Meaning of Work and Post-Retirement Employment Survival: Evidence From a Time-to-Event Analysis in Java, Indonesia

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Abstract

Amid rising labor force participation among older adults, understanding retirees' motivations to continue working is increasingly crucial. This study investigates how the meaning of work relates to post-retirement employment survival among older adults. We conducted structured interviews with 230 retirees aged 53 and older in Yogyakarta, Indonesia. Through these interviews, we evaluated five dimensions of work meaning: financial, personal, social, generativity, and spiritual. Respondents included former employees from government, military, health, education, state-owned, and private institutions. We employed Gompertz survival analysis with robustness checks via Cox regression and inverse probability weighting. The result revealed that by the seventh year of retirement, the probability of remaining employed reached 0.75. A strong social meaning of work was associated with prolonged employment, whereas a strong spiritual meaning was associated with earlier labor-market exit. These findings suggest the need for flexible retirement age policies and support for community-based spiritual engagement to accommodate diverse retirement trajectories.

Keywords

Meaning of work; pension; post-retirement work; spiritual meaning; survival analysis

Introduction

Population aging reshapes labor market dynamics worldwide (Liu & Zhao, 2024; Maciulyte-Sniukiene et al., 2019). The Organisation for Economic Co-operation and Development (OECD) countries have responded by investing in human capital, reforming pension and employment policies (Papapetrou & Tsalaporta, 2020). The increase in retirement age reflects an aging labor force and a rising pension burden (Ananta, Arifin, et al., 2021; Carta & De Philippis, 2023). In contrast, Indonesia has one of the lowest retirement ages in Southeast Asia, even though many older adults remain physically fit after retirement. A comparative overview shows that the mandatory retirement age ranges from 60 to 65 in most ASEAN countries, and from 60 to 67 in the OECD nations (Ministry of National Development Planning Indonesia et al., 2024; OECD, 2023).

According to the 2024 Indonesia Longitudinal Aging Survey, 84.8% of older workers still wish to stay employed for at least three more years, and 35.7% intend to work until their health declines (Ministry of National Development Planning Indonesia et al., 2024). Post-retirement employment is common and often persists beyond economic security, with many retirees staying active for nonfinancial reasons. Empirical studies consistently reveal a similar pattern: motives extend beyond financial aspects to include social, psychological, and spiritual fulfillment (Feng et al., 2024; Friedman & Havighurst, 1954; Froidevaux, 2024; Hess et al., 2021; Mor-Barak, 1995; Templer et al., 2010; Wiktorowicz et al., 2022). These non-financial motives reflect the broader meaning of work—how individuals perceive work as a source of identity, social connection, and fulfillment beyond income.

Indonesia's statutory retirement age varies. For formal private-sector workers, as stated in Government Regulation No. 45 of 2015 (Government of the Republic of Indonesia, 2015), the retirement age began at 57 in 2019 and will gradually rise to 65; the current retirement age is 59. For civil servants, as shown in Law No. 20 of 2023 (Government of the Republic of Indonesia, 2023), the retirement age ranges from 58 to 70 years, with the highest limits in education (60–70 for teachers/professors) and 58 for administrative staff. In the military, as shown in Law No. 34 of 2004 (Government of the Republic of Indonesia, 2004), the statutory retirement age ranges from 53 to 58 years.

Indonesia's pay-as-you-go pension system provides limited financial coverage, leaving many retirees with inadequate income security (Ananta, Moeis, et al., 2021). Due to modest pension benefits and low household savings, a considerable proportion of retirees continue working, either in formal or informal settings, to sustain their livelihoods (Ananta, Arifin, et al., 2021). For many older adults, continuing to work also serves to maintain health, social interaction, and self-esteem while avoiding the perception of being a burden to their families (Subanti et al., 2021).

Individual choices, experiences, and social or institutional contexts shape the meaning of work (Harpaz, 1990). It encapsulates individuals' interpretations of work's purpose, role, and impact on their lives (Fasbender et al., 2016; Pignault & Houssemand, 2021). Since the 1950s, studies have emphasized that work provides structure, identity, social contact, and personal fulfillment (Friedman & Havighurst, 1954). Mor-Barak (1995) expanded this concept using Alderfer's and Erikson's theories of human development. Alderfer (1969) identified three fundamental human needs: existence, relatedness, and growth. Mor-Barak associated these needs with the financial, social, and personal meanings of work. She also included Erikson's

idea of generativity—contributing to others and leaving a legacy—as a fourth dimension. This study introduced the fifth dimension of spiritual meaning. Erikson's final developmental stage, integrity versus despair, involves reflecting on life with spiritual insight (Erikson & Erikson, 1998; Maree, 2021). In Western and Protestant traditions, work is often considered a moral calling. However, modern capitalism tends to obscure this spiritual aspect (Fletcher, 2017; Weiss et al., 2003; Wolfe, 1997). In Islamic teachings, work is considered an act of worship and the expression of gratitude (Tasmara, 2002). Many workers assign spiritual value to their jobs and try to align their work with their religious beliefs (Neubert & Dougherty, 2015; Rosso et al., 2010; Sullivan, 2006).

