



MEASURING MOTIVATION AND PERFORMANCE OF OLDER WORKERS FOR SUSTAINABLE ORGANIZATIONAL CONTRIBUTION

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Abstract

This article proposes a normative framework for selecting instruments that assess motivation and performance among older workers. It argues that late career motivation often centers on continued usefulness, professional pride, and knowledge transfer rather than status seeking. Therefore, measurement tools should capture generative intent, mentoring orientation, quality commitment, and perceived respect, while avoiding age coded wording. Performance assessment should extend beyond short term output by including process quality, accountability, error prevention habits, and observable developmental behaviors such as coaching and documentation support. The paper also frames physical demand adjustment and technology adaptation as domains requiring fair indicators that emphasize accuracy, consistency, safety minded use, and learning processes rather than speed alone. Instrument choice is evaluated through four criteria: construct relevance to late career work, item clarity and readability, coverage of individual and team capacity building contributions, and ethical governance of score use with transparent purposes and opportunities for clarification. The core claim is that fair measurement strengthens trust, sustains contribution, and supports responsible staffing decisions for senior employees.

Keywords: older workers, work motivation, performance measurement, knowledge transfer, mentoring, technology adaptation, fairness.

Introduction

The shifting workforce demographics are prompting organizations to rethink how they assess motivation and performance in older workers. In many sectors, senior workers remain in their roles due to professional commitment, the need to maintain a work identity, or a desire to stay useful. This drive often manifests as a wish to continue contributing, maintain work quality, and preserve social relationships in the workplace. This is because well-established working relationships in the office indeed play a significant role in supporting an individual's job satisfaction (Al Hakim et al., 2019). At the same time, organizations expect consistency in results, compliance with standards, and a willingness to follow process updates. Tension arises when performance metrics are built on assumptions of speed, competition, and physical stamina, whereas senior workers can demonstrate different values such as thoroughness, practical wisdom, and the ability to read risks. This condition shows that the level of discipline and competence possessed by each person will greatly determine their eventual work results (Arifin et al., 2017). Overly uniform measurements have the potential to overlook the quality of contributions that are more long-term in nature, such as error prevention, strengthening work discipline, and team stability. Therefore, the topic of measurement for older workers requires a discussion that integrates organizational goals with worker dignity, so that measurement tools do not become a source of injustice and do not damage the motivation that they actually intend to nurture (Truxillo et al., 2015).

The motivation of older workers is often rooted in the meaning of work, a sense of responsibility, and the need to leave a professional legacy (Ulrych & Syper-Jędrzejak, 2018). At a certain career stage, motivational orientation can shift from seeking promotions to seeking value the feeling that life experience and job skills remain useful. This aligns with the view that, besides wages, a comfortable work environment is also an important factor that awakens someone's work spirit (Chasanah et al., 2021). Many senior workers are driven to transfer knowledge, mentor younger colleagues, and maintain the quality of work practices that have been proven effective. This drive often does not appear as personal ambition, but rather as professional ethics and concern for organizational sustainability. However, such motivation is easily rendered invisible if motivational instruments only inquire about material incentives or

competitive preferences. In fact, strong motivation is often born from work experience and abilities that have been tested over many years (Mardikaningsih & Arifin, 2022). Inappropriate questions can lead to erroneous conclusions, as if senior workers are less motivated, when in fact they are motivated toward different forms of contribution. Additionally, the motivation of senior workers can be influenced by perceptions of reward and feeling respected. If organizations treat experience as a burden, the motivation to share will decline. Thus, measuring motivation in old age needs to be sensitive to motives of social contribution, professional generativity, and maintaining resilient work quality.

