stand not reaching my goals*". Awfulizing (3 items) measured the individual tendency to catastrophize or exaggerate the potential consequences of one's course of action. Sample items are: "*If I fail to achieve the assigned goals, I may never have the opportunity to make up for it*" and "*If I make a mistake at work, the consequences may be irreparable*". Responses were provided on a six-point scale from 1 (never) to 6 (always).

2.1.2. Performance Expectations Fulfillment

Performance Expectations Fulfillment was assessed with 3 items created ad hoc for this study, measuring the individual perception of having met performance expectations during the past two working weeks. Items were: *"I have fully met the performance expectations of my manager"*, *"I have fully met the performance expectations of my organization"*, *and "I have fully met my own performance expectations"*. Responses were provided on a seven-point scale from 1 (never) to 7 (always).

2.1.3. Well-Being at Work

Well-being at work was assessed with 3 items adapted from Topp et al. [57], measuring subjective experiences of psychological well-being during the past two working weeks. Items were: *"I have felt cheerful and in good spirits at work"*, *"I have felt that my daily work life has been filled with things that makes me happy"*, *and "I have felt satisfied with my work and personal life"*. Responses were provided on a seven-point scale from 1 (never) to 7 (always).

2.2. Strategy of Analysis

Respondents were split into two sub-samples. The subdivision method was based on of companies' characteristics, in terms of industry type. A first sub-sample consisted of just one of the four companies sampled (n = 1706 employees) being the only one that does not focus on consulting administrative and business services. This first sub-sample was employed to verify the psychometric properties of our measures. First, confirmatory factor analyses (CFA) were performed to assess the factorial structure of the secondary irrational beliefs' scales. In line with DiGiuseppe et al. [20,21], we tested whether a bifactor solution—in which the items are loaded both onto a general irrationality factor and onto three orthogonal and specific components (i.e., awfulizing, low frustration tolerance, self-depreciation, or secondary irrational beliefs)—had a better fit to the data when compared to three competitive models [58]:

- One-factor model, in which all 9 items measuring the three specific irrational beliefs are loaded on a general irrationality factor. The test of such a parsimonious model excludes the influences of method bias on observed item covariances [59].
- Three-correlated factors model, in which the items are loaded on the hypothesized three latent dimensions under the assumption that covariances among specific irrational beliefs may exist but are not explained by a common underlying irrationality factor.
- Higher-order model, in which the three irrational beliefs are loaded on a second-order irrationality factor that explains the covariations between the first-order factors.

The appropriateness of model fit was established with (1) values of the Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) higher than 0.90 [60], (2) Root Mean Square Error of Approximation (RMSEA) values of 0.08 or less with associated confidence intervals and (3) Standardized Root Mean Square Residual (SRMR) values lower than 0.08 [61]. The best factorial structure for secondary irrational beliefs was evaluated, in each comparison, through fit indices and differences in chi-square values ($\Delta\chi^2$) [62]. Then, we estimated the proportion of common variance explained by the general and the specific factors (i.e., Explained Common Variance, ECV; and Incremental Explained Common Variance, I-ECV) to assess their relative strength [63]. Generally, ECV or I-ECV values exceeding 0.80 indicate essential unidimensionality (i.e., items' observed scores are mostly explained by the general factor) while lower values support the meaningfulness of the specific factors [63].