Spiritual meaning is relevant to older Javanese adults from diverse religious backgrounds, including Islam, Christianity, Catholicism, Buddhism, and local belief systems. Javanese cultural stages, such as *pangkur*, reflect a shift away from materialism toward spiritual devotion (Raj & Prihartanti, 2022). At this stage, older adults reduce their worldly attachment and focus on self-purification. For some older Javanese adults, work serves as a means of expressing religious values and of serving others (Daryono & Alba, 2007). Spirituality is a central theme in narratives of successful and well-aging among Javanese older adults (Soetjiningsih et al., 2019; Sulandari et al., 2024). It reflects a moral heritage and family tradition that values patience, surrender, and religious practices as sources of strength in later life (Mustolehudin et al., 2022; Santoso, 2013; Setiadi & Hidayah, 2021). While spirituality in Javanese philosophy is broadly understood as an inner pursuit of harmony and moral balance rather than adherence to specific doctrines (Geertz, 1976), in everyday life, this spiritual orientation often intertwines with personal religiosity.

This study adopts three theoretical frameworks of gerontology: disengagement theory, selectivity-optimization-compensation (SOC) theory, and gerotranscendence theory. The disengagement theory suggests that older adults withdraw from social activities as preparation for life's end (Bengtson, 2016). This study employs the disengagement theory to explain subgroups of retirees who voluntarily reduce their economic participation as part of the dignified aging process. However, critics argue that it does not explain why some older adults continue to engage in productive and social activities. Gerotranscendence theory complements this by highlighting a shift in orientation from material concerns to transcendental dimensions (Tornstam, 2011).

Older adults may require more time for reflection and solitude to attain inner peace and life satisfaction. The SOC theory represents an active aging paradigm. It describes older adults as adaptive agents who actively select the most meaningful activities or resources, optimize their remaining potential, and compensate for the limitations of new strategies (Baltes & Rudolph, 2013; Bengtson, 2016). Through these three theories, which represent contrasting paradigms of aging -active versus disengaged- the interpretation of post-retirement employment survival becomes more meaningful. A lower survival rate reflects the disengagement process, while a higher survival rate supports theories rooted in the active aging paradigm.

Previous studies have examined the meaning of work, retirement intention, and post-retirement employment from various perspectives. Mor-Barak (1995) introduced generativity as one of the key dimensions of work meaning, reflecting the desire to contribute to others and leave a legacy beyond economic gain. Empirical evidence has shown that different dimensions of work meaning may influence retirement behavior in distinct ways. Fasbender et al. (2016) showed that personal and social meanings of work were positively associated with decisions to continue working post-retirement, while generativity was more likely to lead to engagement in unpaid social activities. Similar findings were reported by Micheel

(2021), although other studies revealed that generative motives also encourage retirees to re-engage in paid employment (Hess et al., 2021; Wiktorowicz et al., 2022).

Previous studies have also examined spirituality separately from other dimensions of work meaning, showing that it is positively associated with continued employment among older adults (Bratun et al., 2024; Froidevaux, 2024). However, in the Indonesian context, particularly within Javanese culture, spiritual meaning may operate differently. The Javanese view later life as the *pangkur* stage—a transition away from material pursuits toward spiritual devotion (Raj & Prihartanti, 2022). In addition to work meaning, sociodemographic factors, such as education, residence, gender, income, and job characteristics, influence retirement-age intentions (Grzenda, 2023; Tangtipongkul & Srisuchart, 2018).

In Indonesia, studies of older adults' work meaning and post-retirement employment decisions remain limited. Mumpuni (2015) found that older workers view work as a way to stay financially independent and avoid burdening their families. Jamalludin (2021), using IFLS 2007 and 2014 data, found that pension insurance and jobs requiring high concentration negatively affected the decision to work after retirement. While these studies highlight the economic motivations behind continued employment, they do not address the broader non-economic meanings of work, such as social, generative, or spiritual, that may also sustain older adults' engagement in the labor force.

This gap raises a critical question: To what extent is the likelihood of post-retirement employment among older adults predicted by their perceived meaning of work?. Building on these insights, we hypothesize that the social and personal meaning of work are associated with longer work survival. In contrast, generativity and spiritual meanings may encourage earlier labor market exit. Financial meaning, in turn, is expected to vary across income groups depending on levels of economic sufficiency.

This study examines the survival probability of post-retirement employment among older adults in Indonesia using a Gompertz model and cross-sectional primary data. This study theoretically extends the concept of work meaning by incorporating a spiritual dimension and integrating gerotranscendence and SOC theories through the lens of Javanese spirituality. It adopts an intercultural and contextual approach that is rarely explored in the existing literature. In practice, these findings offer policymakers insights into the non-economic motivations for older adults' continued employment, aiding the development of adaptive, culturally relevant retirement policies.

Methods

Data overview

We selected Sleman Regency, Yogyakarta, Indonesia, as the study site. Yogyakarta province has the highest proportion of older adults in Indonesia, with roughly 16% of its population aged 60 and above (BPS-Statistics Indonesia, 2024). In Yogyakarta, just over 10% of older adults rely on pension funds for their livelihood (Krisna et al., 2024). Population projections show that Sleman Regency has the province's highest population aged 50 and above, totaling 331,620 (BPS-Statistics Indonesia of Yogyakarta Province, 2023).