Performance in older workers needs to be viewed as a combination of results, processes, and impact on the work system. In many jobs, the end result is important, but the method of achieving that result also determines safety, service user satisfaction, and the quality of collaboration. Senior workers often contribute through more cautious decision-making, the ability to anticipate problems, and skills in simplifying complex procedures (Kanfer & Fletcher, 2020). Of course, a conducive work environment will greatly assist anyone in achieving maximum satisfaction and work results (Arifin & Mardikaningsih, 2022). These forms of contribution are sometimes not reflected in simple output indicators. Performance also includes contributions to work culture stability, such as maintaining ethical standards, helping resolve conflicts, and calming situations when pressure increases. Generally, work spirit and good discipline are indeed the primary keys to an employee's performance success (Jahroni & Darmawan, 2022). If an organization evaluates performance solely based on quantity, the performance of senior workers may appear to decline, even if their systemic value is high. On the other hand, there are jobs that demand physical strength or speed of response, so reasonable adjustments are necessary. A fair assessment must be able to distinguish between physical limitations that need accommodation and a decline in quality that needs coaching. Therefore, performance measurement for older workers requires instruments that capture the quality of the process, knowledge contribution, and the ability to adapt to technological changes without equating everyone to a single model of productivity.

Technological changes expand the need to assess adaptation as a part of performance. Adaptation is not merely the ability to use new devices,

but the ability to integrate technology into workflows safely and responsibly. Senior workers can face additional cognitive loads when digital systems change rapidly, especially when training is designed in a rush and presupposes a certain level of literacy (Kooij & Kanfer, 2019). In situations like this, support from the surrounding environment and the right motivation are highly needed so that work performance is not disrupted (Lestari & Darmawan, 2014). However, the assumption that senior workers are definitely slow learners is also dangerous, as it can create labels that reduce learning opportunities. In many organizations, successful adaptation is determined more by the quality of training, peer support, and workspace interface design than by age alone. Fair measurement needs to separate organizational design barriers from individual abilities. Additionally, adaptation also relates to attitudes toward updates, such as the willingness to try new procedures and the willingness to share feedback. These attitudes can be very strong in senior workers if they feel respected as partners in improvement. Ultimately, a sense of satisfaction at work often arises when there is a balance between workload and a supportive office atmosphere (Irfan & Hariani, 2022). Thus, measurement instruments need to capture readiness for continuous learning, the ability to solve technological problems practically, and the tendency to maintain data security and documentation quality.

Physical aspects and occupational health become important dimensions in the discussion of measurement for older workers, as certain jobs demand stamina, postural endurance, and the ability to recover (Cleveland et al., 2019). However, assessing senior workers through the same physical criteria for all types of tasks can lead to injustice. Organizations need to distinguish between jobs that inherently demand high physical effort and jobs that can be redesigned through task division and assistive tools. In performance appraisal, physical demands should be interpreted as demands of job design, not just individual demands. If job design is poor, workers of various ages will be affected. If job design is good, senior workers can remain productive through rhythm management, task variation, and the utilization of experience to increase efficiency. We need to remember that commitment to the organization and a good work culture will make employees feel more valued (Darmawan, 2016). Motivation measurement also needs to understand that some senior workers view work

sustainability as a form of independence, so they appreciate organizations that provide a safe space to work without feelings of humiliation. Therefore, appropriate instruments need to link the motivation to contribute with perceptions of ergonomic support, access to recovery, and respect for professional boundaries. Thus, measurement does not get trapped in age stereotypes, but rather in an understanding of decent and sustainable work.

The problem description in this topic relates to the suitability of motivation measurement instruments toward the motivational orientation of older workers. Many instruments are designed with the assumption that primary motivation revolves around promotion, competitive recognition, or status enhancement. Such assumptions can be less aligned with the motives of senior workers who emphasize usefulness, knowledge legacy, and quality stability (Kooij et al., 2011). When instruments do not capture these motives, measurement results risk assessing senior workers as less driven, even though their drive exists in a different form of contribution. Furthermore, motivation measurement often uses abstract language that is not tied to work experience, leading respondents to answer based on their respective interpretations. Interpretational differences can increase across different age groups because career experience shapes the way questions are read. This issue leads to a conceptual need to assess whether the measured dimensions of motivation are indeed relevant for the late-career phase. This description focuses on problems of definition, constructs, and dimensional alignment, without offering solution designs, so that the space of misalignment between measurement tools and the reality of senior workers' contribution motives can be clearly seen.