Second, we tested the validity and invariance of the measurement model underlying our hypotheses (i.e., including secondary irrational beliefs, performance expectations fulfillment, and well-being at work as correlated latent dimensions). In detail, we tested measurement invariance for sex (men = 1030; women = 654) and age (<40 years old = 718; >40 years old = 988) through multigroup CFA (MGCFA) [62]. The model invariance was tested across groups at the following levels: (1) configural (i.e., no equality constraints are imposed); (2) metric (i.e., factor loading equality constraints are specified); (3) scalar (i.e., equality constraints on intercepts are specified); and (4) strict invariance (i.e., equality constraints on residuals are imposed). During each step, measurement invariance was assessed through model differences in the comparative fit index (ΔCFI) with values lower than 0.01, paired with changes in RMSEA of 0.015 and SRMR of 0.030 (for metric invariance) or 0.015 (for scalar and residual invariance) [64]. Finally, the reliability of the scales was estimated using Cronbach's alpha coefficient (α) and McDonald's omega coefficient (ω). The latter coefficient is strongly preferred over the best-known α in the presence of congeneric items (i.e., items represent to a different degree the dimensions they are intended to measure) [65]. As a rule of thumb, values between 0.60 and 0.70 indicate acceptable reliability and values above 0.70 provide evidence of good reliability [66]. The second sub-sample (n = 1870 employees from the other three organizations) was employed to test our hypotheses within a structural equation modeling framework. Specifically, we tested a full-mediation model in which we estimated the associations between secondary irrational beliefs (i.e., both the general irrationality factor and the three specific factors of awfulizing, low frustration tolerance, and self-depreciation) and performance expectations fulfillment, which, in turn, mediated the relationships between irrational beliefs and well-being at work.

Bifactor models indeed allow us to model separately the general factor and the specific components of a hierarchical or multidimensional construct in predicting the outcomes variables [23]. Gender and age were employed as controls. To corroborate whether the mediation was full or partial for each of the hypothesized predictor, nested models were tested and differences in chi-square values were assessed ($\Delta\chi^2$) [64]. The significance of the indirect effects was investigated by estimating their standardized estimates and associated bootstrapped 95% confidence intervals [67]. All the analyses were performed with Jamovi 2.3.28 and Mplus 8.1, using the maximum likelihood estimator [68].

3. Results

3.1. Validity and Reliability

3.1.1. The Factorial Structure of Irrational Beliefs

In regards of the irrational beliefs' factorial structure, the bifactor solution fitted the data better than the alternative models tested (see Table 1), outperforming them in terms of fit indices.

Table 1. Results of confirmatory factor analyses in the test of irrational beliefs' factorial structure.

Models	χ^2	df	CFI	TLI	RMSEA [CI 95%]	SRMR	$\Delta\chi^2$
1-factor model one factor for all items.	1348.93 *	27	0.66	0.54	0.17 [0.16, 0.18]	0.10	1212.48 * (*df* = 9)
3-factors model three factors representing awfulizing, low frustration tolerance and self-depreciation.	168.48 *	24	0.96	0.94	0.06 [0.05, 0.07]	0.04	32.03 * (*df* = 6)
Higher-order model the three factors loaded on a second-order irrationality factor.	204.22 *	25	0.95	0.93	0.07 [0.06, 0.07]	0.05	67.77 * (*df* = 7)
Bifactor model the three orthogonal factors and all items loaded on a general irrationality factor.	136.45 *	18	0.97	0.94	0.06 [0.05, 0.07]	0.03	-

Notes. * $p < 0.001$. Analyses were performed on a sample of 1706 employees. All model comparisons are relative to the bifactor model. χ^2 = chi-square statistic; df = degrees of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean-Square Error of Approximation; SRMR = Standardized Root Mean Square Residual. $\Delta\chi^2$ = difference in chi-square statistic.

All items loaded adequately on the general factor (ranging from 0.30 to 0.67). The low frustration tolerance factor was well-delineated and with strong factor loadings (ranging from 0.63 to 0.70). Two factor loadings out of three for the awfulizing and self-depreciation factors presented nonnegligible values, and all factor loadings were statistically significant for $p < 0.001$ (ranging, respectively, between 0.21 and 0.46 and between 0.27 and 0.38). In this regard, the scale-level ECV index (=0.52) indicated that 52% of the items' common variance was explained by the general factor and 48% by the three specific factors. Consistently, all items had I-ECV values lower than 0.80: awfulizing items ranged between 0.53 (item 7) and 0.67 (item 9), self-depreciation items ranged between 0.54 (item 2) and 0.74 (item 1), low frustration tolerance ranged between 0.31 (item 4) and 0.39 (item 6). Thus, all items contributed significantly to the measurement of both the general factor and the three specific factors. However, while the low frustration tolerance items contributed more to the measurement of the specific factor rather than the general factor, both the awfulizing and self-depreciation items tended to contribute more to the general factor than their respective specific factors. Overall, results are in line with previous validation studies on irrational beliefs [20–22] and suggest that the items are reasonable markers of both the general and specific factors [63], supporting the empirical meaningfulness of investigating irrational beliefs as hierarchical or multidimensional construct [23].