Sleman Regency includes urban, rural, and suburban areas. This diversity supports numerous economic activities among older adults in both the formal and informal sectors. In 2021, 11.35% of the population aged 60 and above in Sleman remained employed (BPS-Statistics Indonesia Sleman Regency, 2022). The local government has prioritized the empowerment of older adults, establishing six senior schools and supporting community-based elder care (Sukamdi et al., 2025). The combination of a large older population, supportive sociocultural characteristics, and local policy initiatives makes Sleman a relevant locus for examining the meaning of work and the survival rate of post-retirement employment among older adults.

This study analyzed retired individuals aged 53 and above. This lower-bound age reflects the earliest national mandatory retirement benchmark: the retirement age for non-commissioned officers (*bintara*) in the Indonesian National Armed Forces. All participants were fully retired from their primary occupation at the time of the survey, although some had re-entered the labor market. The research subjects included retirees from the government, military, state-owned enterprises, and private companies.

The study population comprised all retirees residing in Sleman Regency in 2024, totaling 28,970 individuals (BPS-Statistics Indonesia Sleman Regency, 2024). We calculated the sample size using Cochran's formula, which is suitable for large populations (Cochran, 1977). Confidence level, margin of error, and population proportion guided the minimum sample size calculation. We set the confidence level to 95% ($Z = 1.96$), the margin of error to 7% ($e = 0.07$), and the population proportion to 0.5. We selected a 7 % margin of error because this is an established precision level (e.g., Israel, 1992) deemed an acceptable trade-off between precision and the operational constraints (e.g., time, budget, logistics) of our face-to-face survey with a hard-to-reach population.

The minimum sample size was 196 respondents, but we used 200 for field efficiency. We also included 30 observations from a pilot survey. As this pilot confirmed the instrument's clarity and yielded no modifications, the data were homogeneous and validly pooled, yielding a total of 230 observations for analysis.

The initial sampling stage involved listing. We conducted listings in six selected hamlets, representing urban, suburban, and rural characteristics. We interviewed local heads and cross-checked the data with community health workers. We sorted the retirees by their highest level of education. We drew the sample using systematic random sampling, ensuring variation in geographic area and educational background.

This study received ethical approval (KE/UGM/007/EC/2025) from the Universitas Gadjah Mada (UGM) Research Ethics Committee. Data collection was conducted through face-to-face interviews, in accordance with research ethics. We employed semi-structured face-to-face interviews, combining mostly closed-ended questions- many of which used a five-point Likert scale- with several open-ended questions that allowed respondents to elaborate on their experiences and views. Before the interviews, we obtained written informed consent from all respondents. We employed an empathetic approach, refraining from coercing or leading responses. Respondents had the right to decline to answer sensitive questions.

Statistical analysis

We applied survival analysis to model the study's key outcome, 'Post-Retirement Employment Survival'. This term is operationally defined as the period during which an

individual remains economically active after their formal retirement date. This required two variables: 'time' (years since retirement (the survival duration), calculated by subtracting the retirement age from the respondent's current age) and 'event'. The 'event' variable was coded 1 if the respondent was no longer working (the 'event' of full retirement occurred) and 0 if still working (censored case, 'survival' continues). Survival analysis reveals the chances of older adults remaining in the workforce year by year after retirement.

The key independent variables were the financial, personal, social, generativity, and spiritual meanings of work. These five dimensions were measured using a 30-item scale, with all items rated on a 5-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree). To illustrate, respondents were asked to rate their agreement with statements such as:

- *Financial*: "My former job was the primary means of meeting my and my family's living needs."
- *Personal*: "My previous work experience offered opportunities for self-development."
- *Social*: "My former job provided opportunities to interact with a wide variety of people."
- *Generativity*: "My previous work allowed me to guide younger employees by sharing my experience."
- *Spiritual*: "My work experience was an expression of cultural and spiritual values, such as *gotong royong* (cooperation) and *musyawarah* (deliberation)."

Indicators for the four dimensions, excluding the spiritual dimension, were adapted from Mor-Barak's (1995) scale to suit the local sociocultural context. We constructed indicators of spiritual meaning by synthesizing value elements from Weber's Protestant Ethic (Giddens, 1993), the Islamic work ethic (Aflah et al., 2021; Tasmara, 2002), and the Javanese trading ethos of King Mangkunegara IV (Daryono & Alba, 2007). Three experts—two population researchers and one geriatric health practitioner—evaluated the questionnaire's content validity. They assessed the relevance of each item to the respective construct and the clarity of language, including grammar and diction. The indicators yielded a content validity index (CVI) of 0.9, demonstrating strong content representation (Vrbnjak et al., 2017).

We used confirmatory factor analysis to evaluate construct validity and reliability, and calculated composite scores for each dimension from the factor loadings. Table 1 presents the indicators and validation outcomes. In the subsequent survival analysis model, these five composite scores were entered as continuous variables. Therefore, the resulting Hazard Ratio (HR) for each dimension represents the change in the hazard of retirement associated with a one-unit increase in the respective index score.