The next problem description concerns performance measurement that tends to emphasize short-term output and ignores the systemic contributions of older workers. In many organizations, performance indicators are structured to facilitate comparison and reporting, thus indicators often simplify work into quantitative figures. This simplification risks reducing recognition for contributions such as mentoring, error prevention, strengthening discipline, and knowledge transfer (Ng & Feldman, 2008). These contributions are often indirect, yet they are crucial for the sustainability of organizational competence. Furthermore, performance measurement often fails to separate individual performance from the quality of organizational support, such as the quality of

technology training or ergonomic-friendly work design. If support is weak, senior workers may appear less adaptive, when the problem actually lies within the learning structure. Another issue arises from the tendency to assess technological adaptation as merely a technical skill, whereas adaptation also involves the psychological safety to ask questions and the courage to try. This description emphasizes conceptual problems regarding indicators, assessment weights, and the definition of contribution, without entering into practical recommendations.

The urgency of this writing lies in the need to formulate a conceptual framework for selecting and evaluating motivational and performance measurement instruments suitable for older workers. Organizations require reliable measures for development, assignment, and reward decisions; however, these measures must be fair to a senior workforce whose contributions are often qualitative and sustainability-oriented. This writing is important to assert that measurement is not a neutral activity, but a normative one that determines what is considered valuable. If what is valued narrows down to speed and volume, organizations risk losing the benefits of experience, losing knowledge transfer, and weakening the cross-generational learning culture. The urgency is also related to technological changes that demand a wiser assessment of adaptation, including the distinction between individual ability and training design. Thus, this writing is necessary to clarify the principles of instrument selection, criteria for conceptual validity, and the ethics of measurement that respect the dignity of senior workers (Boehm et al., 2014).

The problem formulation in this writing is as follows. How to formulate normative criteria for selecting motivation and performance measurement instruments suitable for older workers, by considering sustainable contribution motives, knowledge transfer, and adjustments to physical and technological demands within the organization. This question centers on the selection criteria of the instrument, rather than the numerical results of the measurement. The focus demands an explanation of motivational dimensions relevant to old age, performance dimensions that encompass results and systemic contributions, and ways to examine the alignment of the instrument's language with work experience. This question also demands a description of the ethical boundaries of measurement so that assessments do not produce age stigma. With this formulation, the

discussion is directed toward constructing a conceptual framework that organizations can use to assess the adequacy of measurement tools before they are utilized in HR decisions.

The objective of this writing is to develop a normative conceptual framework for the selection of motivation and performance measurement instruments for older workers. The description focuses on dimensions of contribution motives, knowledge-sharing orientation, and adaptation to physical and technological demands. This writing emphasizes criteria for construct representation, clarity of language, suitability of result and process indicators, and ethical boundaries to ensure measurement does not stigmatize age. Theoretically, this framework clarifies the relationship between the late-career phase and relevant forms of motivation. Practically, this framework provides a reference for performance appraisal policies, competency development, and sustainable task design.

Method

This study is structured as a qualitative literature study aimed at synthesizing the principles for selecting motivation and performance measurement instruments for older workers. Walliman (2021) emphasizes the importance of formulating clear questions, establishing scope, and maintaining consistency in terminology. These principles are applied to ensure the discussion does not broaden into general aging issues but remains centered on measurement within organizations. The conceptual framework is built by organizing themes such as sustained contribution motivation, knowledge transfer, technological adaptation, and adjustment to physical demands.