3.1.2. Validity and Invariance of the Measurement Model

In regards to the measurement model (in which we added the latent dimensions of performance expectations' fulfillment and well-being at work, along with the secondary irrational beliefs measurement), the CFA results showed a good fit to the data (χ^2 (71) = 400.45, $p < 0.001$; CFI = 0.97; TLI = 0.95; RMSEA [95% CI] = 0.05 [0.05, 0.06]; SRMR = 0.04), supporting the distinctiveness of the dimensions. Furthermore, the factor loadings confirmed the appropriateness of the items measuring performance expectations fulfillment and well-being at work since they ranged between 0.77 and 0.85. In addition, multigroup analyses supported measurement invariance up to the residual level (i.e., factor loadings, intercepts, and residuals equality held across groups) for both sex (see Table 2) and age (see Table 3). Indeed, all models fitted the data well and the differences between the models' fit indices matched recommended criterions [64].

Table 2. Results of the MGCFAs for measurement invariance across sex.

Model	χ^2	df	CFI	TLI	RMSEA [90%CI]	SRMR	ΔCFI	ΔRMSEA	ΔSRMR
Configural invariance	480.51 *	142	0.964	0.947	0.052 [0.048 0.058]	0.044	-	-	-
Metric invariance	512.87 *	160	0.962	0.951	0.051 [0.046 0.056]	0.048	0.002	−0.001	0.004
Scalar invariance	576.41 *	175	0.957	0.949	0.052 [0.047 0.057]	0.052	0.005	0.001	0.004
Residual invariance	640.46 *	190	0.952	0.947	0.053 [0.49 0.058]	0.056	0.005	0.002	0.002

Notes. * $p < 0.001$. Analyses were performed on a sample of 1706 employees (men = 1030; women = 654). At each step the prior model served as the baseline against which the subsequent specified model was compared in the sequence of invariance tests, all earlier constraints remained in place. χ^2 = chi-square statistic; df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI RMSEA = 90% confidence interval RMSEA; SRMR = Standardized Root Mean Squared Residual; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ΔCFI = difference in CFI between models; ΔRMSEA = difference in RMSEA; ΔSRMR = difference in SRMR.

Table 3. Results of the MGCFAs for measurement invariance across age.

Model	χ^2	df	CFI	TLI	RMSEA [90%CI]	SRMR	ΔCFI	ΔRMSEA	ΔSRMR
Configural invariance	481.02 *	142	0.964	0.947	0.052 [0.048 0.058]	0.045	-	-	-
Metric invariance	521.36 *	160	0.961	0.949	0.051 [0.047 0.056]	0.050	0.003	−0.002	0.005
Scalar invariance	619.65 *	175	0.953	0.943	0.055 [0.050 0.059]	0.060	0.008	0.005	0.010
Residual invariance	685.08 *	190	0.947	0.942	0.055 [0.051 0.060]	0.070	0.006	0.000	0.010

Notes. * $p < 0.001$. Analyses were performed on a sample of 1706 employees (<40 years old = 718; >40 years old = 988). At each step the prior model served as the baseline against which the subsequent specified model was compared in the sequence of invariance tests, all earlier constraints remained in place. χ^2 = chi-square statistic; df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker–Lewis Index; RMSEA = Root Mean Square Error of Approximation; 90% CI RMSEA = 90% confidence interval RMSEA; SRMR = Standardized Root Mean Squared Residual; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ΔCFI = difference in CFI between models; ΔRMSEA = difference in RMSEA; ΔSRMR = difference in SRMR.

3.1.3. Internal Consistencies

Cronbach's alphas and McDonald's omegas were preliminarily calculated on the sub-sample of 1706 employees and showed acceptable reliability for the general irrationality dimension ($\alpha = 0.77$; $\omega = 0.77$) and the three specific irrational beliefs, that is, self-depreciation ($\alpha = 0.63$; $\omega = 0.65$), low frustration tolerance ($\alpha = 0.80$; $\omega = 0.80$), and

awfulizing (α = 0.63; ω = 0.65). The reliabilities of performance expectations fulfillment (α = 0.85; ω = 0.85) and well-being at work (α = 0.86; ω = 0.86) scales were very satisfactory.