Socioeconomic and pre-retirement job characteristics were controlled for in the key independent variables. Socioeconomic variables included education level, health status, housing status, marital status, retirement age, job tenure, residential area, gender, and household size. Pre-retirement job characteristics included employment sector and job status. Table 2 provides descriptive statistics for all variables.

Survival analysis employed the Gompertz distribution, commonly used for modeling adult mortality and aging processes (Missov & Lenart, 2013). The hazard function in this study reflects an increasing hazard over time. As the years since retirement increase, so does the likelihood that older adults will leave the workforce. The mathematical formulation of the Gompertz model is as follows:

$$h(t|X) = \lambda e^{\gamma t} . e^{X\beta}$$

Where h(t|X) is the hazard rate at time t, λ and γ are baseline hazard parameters, and $X\beta$ is a linear combination of covariates, including the five work meaning indices and control variables. The model produces hazard ratios (HR), with HR < 1 indicating a greater chance of remaining in the workforce and HR > 1 signaling a higher likelihood of leaving. We analyzed how hazard ratios for work-meaning indices vary across income groups using split-sample analysis.

We conducted robustness checks using two approaches. First, we analyzed survival data using the Cox proportional hazards model. Second, we applied inverse probability weighting (IPW) to minimize selection bias in survival analysis (Syriopoulou et al., 2021). The initial step in IPW involved estimating the probability of experiencing the event (leaving the workforce after retirement) using a probit model. We used the probability score (pscore) to calculate IPW as follows:

$$IPW = \frac{1}{pscore} \text{ ; if event} = 1 \text{ (fully retired)}$$
$$IPW = \frac{1}{1 - pscore} \text{ ; if event} = 0 \text{ (still work)}$$

We included the IPW as the weight in the survival analysis models.

All data were processed using Stata 17 and R. We disclose the use of generative AI (ChatGPT, OpenAI) in a strictly assistive role. AI helped generate syntax for supplementary analyses (e.g., robustness checks such as Inverse Probability Weighting) and aided language refinement and translation. We independently designed and verified all analytical decisions, model specifications, and interpretations, with reputable references to ensure analytical rigor and integrity.

Table 1: Measurement Model Result for the Meaning of Work Indicator

Construct	Indicator	Loading factor	Alpha Ordinal	Composite reliability
Financial meaning of work	Work is means to meet needs	0.651	0.798	0.806
	Work provide access to adequate healthcare	0.719		
	Work creates financial stability	0.591		
	Work enable financial independence	0.748		
	Work provides a sufficient wage to enjoy leisure	0.653		
Personal meaning of work	Work provides great personal satisfaction	0.613	0.795	0.805
	Work gives a sense of pride	0.689		
	Work offers opportunities to develop potential	0.693		
	Work provides opportunities to learn new things	0.523		
	Work fills time with meaningful activities	0.828		
Social meaning of work	Work earns me respect from relatives	0.576	0.788	0.794
	Work frees me from feelings of loneliness and isolation	0.547		
	Work gains appreciation from others	0.574		
	Work connects me with other people	0.745		
	Work provides opportunities to interact with others	0.834		

Construct	Indicator	Loading factor	Alpha Ordinal	Composite reliability
Generativity - meaning of work	Work is a means to share expertise	0.887	0.924	0.930
	Work is a means to teach and train others	0.794		
	Work is a means to transfer experience	0.922		
	Work is a means to transfer knowledge	0.909		
	Work is a means to contribute to the organization	0.809		
	Work is a means to set an example for younger workers	0.887		
Spiritual meaning of work	Work is a means to accumulate good deeds	0.822	0.916	0.920
	Work experience is a form of devotion	0.831		
	Work does not keep me so busy that I forget to worship	0.723		
	Work is a form of gratitude to God	0.774		
	Work is part of a life calling	0.840		
	Work is an expression of cultural and spiritual values	0.871		

Table 2: Descriptive Statistics

Variable	Description	Mean (Standard Deviation)	
	Sample Size (n)	**230**	
Dependent variable			
Time	Number of years since retirement until the time of survey	9.974	(6.979)
Event	Post-retirement employment status (Not working/fully retired = 1, Still working = 0)	0.452	(0.499)
Main independent variable			
Financial meaning of work index	Composite index derived from the financial meaning of work indicators	13.320	(1.343)
Personal meaning of work index	Composite index derived from the personal meaning of work indicators	13.225	(1.292)
Social meaning of work index	Composite index derived from the social meaning of work indicators	13.162	(0.988)
Generativity meaning of work index	Composite index derived from the generativity meaning of work indicators	19.696	(2.508)
Spiritual meaning of work index	Composite index derived from the spiritual meaning of work indicators	20.387	(1.821)
Control variable			
Gender	Female (1), Male (0)	1.257	(0.438)