The source collection stage was conducted through a search of works discussing work motivation instruments, performance instruments, and the principles of measurement tool development and assessment in organizations. May and Perry (2022) emphasize that social research demands caution regarding normative assumptions hidden within concepts; thus, the reading is directed toward identifying what values are embedded by the instrument, such as an emphasis on competition or an emphasis on stability. Babbie and Edgerton (2023) stress discipline in distinguishing between conceptual claims, normative arguments, and policy implications. This principle is used to map the differences between dimensions that *should* be

measured and indicators that are *commonly* used, thereby revealing the gaps of incongruity that affect assessment fairness for senior workers.

Material processing was carried out through repeated reading, recording key concepts, and grouping themes based on construct suitability and feasibility of use. Smela et al. (2023) describe the rapid literature review approach as a way to develop working definitions, filter sources in a targeted manner, and produce a synthesis that is concise yet orderly. The principle of directedness is used to establish inclusion criteria consisting of relevance to motivation measurement, performance measurement, and the dimension of old age at work. Themes are then compared to build evaluation criteria for instruments, such as item readability, relevance of dimensions, sensitivity to knowledge-sharing contributions, and awareness of physical and technological burdens. Reasoning is maintained through consistency of definitions, the separation between motivation and performance dimensions, and the assertion of boundaries between individual contributions and organizational support. Consequently, this study produces a conceptual guide that can help organizations select instruments that respect the dignity of older workers while remaining relevant to performance management needs.

Result and Discussion

Motivation in older workers refers to the internal and external drives that influence the desire of senior individuals to remain actively participating in the workforce, maintain productivity, and provide meaningful contributions to the organization and society (Eungswan & Chantuk, 2016). Unlike younger workers in their prime productive years who are often driven by career orientation and economic advancement, the motivation of senior workers tends to be influenced by needs for self-actualization, social meaning, psychological stability, and the desire to maintain a professional identity. Fundamentally, an individual's work spirit is indeed influenced by workplace conditions and a strong inner drive (Mardikaningsih & Darmawan, 2022). The scope of motivation for older workers includes intrinsic and extrinsic dimensions that undergo transformation alongside the aging process. Intrinsic dimensions include the satisfaction of sharing experiences, professional pride, commitment to the organization, and the need to continue feeling useful. The desire to

stay long-term in a company often arises if employees feel comfortable and remain motivated in their work (Pratiwi & Hariani, 2023). Motivation in this group is also influenced by perceptions of health, social support at work, and technological learning opportunities that allow them to remain competitive amidst changes in modern work systems.

Objective indicators for measuring the motivation of older workers can be seen through the level of work engagement reflected in consistent attendance, willingness to undergo training or adapt to new technologies, and voluntary participation in organizational activities beyond primary tasks (Petchdee, 2021). Furthermore, measurement is conducted through the stability of organizational commitment, the tendency to retain employment despite no longer being in the career accumulation phase, and the intensity of contributions toward mentoring or knowledge transfer to younger workers. We also need to realize that combined experience, ability, and motivation will greatly determine how well an individual's work results turn out (Sinambela, 2021). Other indicators include job satisfaction levels, perceptions of work meaning, and readiness to face changes in work systems without excessive resistance. Moreover, a healthy organizational climate and mature experience are proven to strengthen an employee's promise of loyalty or commitment to their workplace (Hariani et al., 2019). Measurement also encompasses the ability to manage work energy, psychological resilience toward organizational change, and the level of balance between personal health needs and professional responsibilities as indicators of motivational maturity in the late-age phase.

Performance in older workers is defined as the level of work achievement produced by senior labor through a combination of long experience, tacit knowledge competence, emotional stability, and experience-based decision-making abilities. The performance of this group is not always measured by work speed or physical strength, but rather through the quality of results, decision accuracy, the ability to solve complex problems, and contributions toward organizational stability. It is true that teamwork and social capital within a company serve as primary supporters in maintaining overall work quality (Putra et al., 2021). The scope of performance for older workers includes task performance, contextual performance, and knowledge-based performance. Additionally, the role of a leader who provides direction with proper discipline and

motivation is proven to improve the work achievement of their members (Saputra & Darmawan, 2023). Knowledge-based performance emphasizes mentoring abilities, competence transfer, and contributions toward maintaining organizational continuity through historical experience and a deep understanding of work processes.