3.2. Hypotheses Testing

3.2.1. Zero-Order Correlations

Secondary irrational beliefs, on average, were found to be a moderate phenomenon among employees as indicated by the general irrationality total score (see Table 4). However, the low frustration tolerance was more frequent among employees than self-depreciation and awfulizing. Instead, employees reported medium-to-high scores in performance expectations fulfillment and well-being at work. In line with the factorial structure of irrational beliefs found, the correlations between the awfulizing and self-depreciation were higher than those that the two dimensions exhibited with low frustration tolerance. Overall, irrational beliefs were negatively correlated with performance expectations fulfillment, which, in turn, was positively associated with well-being. Contrary to our expectations, the low frustration tolerance variable displayed a positive correlation with performance expectations fulfillment. The awfulizing variable was the only irrational belief that negatively correlated with both performance expectations fulfillment and well-being at work.

Table 4. Descriptive statistics and raw correlations between study variables.

		M	*SD*	1	2	3	4	5	6
1.	General Irrationality Factor	3.15	0.75	-					
2.	Self-depreciation	2.85	0.97	0.81 **	-				
3.	Low Frustration Tolerance	4.45	0.97	0.72 **	0.33 **	-			
4.	Awfulizing	2.34	0.93	0.77 **	0.53 **	0.26 **	-		
5.	Performance Expectations Fullfilment	5.38	0.97	−0.18 **	−0.20 **	0.10 *	−0.31 **	-	
6.	Well-being at Work	4.74	1.24	−0.06	0.01	0.04	−0.22 **	0.58 **	-

Notes. * $p < 0.05$; ** $p < 0.01$. Analyses were performed on a sample of 1870 employees; M = mean; SD = standard deviation.

3.2.2. Structural Equation Modeling

The full-mediation structural model fit the data adequately ($n = 1870$, χ^2 (101)= 378.32, $p < 0.001$; CFI = 0.97; TLI = 96; RMSEA [95% CI] = 0.04 [0.04, 0.04]; SRMR = 0.05). Results provided partial support to hypothesis 1: the general irrationality factor and awfulizing were, to a similar extent, negatively associated with performance expectations fulfillment (respectively, β = −0.31 and β = −0.37, both at $p < 0.001$). Instead, self-depreciation was unrelated to the degree of fulfillment of performance expectations (β = −0.04, $p = 0.33$). Unexpectedly, low frustration tolerance was positively associated with the latter dimension (β = 0.25, $p < 0.001$). In turn, performance expectations fulfillment was strongly associated with well-being at work (β = 0.45, $p < 0.001$), supporting hypothesis 2. Thus, we estimated indirect effects and tested whether each mediated effect stemming from the secondary irrational beliefs-related factor (i.e., general irrationality factor, self-depreciation, low frustration tolerance, awfulizing) was full or partial. Specifically, we tested four nested models (one for each predictor) in which direct paths on well-being were added to evaluate whether their inclusion significantly improved the model fit. The $\Delta\chi^2$ tests indicated that, while the direct paths from low frustration tolerance ($\Delta\chi^2$ (1) = 2.80, $p = 0.15$) and self-depreciation ($\Delta\chi^2$ (1) = 0.04, $p = 0.85$) to well-being did not improve the model fit, the directs paths from the general irrationality factor ($\Delta\chi^2$ (1) = 11.35, $p < 0.001$) and awfulizing ($\Delta\chi^2$ (1) = 53.11, $p < 0.001$) should be retained. As such, our hypothesis 3 received partial support. On the one hand, the relationships between the general irrationality factor, awfulizing, and well-being were partially mediated by the degree of fulfillment of performance expectations. On the other, the relationship between low frustration tolerance and well-being was fully mediated while no mediation effect was found for self-depreciation. The final model is represented in Figure 2 ($n = 1870$, χ^2 (99) = 319.20, $p < 0.001$; CFI = 0.97; TLI = 96; RMSEA [95% CI] = 0.04 [0.04, 0.04]; SRMR = 0.05).