Variable	Description	Mean (Standard Deviation)	
Education	Highest completed educational level (College = 1, Senior High School = 2, otherwise = 0)	1.252	(0.618)
Married	Marital status (Married = 1, otherwise = 0)	0.809	(0.394)
Health	Experiencing health complaints in the past month (Yes = 1, No = 0)	0.500	(0.501)
Pension age	Age at which the respondent retired	57.483	(2.916)
Tenure	tenure from the main job before retirement	32.509	(4.405)
Area	Area of residence (Urban = 1, Suburban = 2, Rural = 0)	0.974	(0.830)
Migrant	Lifetime migrant (Yes = 1, No = 0)	0.530	(0.499)
Living	Living status (with spouse only = 1, three generations = 2, living alone = 3, otherwise = 0)	0.874	(0.938)
Sector	Main occupation before retired (Public administration, defense, compulsory social security = 1, Education, health, social activities = 2, otherwise = 0)	1.235	(0.703)
Position	Job position before retired (Manager or Professional = 1, otherwise = 0)	0.461	(0.499)
Income	the natural logarithm function of household income in the past month	15.663	(0.499)
Family size	Number of family member in the household	3.430	(1.693)

Results and discussion

Differences in survival rates

The employment survival rate is relatively higher for retirees in their initial years after retirement. Up to the seventh year post-retirement, the probability that older adults continue working remains above 0.75. This result indicates that older adults in Java have a strong tendency to stay economically active, which aligns with the findings of Utomo et al. (2019), who reported that older adults in rural Indonesia continue to participate in productive activities, both socially and economically.

There are notable differences in survival rates between men and women, as illustrated in Figure 1. Men remain employed longer than women, with the gap widening after the eighth year of retirement. These findings are consistent with Grzenda (2023) and Tangtipongkul and Srisuchart (2018).

Figure 1: Survival Probability To Work After Retirement By Gender
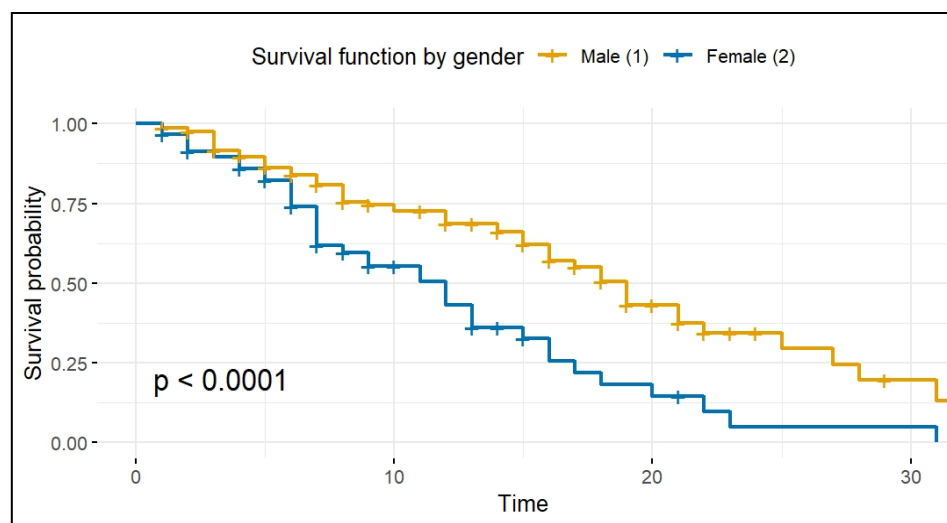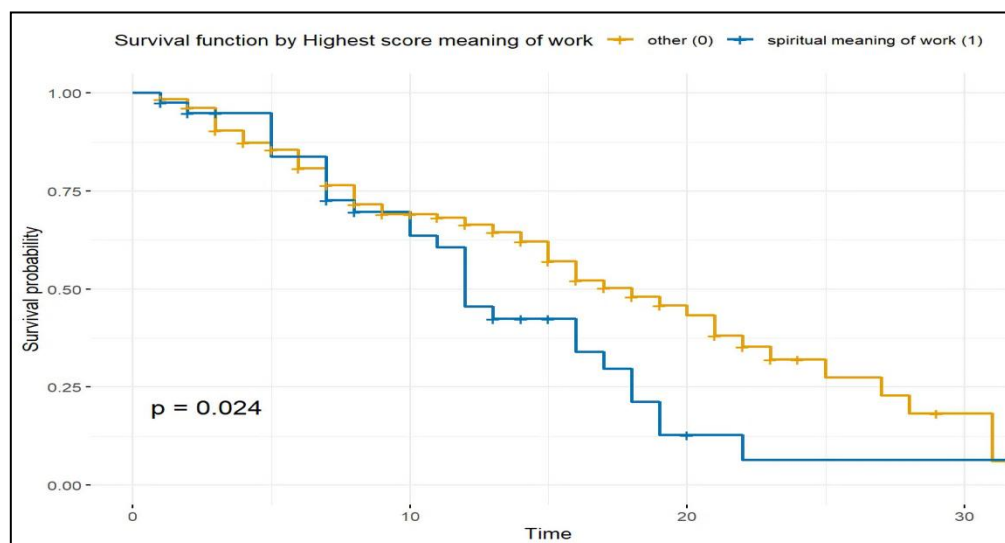

Figure 2 shows that retirees with the highest scores in the spiritual meaning of work tend to fully retire earlier than those with the highest scores in other dimensions of work meaning. This difference becomes increasingly evident after the tenth year of retirement.