Objective performance indicators for older workers can be observed through the quality of work output, low error rates, consistency in task completion, and the ability to maintain professional standards over the long term (Mykletun, 2015). Measurement also involves evaluating the effectiveness of decision-making, the ability to resolve workplace conflicts, and contributions toward increasing the competence of other team members through mentoring activities. This demonstrates how vital it is to maintain an orderly work culture so that organizations can survive and easily adapt to changing times (Putra & Arifin, 2022). Performance stability over time is a key indicator because senior workers often show stable productivity compared to fluctuating patterns. Furthermore, work spirit supported by a good office environment will significantly help in tangibly improving employee achievement (Darmawan et al., 2021). Objective assessment can also be conducted through the reduction of operational error risks, improvement of experience-based service quality, and a positive influence on team morale. Thus, performance measurement for older workers places experience, professional wisdom, and stability of work behavior as the primary parameters in assessing sustainable productivity in a multigenerational workforce era.

Measuring motivation in older workers needs to begin with a clear definition of what work motivation means in the late-career phase (Giordani et al., 2018). Motivation in this phase is often related to value orientation, sustainability of contribution, and the need to maintain a long-established professional identity. Every employee, whether working in the office or in the field, certainly desires a balance between work matters and their private life (Eddine & Darmawan, 2021). If measurement tools presuppose that the primary drive is always a promotion, the results will be biased toward workers who are still promotion-oriented. Within a normative framework, this bias is not merely a technical error but an injustice of recognition, as it erases the value generated through experience. Therefore, ethical principles in business decision-making are crucial for maintaining good relationships

with all parties outside the company (Mardikaningsih & Darmawan, 2022). Instrument selection must assess whether the measured dimensions include generativity motives, mentoring motives, and motives for maintaining standards. A sense of being respected and trusted often becomes a prerequisite for senior workers to be willing to share the tacit knowledge that has served as their competitive edge.

The dimension of knowledge transfer needs to be treated as both a domain of motivation and a domain of performance, yet the two must be conceptually separated (Eungswan & Chantuk, 2016). As a domain of motivation, knowledge transfer reflects the drive to share experience, provide advice, and build competent successors. As a domain of performance, knowledge transfer appears in concrete actions such as mentoring, documentation of best practices, and procedural improvements. The presence of leaders capable of bringing positive change is highly needed to move the values within an organization (Rojak et al., 2022). If an instrument assigns a low score because the behavior has not yet been observed, even though the opportunity was absent, the measurement misplaces the cause. Within a normative framework, a good measurement tool must be able to assess organizational elements that enable transfer, such as access to sharing forums and supervisor support. We must also remember that respecting diversity and creating an inclusive atmosphere is part of maintaining social order in today's workplace (Irfan & Hariani, 2023). Quality transfer involves patience in guiding, accuracy in providing examples, and the ability to translate experience into principles that can be used by other workers.

Performance measurement for older workers needs to assess the relationship between work results and work processes. Many senior workers excel in process stability, thoroughness, and error prevention. These contributions often go unseen if performance indicators are based solely on volume (Stamov-Roßnagel & Hertel, 2010). The normative framework demands that performance instruments include process quality, such as quality consistency, compliance with safety procedures, and the ability to maintain team work order. In high-risk jobs, process quality can be more decisive than speed. Overall, if all elements such as motivation and work environment are addressed, the expected work results will surely be achieved more easily (Mardikaningsih & Darmawan,

2022; Darmawan et al., 2021). Appropriate instruments must be able to avoid rewarding shortcuts that increase risk. Additionally, senior worker performance often includes social contributions, such as de-escalating conflicts, maintaining a polite culture, and serving as an ethical reference. Although these social contributions are difficult to measure, instruments can include clear behavioral indicators, such as quality of collaboration and willingness to help. Within this framework, performance instruments need to assess sustainability as a professional standard, not as a weakness.