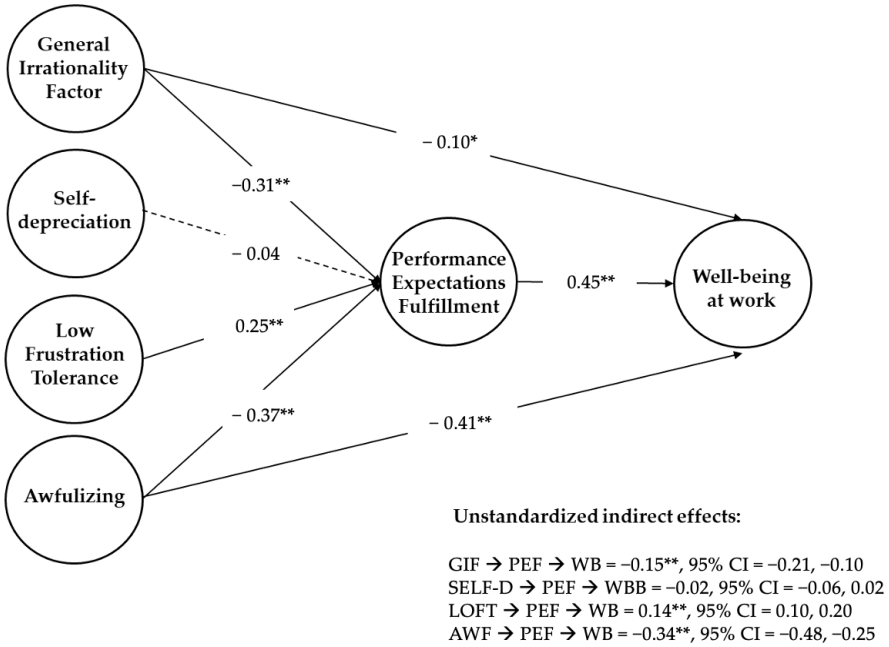

Figure 2. Results from structural equation modeling. Notes. * $p < 0.05$ ** $p < 0.01$. Analyses were performed on a sample of 1870 employees. Control variables (gender and age) for sake of clarity.

In regards to control variables, women reported higher levels of self-depreciation ($\beta = 0.15$, $p < 0.001$) and awfulizing ($\beta = 0.31$, $p < 0.001$), and well-being than men ($\beta = 0.14$, $p < 0.001$). Older employees reported higher levels of awfulizing ($\beta = 0.26$, $p < 0.001$) and performance expectations fulfillment ($\beta = 0.12$, $p < 0.001$). The model explained 28.2% of performance expectations fulfilment and 45.0% of well-being at work.

4. Discussion

The present study aimed to examine the common and unique contributions of secondary irrational beliefs to well-being at work and explore the mediating role of fulfilling performance expectations. Overall, our results supported a negative relationship between irrational beliefs and well-being at work, highlighting the role played by performance expectations in mediating this relationship. Furthermore, we successfully distinguished the unique contributions of each secondary irrational belief. Therefore, this study significantly contributes to irrational beliefs literature in several ways.

Firstly, this study contributes to the literature by employing a bifactor model to disentangle the unique and common effects of irrational beliefs on individual outcomes. In line with Ellis's original conceptualization [9], which recognizes a common irrationality underlying all irrational beliefs, prior validation studies have confirmed that the bifactor model provides the most accurate representation of these constructs [20]. However, such a common irrationality, known as demandingness, has usually been operationalized and assessed using a specific scale and its observed indicators, often resulting in an empirical overlap or lack of discriminant validity between this dimension and other irrational beliefs [21]. Furthermore, when comparing the impacts of irrational beliefs, previous research has generally not modeled their commonalities and specific characteristics [12]. Thus, our approach provided a valuable solution to overcome these measurement issues and to address more rigorously the associations between irrational beliefs and people's well-being.