Figure 2: Post-Retirement Work Survival Probability By The Highest Meaning Of Work Score

The relationship between the meaning of work and employment survival

We organize our discussion around the five dimensions of work meaning. While focusing on the two significant predictors (social and spiritual), we also address the non-significant dimensions (financial, personal, and generativity) for two reasons. First, their absence of an effect (notably personal and generative) contrasts with Western (e.g., Fasbender et al., 2016), highlighting a key contextual difference. Second, our subgroup analysis (see Table 4) reveals

that the influence of these variables (specifically financial and generative) is not truly absent, but context-dependent on income levels.

Table 3: Hazard Ratio for Retirees Not Returning to Work

Variable	Hazard ratio	SE	95% CI		p
			LL	UL	
Main variable					
Financial meaning of work index	1.056	0.089	0.895	1.246	.516
Personal meaning of work index	1.082	0.123	0.866	1.354	.488
Social meaning of work index	0.697**	0.113	0.507	0.959	.026
Generativity meaning of work index	1.016	0.046	0.929	1.111	.725
Spiritual meaning of work index	1.182**	0.078	1.038	1.346	.012
Control Variable					
Female	1.986***	0.523	1.185	3.329	.009
Collage	1.366	0.674	0.52	3.592	.527
Senior high school	1.285	0.501	0.599	2.758	.519
Married	0.878	0.260	0.492	1.569	.661
Experiencing health complaints	0.656*	0.150	0.419	1.028	.066
Pension age	1.310***	0.066	1.187	1.446	.000
Tenure	1.002	0.025	0.954	1.052	.936
Urban	0.801	0.235	0.451	1.424	.450
Suburban	1.008	0.280	0.584	1.738	.978
Lifetime migrant	1.358	0.297	0.885	2.083	.162
Living with spouse only	0.906	0.291	0.483	1.699	.758
Living with three generations	1.283	0.557	0.548	3.005	.565
Living alone	0.370*	0.223	0.113	1.207	.099
Retired from Public administration, defense, compulsory social security sector	1.060	0.364	0.541	2.078	.865
Retired from Education, health, social activities sector	0.715	0.279	0.333	1.535	.389
Manager or Professional	0.429**	0.149	0.217	0.847	.015
Income	0.996	0.280	0.575	1.727	.990
Family Size	0.953	0.121	0.743	1.222	.702

*Note: sig. .1, **sig. .05, ***sig. .01*

Table 3 shows that social and spiritual meanings shape retirement outcomes differently. A lower hazard ratio for social meaning (HR = 0.697, p = .026) indicates that retirees who ascribe greater social value to work are less likely to exit the labor market, suggesting longer employment survival. In contrast, a higher hazard ratio for spiritual meaning (HR = 1.182, p = .012) signifies an accelerated transition toward full retirement. The social meaning of work increases the probability of remaining in the labor market, whereas the spiritual meaning accelerates the decision to retire fully. This finding differs from those of Hansson et al. (2023), who found that people who ascribe social meaning to work tend to leave the workforce earlier due to involvement in social and volunteer activities. However, this aligns with several studies indicating that social meaning increases post-retirement work participation (Fasbender et al., 2016; Feng et al., 2024; Hess et al., 2021; Tur-Sinai et al., 2024).

Social meaning of work and continued employment

The social meaning of work is rooted in Javanese culture, which prioritizes the principles of social harmony (rukun) and respect (hormat) as the foundation of communal life (Soetjiningsih et al., 2019). Sulandari et al. (2024) demonstrated that maintaining harmonious social relationships is crucial for healthy aging. Harmony in social interactions encourages active social engagement among older adults (Utomo et al., 2019). In this context, individuals who find meaning in work through its social dimensions tend to maintain the networks and interactions established during their working lives. These social networks serve as a form of social capital, expanding access to new work opportunities in both formal and informal sectors (Gayen et al., 2019; Gonzales & Nowell, 2017).

Spiritual meaning of work and early retirement

In contrast, spiritual meaning discouraged continued employment, a pattern shaped by cultural and theoretical perspectives. In Javanese culture, spirituality is associated with dignified aging (Soetjiningsih et al., 2019). This stage of life, known as "*pangkur*," encourages older adults to let go of material pursuits. Disengagement theory posits that aging individuals naturally withdraw from productive roles as a form of spiritual and existential preparation (Bengtson, 2016). Thus, spirituality in this context is not a driver of work but rather a signal to retreat from it.

Froidevaux's (2024) contrasting findings reveal how context influences the link between spirituality and work engagement. Froidevaux emphasized the personal and transpersonal dimensions of spirituality. In contrast, this study interprets spirituality primarily as religious devotion within a communal and cultural framework. These differing conceptualizations underscore the importance of contextual definitions when analyzing the impact of spiritual meaning on retirement behavior.