The motivation to continue contributing among older workers is often connected to the experience of being valued. Therefore, appropriate motivational instruments need to capture meaningful perceptions of appreciation—namely, appreciation for competence, experience, and integrity. Meaningful appreciation differs from ceremonial praise. It is evident in the trust given to handle important tasks, the opportunity to provide input, and treatment that is not demeaning. Instruments that only ask about general job satisfaction may fail to capture this dimension. The normative framework demands questions that assess whether workers feel their voices are considered and whether they feel the organization respects experience. Fundamentally, the motivation held by each employee will provide a real positive impact on the work results of an organization (Darmawan & Ernawati, 2021). In the late-career phase, a sense of being respected is often related to role clarity. Senior workers can be motivated if their roles are clear and if their contributions are not shifted to activities deemed trivial. However, role clarity must also accommodate physical capacity adjustments. Therefore, motivational instruments need to capture whether the organization provides role options that allow for sustainable contribution. Thus, the instrument does not merely measure the level of motivation, but assesses the motivational structure and the conditions that allow that motivation to be realized into visible performance (Zacher & Schmitt, 2016).

Technological adaptation in older workers needs to be measured more broadly than just the ability to click and memorize menus. Relevant adaptation within an organization relates to the ability to use technology to maintain work quality, safeguard information security, and improve coordination (Kvalheim et al., 2017). Senior workers can demonstrate adaptation through how they integrate proven old procedures with new features that accelerate workflows. We need to understand that the use of

information technology combined with strong work motivation will significantly help improve employee performance (Sinambela & Mardikaningsih, 2022). A good instrument needs to capture this reasoning, as the ability to choose the right features is more important than merely comprehensive usage. Additionally, technological adaptation is linked to the courage to ask questions and the courage to try. If an instrument measures adaptation as a purely individual ability, it ignores team norms that might make people afraid of appearing slow. The normative framework demands instruments that separate technical competence from the learning climate. However, measurement tools must still focus on the individual, so this separation is achieved through items that assess the learning experience, such as access to support and comfort in asking for help. Adaptation measurement also needs to account for the role of senior workers as technology instructors in certain respects, as many senior workers are capable of teaching work procedures that help make the use of technology more logical. Thus, adaptation does not always mean passive following; rather, it can mean directing the use of technology so that it aligns with quality standards.

Physical demands must be considered as a dimension that influences performance and also as a dimension that influences motivation (Kooij et al., 2020). Senior workers may assess tasks that are too physically demanding as a threat to sustainability, leading them to choose to withdraw from certain roles. Performance instruments that do not include this aspect risk mistaking a decrease in output for a lack of commitment. In this regard, the balance between personal life and work is indeed heavily influenced by the rules existing within an organization (Eddine & Darmawan, 2022). The normative framework demands that performance instruments consider the suitability of task demands with reasonable work design. This does not mean lowering quality standards, but rather assessing quality through indicators relevant to the role. If a role demands physical strength, the organization needs to ensure measurement includes elements of safety and ergonomic compliance. If a role can be shifted to tasks demanding reasoning, then indicators need to assess decision accuracy and mentoring. Motivational instruments also need to capture the attitudes of senior workers toward health maintenance. At this phase, taking care of health is often viewed as a professional responsibility, as health affects workplace safety. Therefore, the

motivation for sustainable work can include the motivation to maintain boundaries. A measurement tool that views boundaries as a lack of dedication will be misleading and detrimental.