Our first hypothesis, which suggested a negative association between irrational beliefs and the fulfillment of performance expectations, was generally confirmed. We demonstrated that, when considered as a general factor, secondary irrational beliefs negatively influence individuals' feelings of having met their own and others' performance expectations. In line with existing studies in the literature that have shown how irrational beliefs negatively affect performance [27,35,69,70], our study adds that secondary irrational be-

liefs also negatively impact the extent to which people feel they have met their own and others' expectations regarding their performance. This result extends the literature beyond studies that have demonstrated a positive relationship between irrational beliefs and perfectionism [16] and workaholism [15], advancing that the extremely high and objectively unattainable expectations historically associated with irrational beliefs in the literature indeed lead to dissatisfaction with one's performance expectations.

In regards to the distinctive influence of each secondary belief on the fulfillment of performance expectations, our results firstly highlight a negative and significant relationship between awfulizing and fulfilling performance expectations: as individuals who engage in catastrophic thinking tend to magnify the consequences of obstacles, errors, and negative events [71], they may perceive that the ones they met in the process of reaching their goal will catastrophically impact their performance, determining therefore a lower perception of having met their performance expectations.

Contrary to our expectations, we did not find a significant relationship between self-depreciation and fulfilling performance expectations, which requires further exploration. Although several contributions in literature have highlighted how self-depreciation is associated with worse academic performance [69,70], we take into account that our results showed that a significant portion of the variability in self-depreciation can be attributed to the general irrationality factor. It is possible that in our sample, general irrationality has a more significant impact on fulfilling performance expectations and is, therefore, more detrimental than self-depreciation. Furthermore, an alternative explanation could be that self-depreciation might represent a consequence of fulfilling performance expectations rather than its antecedent. In other words, the extent to which people feel they have met their own and others' performance expectations may subsequently determine the extent to which they devalue themselves.

Our observation of a positive causal relationship between low frustration tolerance and performance expectations fulfillment challenges conventional expectations and invites a deeper exploration. As low frustration tolerance has been linked in the literature to emotional distress [12], one possible explanation for the obtained result could be that the inability to tolerate frustration leads individuals to avoid the emotional distress associated with the possibility of failure, motivating them to work harder to achieve their goals and successfully meet their own and others' performance expectations.

Turning to the link between performance expectations fulfillment and workplace well-being, our results resonate with a substantial body of research on job satisfaction and organizational psychology. High levels of performance satisfaction have consistently been associated with greater workplace well-being [51]. Our study extends this understanding by emphasizing the role of individual perceptions of performance in shaping well-being, suggesting that not only the objective performance but also the subjective fulfillment of expectations plays a pivotal role in employees' overall well-being within the workplace.

Our hypothesis regarding the mediating effect of fulfilling performance expectations in the relationship between secondary irrational beliefs and well-being was partially confirmed. We found that the general factor of irrational beliefs negatively impacts the well-being of workers, both directly and indirectly through fulfilling performance expectations. The direct relationship result aligns with the findings of other authors in the literature who emphasize how having a distorted perception of reality concerning oneself and one's ability to overcome obstacles is detrimental to individuals' well-being [32], while irrational thoughts, by negatively influencing performance expectations, lead to a cascading decrease in the well-being perceived by workers.

Similarly, we also found that awfulizing has a direct and negative relationship with well-being. This result confirms findings from previous studies indicating that this irrational belief can lead to internalizing problems such as fostering stress, anxiety, and depression [43]. In addition, we have demonstrated that the extent to which individuals perceive and believe they have been able to meet their performance expectations translates

individuals' tendency to catastrophize the consequences of negative events into a reduction in their overall feeling of well-being within the workplace.

The most unexpected result arising from our analyses is the complete mediation of the effect of low frustration tolerance on well-being through fulfilling performance expectations. What is particularly surprising is the absence of a direct effect from low frustration tolerance on well-being. In fact, Vîslă et al. [12] have emphasized that the individual tendency to be intolerant of frustration is considered to have the most negative effect on psychological health, more so than other irrational beliefs considered individually or in combination. One possible explanation for the results from our analyses could be the unique nature of the sample used, which, unlike the meta-analysis by Vîslă et al. [12], focuses on a working population. It is possible that, compared to the general population, additional variables come into play in the workplace that can explain the lack of a direct relationship between frustration intolerance and well-being, independent of performance expectations satisfaction. One possible explanation, as mentioned earlier, is that the inability to tolerate the frustration associated with the possibility of failure leads to greater commitment to work activities and, therefore, to goal achievement, ultimately improving well-being at work through performance expectations satisfaction.