Situational and structural predictors

Social and spiritual meanings of work shape retirement timing, but individual factors like health and social isolation also play a crucial role, adding complexity to retirement decisions. Surprisingly, retirees with health complaints and those living alone tended to remain in the workforce longer. The findings contradict the results of Myllyntausta et al. (2022) and Andersen et al. (2021), suggesting that work may serve as a coping mechanism for managing physical decline or loneliness. The SOC theory framework (Baltes & Rudolph, 2013; Bengtson, 2016) proposes that older individuals may select and optimize meaningful activities, such as work, to compensate for losses in other areas of life. Health and living conditions shape both the timing of retirement and the types of jobs older adults pursue. Our data show that retirees with health issues tend to work in less physically demanding sectors -such as public administration, finance, real estate, and other services (50 %), compared to the manufacturing sector (3.85 %).

As demonstrated in previous studies, pre-retirement occupation plays a pivotal role in shaping retirement decisions. For instance, managers and professionals find it easier to continue working post-retirement due to their accumulated human capital. This finding is consistent with that of Hess (2018), who identified social inequality in post-retirement job access among the occupational classes in Germany. Suppiah et al. (2024) also demonstrated

that education and prior work experience positively affect retirees' probability of returning to work. Overall, the results show that occupational background not only shapes post-retirement job access but also uncovers significant structural inequalities in the aging labor market.

The moderating role of income: Financial, generative, and spiritual meaning

Table 4 shows the varying effects of work meaning on post-retirement employment across the income groups. In the first income quartile, the financial meaning of work was associated with a lower odds of continued employment (HR > 1), suggesting that meeting basic needs reduces the motivation to remain employed. This finding aligns with the concept of financial sufficiency (Kim & Moen, 2002). Most respondents in the first quartile held jobs outside managerial or professional roles, typically in low-skilled positions. Friedman and Havighurst (1954) noted that low-skilled workers often view work primarily as a financial necessity and prefer to retire at a standard age.

The financial meaning of work boosted continued employment in the second-income quartile. Older adults in this group still cite financial reasons as their primary motivation to work. This contrasts with the first quartile, suggesting that those in the second quartile have sufficient resources to access informal, flexible jobs but still experience some financial insecurity. In this group, generativity negatively correlated with continued work. This partially contradicts Wiktorowicz et al. (2022), who emphasized generativity as a key factor in older adults' work decisions, suggesting that motivations vary across socioeconomic contexts.

Table 4: Hazard Ratio for Retirees Not Returning to Work by Income Group

Variable	Quartile 1		Quartile 2		Quartile 3	
	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE
Main variable						
Financial meaning of work index	1.613**	0.334	0.594**	0.127	1.032	0.176
Personal meaning of work index	1.153	0.288	0.896	0.261	0.933	0.180
Social meaning of work index	0.626	0.194	1.114	0.567	0.840	0.266
Generativity meaning of work index	1.071	0.105	1.368*	0.233	0.857	0.097
Spiritual meaning of work index	0.941	0.160	1.822**	0.490	1.226**	0.125
Control Variable						
Female	2.706	2.013	3.539	2.970	2.378**	1.004
Collage	1.291	1.171	1.641	2.436	1.419	1.835
Senior high school	0.703	0.477	0.337	0.405	3.785	4.333
Married	0.663	0.433	0.069*	0.099	0.656	0.407
Experiencing health complaints	1.495	0.826	0.166**	0.120	0.880	0.336
Pension age	1.646***	0.233	1.777***	0.265	1.256***	0.112
Tenure	1.083	0.057	0.796**	0.083	0.979	0.043
Urban	0.978	0.704	0.200	0.205	0.439	0.234

Variable	Quartile 1		Quartile 2		Quartile 3	
	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE
Suburban	1.156	0.877	1.108	0.939	1.147	0.568
Lifetime migrant	1.065	0.693	6.246***	4.175	1.152	0.445
Living with spouse only	2.620	2.641	7.796**	6.431	0.293**	0.166
Living with three generations	5.578**	4.852	0.484	0.699	1.645	1.531
Living alone	0.833	1.078	0.244	0.388	0.001	0.006
Retired from Public administration, defense, compulsory social security sector	2.027	1.454	0.099**	0.115	1.603	0.915
Retired from Education, health, social activities sector	1.798	1.506	0.104**	0.120	0.668	0.429
Manager or Professional	0.084***	0.070	0.055**	0.077	1.377	0.900
Family Size	0.710	0.197	2.067*	0.829	0.697	0.194

Note: *sig. .1, **sig. .05, ***sig. .01

Spiritual meaning drives earlier workforce exit in the second and third quartiles. This finding confirms retirees' pursuit of symbolic or transcendental meaning.

Contributions to retirement policy and aging studies

The diversity of post-retirement work patterns underscores the need for more flexible, optional retirement-age policies. Ananta, Moeis, et al. (2021) identified insufficient pension funds as a constraint on older adults' economic participation, and they recommended addressing this by extending or flexibilizing the retirement age. Remaining active in the economy and receiving pension support have been shown to reduce the risk of financial vulnerability among older adults (Absor et al., 2023). This study adds that beyond financial adequacy, the meaning of work also plays a crucial role. Older adults who derive significant social meaning from work should be supported by fostering strong social networks and creating a positive, constructive work environment that encourages continued participation (Feng et al., 2024). Conversely, those with a high spiritual meaning of work require support for community and religious engagement to sustain a sense of purpose and meaning beyond the economic sphere.