The criteria for the suitability of motivational instruments must assess the representation of dimensions relevant to old age. These dimensions may include generativity motives, professional recognition motives, stability motives, and healthy social attachment motives. Instruments also need to capture orientations toward contributions that are not always visible, such as helping the team avoid mistakes. The normative framework emphasizes that suitability is not determined by the length of the instrument, but by the accuracy of the dimensions. This is important to note because a leader's role in building work culture is often seen through habits and symbols in the office (Irfan & Sajjapong, 2023). A brief but accurate instrument is better than a long instrument that asks irrelevant questions (Palmarini et al., 2019). Furthermore, the language of the items must be appropriate for work experience and must not contain specific age assumptions. For example, an item that presupposes everyone is chasing a promotion will make senior workers appear to have low motivation. An item that presupposes motivation must manifest as high energy at all times can also be biased, as the motivation of senior workers may take the form of persistence and consistency. Appropriate instruments also need to pay attention to how scales are constructed, so as not to force extreme choices that do not reflect experience. The normative framework demands readability and clarity. Readability protects the quality of responses, while clarity protects the fairness of interpretation.

The suitability criteria for performance instruments need to assess whether the indicators reflect core job contributions and additional contributions that are valuable to the organization. For older workers, additional contributions often take the form of coaching, strengthening discipline, and process stabilization. Instruments that only assess the end result will overlook these contributions. The normative framework demands that performance be assessed as a combination of result quality, process quality, and contributions toward strengthening team capacity (Stamov-Roßnagel, 2015). However, assessments must remain practically executable, so instruments need to include behavioral indicators that are observable and explainable. For example, indicators regarding mentoring should point to

clear activities, such as providing work feedback, guiding procedures, and assisting with documentation. Performance indicators also need to minimize supervisor bias. Bias can arise when a supervisor prefers a specific work style that is more common at a certain age. Good instruments use behavioral descriptions rather than character labels. Additionally, instruments need to provide space for role variation. Senior workers are often in more complex roles; thus, indicators must assess complexity rather than equating tasks with those of beginners. Consequently, performance suitability criteria demand relevance, clarity, and fairness.

Fair measurement instruments must reject age stigma as a basis for assessment. Stigma can emerge through assumptions that senior workers are less productive or less innovative. The normative framework asserts that measurement must test actual contributions to the role performed, not test stereotypes. Therefore, instruments need to be accompanied by interpretation guidelines that emphasize a proportional reading of results. Proportionality means considering roles, burdens, and opportunities. Opportunity is crucial because many performance indicators depend on access to projects, access to training, and supervisor support. If senior workers are not given access, measurement results will be low and then used to justify further reduction of access (Taneva & Yankov, 2020). This cycle is unfair. Therefore, appropriate instruments need to flag indicators that are sensitive to organizational opportunities. In motivation measurement, age stigma can also cause senior workers to withhold honest answers for fear of being judged as weak. Thus, the way an instrument is administered and its language must emphasize dignity. Instruments rooted in respect will produce more honest responses. Honesty is essential for accurate and fair HR decisions.

Motivation measurement for senior workers needs to distinguish between the motivation to persist and the motivation to grow. Persistence motivation may take the form of economic needs or the need for stability, while growth motivation may include the desire to learn, the desire to mentor, and the desire to contribute ideas (Eddine et al., 2023). Instruments that mix the two will be difficult to interpret. The normative framework demands the mapping of motives so that organizations can understand what drives quality contributions. Furthermore, motivation in old age is often linked to fairness of treatment. Fairness of treatment includes reasonable

task distribution, proportional recognition, and respectful communication. Motivation instruments that only ask about internal motivation ignore this relationship. However, instruments that overemphasize external satisfaction also risk ignoring personal values. Therefore, a good criterion is the balance between internal factors and relational factors. Relational factors are very important in old age because senior workers often act as guardians of team norms. If relationships are damaged, they withdraw and knowledge transfer ceases. Thus, appropriate motivation instruments must capture how senior workers define contribution and how they assess the professional relationships that sustain that contribution.