Overall, these results shed light on the importance of taking into consideration the aspects of vulnerability that characterize humans' functioning: understanding and addressing the impact of irrational beliefs on well-being becomes crucial for the well-being of human capital and its sustainability within the workplace.

Finally, our results revealed different associations between gender, age, and the variables in the present study. Specifically, we found that women reported higher levels of self-depreciation, awfulizing, and well-being compared to men, and employees over the age of 40 reported higher levels of awfulizing and fulfilling performance expectations. These particular results require further investigation, as previous studies have already highlighted that women report higher levels of secondary irrational beliefs than men, [13,72,73], while others have obtained opposite results [38]. Furthermore, the finding that irrational beliefs tend to be more prevalent among a younger population is also in line with previous research [13,73], but further research should be addressed to investigate this specific differences.

4.1. Limitations and Future Studies

There are some limitations of the present study that should be acknowledged. First, the data collected are cross-sectional and self-reported. To address this limitation, a future longitudinal study is needed to properly verify causal relationships between the variables. Furthermore, the measures we utilized are essentially subjective: future studies could address this limitation by integrating other-reported measures, for instance provided by co-workers and/or a supervisor, as well as more objective typologies of information, such as performance evaluation reports. Moreover, our study design analyzed secondary irrational beliefs as trait-like dimensions and, therefore, assumed they are relatively stable. Future studies could benefit from using intensive longitudinal designs such ecological momentary assessment in order to observe the day-to-day fluctuations in the activation of irrational beliefs in response to environmental circumstances and their consequences on behaviors. In this context, research should investigate the contextual factors within the workplace environment that can either heighten or diminish the probability of irrational beliefs taking shape and manifest. These factors may include the managerial leadership style, the organizational climate, and the specific demands associated with tasks and interpersonal relationships. Additionally, since female and older workers displayed higher levels of irrational beliefs, future research could also explore whether gender and generational differences (or the socio-cultural norms and expectations attached to them) shape differential outcomes. In regard to the generalizability of our results, further research on diverse organizational samples is necessary, particularly to comprehend whether irrational beliefs may vary depending on the type of organizational context or the professional background

of the worker. Finally, as we have considered psychological well-being exclusively from a positive perspective [19], future studies should aim to provide a more comprehensive understanding of how irrationality can impact distress in the workplace.

4.2. Practical Implications

The findings of the present contribution drive significant implications for practice. Organizations could use these findings to create interventions that help employees in managing irrational beliefs and their negative effects on well-being, with the ultimate goal of promoting and fostering human sustainability within the workplace.

According to REBT theory it is possible to dispute (D) irrational beliefs and promote more adaptive responses to adversities by assimilating more efficient (E) rational beliefs. The effectiveness of Rational Emotive Behavioral Therapy is in fact well supported across performance settings [74,75]. Additionally, David and Szamoskozi [76] explored the effects of Rational Emotive Behavior Coaching (REBC) on employees' emotions, irrational and rational beliefs, and inferential cognitions and behaviors, with results showing reductions in irrationality and an increase in the quality of life of the employees.

On the basis of these results, organizations could develop training programs to help employees recognize and manage their irrational beliefs, focusing on cognitive restructuring techniques by providing access to mentors or coaches who are trained in cognitive-behavioral techniques or by providing access to mental health support services such as certified counselors and psychologists that can help employees develop healthier beliefs and responses to challenging situations and empower individuals to address their irrational beliefs and the emotions they are associated with more effectively.

5. Conclusions

In conclusion, our study unveiled the unique contributions of secondary irrational beliefs on well-being at work, highlighting the mediating role of individuals' perceptions of meeting performance expectations.

The present study not only advances irrational beliefs literature but also holds practical implications for organizations. By recognizing the potent impact on well-being, organizations can develop interventions grounded in Rational Emotive Behavioral Therapy (REBT) that can contribute to the development of a positive organizational culture, in which well-being and therefore human sustainability within the workplace is prioritized.

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