Accessible healthcare serves as a fundamental prerequisite for promoting economic participation among older adults (Utomo et al., 2019). The findings show that older adults with health complaints tend to remain active in the labor market as a coping mechanism. Furthermore, skill disparities present an additional impediment to sustained employment after retirement (Grzenda, 2023), with non-managerial and non-professional cohorts disproportionately affected. Therefore, inclusive post-retirement employment opportunities should be promoted through targeted upskilling and reskilling programs as individuals approach retirement.

The spiritual meaning of work reinforces the theory of gerotranscendence (Tornstam, 2011) and contributes to the growing literature on the spirituality of aging. Older adults with strong spiritual meaning are less oriented toward material aspects of work, shifting instead to non-

material and transcendental pursuits (Atchley, 2009; Tornstam, 2011). They tend to replace work with religious and community-based activities that fulfill similar existential and social needs.

Robustness check

Table 5: Robustness Check With Cox Regression And Inverse Probability Weight

Variable	Cox Regression		Cox regression with Invers Probability Weight	
	Hazard ratio	SE	Hazard ratio	SE
Main variable				
Financial meaning of work index	1.055	0.091	0.958	0.070
Personal meaning of work index	1.062	0.118	1.010	0.106
Social meaning of work index	0.740*	0.121	0.866	0.135
Generativity meaning of work index	1.005	0.048	0.987	0.042
Spiritual meaning of work index	1.162**	0.077	1.159**	0.076
Control Variable				
Female	1.985***	0.523	1.226	0.339
Collage	1.298	0.650	1.600	0.717
Senior high school	1.352	0.549	1.747	0.674
Married	0.881	0.265	1.376	0.398
Experiencing health complaints	0.705	0.161	0.469***	0.107
Pension age	1.313***	0.067	1.291***	0.057
Tenure	0.994	0.025	1.003	0.026
Urban	0.760	0.223	0.637	0.186
Suburban	0.950	0.264	0.703	0.204
Lifetime migrant	1.347	0.298	1.441*	0.311
Living with spouse only	0.915	0.299	0.694	0.244
Living with three generations	1.322	0.569	1.593	0.796
Living alone	0.380	0.229	0.383	0.227
Retired from Public administration, defense, compulsory social security sector	0.930	0.317	0.730	0.218
Retired from Education, health, social activities sector	0.684	0.263	0.640	0.251
Manager or Professional	0.473**	0.163	0.557*	0.190
Income	1.071	0.299	1.161	0.316
Family Size	0.947	0.123	0.862	0.146

Note: *sig. .1, **sig. .05, ***sig. .01

The robustness check produced results consistent with the survival analysis for both the complete and split samples. The Cox regression model confirmed that spiritual and social meanings of work are significantly associated with survival probability in post-retirement employment. The magnitude of the differences in hazard ratios between the Gompertz model and Cox regression was relatively small. Additionally, the IPW in the Cox regression yielded consistent results, particularly regarding spiritual meaning. While the IPW helped reduce selection bias in the survival analysis, it did not fully resolve endogeneity issues within the

model. To address this, we used instrumental variable (IV) techniques. Our survey data included the intensity of religious activities in the respondents' social environments. Despite its strong correlation with spiritual meaning, this variable was not a valid instrumental variable (IV). Previous studies have shown that social activities are correlated with continued employment later in life (Gayen et al., 2019; Gonzales & Nowell, 2017).

These findings indicate that unresolved endogeneity remains a limitation of this study. Future research should use robust instruments and longitudinal data to capture causal relationships.

Conclusion

This study reveals that older adults are likely to stay in the workforce during early retirement, with a marked decline after ten years. Additionally, the meaning of work relates to the likelihood of maintaining post-retirement employment. The social and spiritual meanings of work influence post-retirement employment in opposite directions. The social meaning of work extends senior participation in the labor market, while the spiritual meaning encourages withdrawal from economic activities after retirement.

The relationship between the meaning of work and continued employment also varied across income groups. The financial meaning of work is significantly associated with work survival in the first and second income quartiles, but in different directions. Resource availability may explain the differing impacts on work survival in these income quartiles. The spiritual meaning of work is significantly associated with work decisions in the second and third income quartiles, reinforcing the findings from the complete sample analysis. Our robustness check further confirmed the direction and magnitude of the relationship between the spiritual meaning of work and continued employment.

This study enhances our understanding of the symbolic meaning of work and its impact on post-retirement decisions. Additionally, we extend Mor-Barak's (1995) four-dimensional framework—financial, personal, social, and generativity—by incorporating a spiritual dimension. Our findings highlight the need for appropriate policies to promote productivity in older adults. Financial incentives remain relevant for low-income groups. Aging policies for middle and upper-income groups should prioritize promoting social and religious involvement among seniors.

Acknowledgements

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