Performance related to knowledge transfer often requires indicators that capture long-term contributions. Within a normative framework, long-term contributions include strengthening the competence of the next generation, reducing error risks, and standardizing safer practices. Long-term indicators are difficult to measure if the organization only assesses over short periods. Therefore, suitable performance instruments need to include dimensions that are observable in the short term but lead to long-term benefits, such as the orderliness of documentation, the quality of coaching, and the willingness to review work. These dimensions recognize that senior workers often contribute through system reinforcement. System reinforcement is often invisible in output reports but determines organizational quality (Stamov-Roßnagel, 2015). Instruments also need to assess the limits of responsibility so that senior workers do not become the buffer for every problem. If senior workers are constantly asked to fix things without recognition, they will burn out and motivation will decline. The normative framework emphasizes that measurement must not encourage the exploitation of experience. Measurement should guide a fair distribution of burdens, so that mentoring activities are viewed as professional tasks that have designated time and recognition. Thus, knowledge transfer indicators must be linked to reasonable work arrangements.

Technological adaptation instruments need to be sensitive to the difference between initial difficulties and the rejection of values. Senior workers may experience initial difficulties due to complex system designs, yet still maintain a strong commitment to quality (Eungswan & Chantuk, 2016). Instruments that equate initial difficulty with resistance will result in unfair assessments. The normative framework demands indicators that

assess the learning process, such as the willingness to attend training, the use of assistance, and the application of basic features to maintain work quality. On the other hand, there are situations where workers reject technology because they judge that it lowers quality or security. Such rejection is not always negative, as it can be a legitimate professional critique. A good instrument needs to provide space for quality-based reasons for rejection. Thus, technological adaptation is measured as the ability to weigh benefits and risks, rather than blind compliance. Additionally, senior workers often serve as the link between old procedures and new systems. They can help the organization maintain continuity. Suitable instruments need to capture these contributions, such as the ability to provide feedback for workflow improvement. In this way, the measurement of adaptation can encourage a two-way learning culture between generations, rather than a culture of labeling that creates barriers.

Performance measurement in physical jobs needs to include dimensions of safety and recovery quality. Senior workers can maintain safety through orderly work methods, selection of safe movements, and refusal of hazardous procedures (Varianou-Mikellidou et al., 2021). Instruments that only assess speed can encourage risky behavior. The normative framework demands indicators that assess compliance with safety standards, risk reporting, and procedural consistency. These indicators ensure that the organization values work sustainability. Furthermore, senior workers often possess unwritten knowledge about safe work practices. If this knowledge is not measured as a contribution, the organization loses a learning opportunity. Therefore, performance instruments need to include indicators for sharing safe practices. However, indicators must be clear to avoid becoming subjective assessments. Clarity can be achieved through activity descriptions, such as providing safety briefings or assisting with equipment inspections. Thus, the instrument does not force senior workers to match the speed of younger workers, but rather assesses quality relevant to safety. This is a form of justice. Justice means assessing according to job demands and the organization's ethical goals, rather than assessing based on a single model of productivity.

Measuring motivation in older workers also needs to consider changes in time orientation. In the late-career phase, time orientation is often more focused on the meaning of the present day and valuable

relationships, rather than purely abstract long-term plans (Niesel & Nili, 2021). Instruments that overemphasize future ambition may fail to capture this orientation. The normative framework demands questions that assess satisfaction with contributions, pride in quality, and the desire to leave behind good practices. Such questions capture generative motives without forcing hierarchical ambitions. Additionally, time orientation influences how senior workers evaluate training. They tend to value training that is directly relevant to maintaining work quality and simplifying tasks, rather than training that is symbolic in nature. A good motivation instrument needs to assess perceived relevance, as relevance affects learning engagement. However, relevance should not be interpreted as a rejection of updates. Relevance needs to be seen as a demand for rationality. Thus, motivation measurement must capture the rationality of senior workers in choosing their learning energy. This rationality is a strength, as it helps the organization focus updates on things that are truly valuable.

Suitable performance instruments for senior workers need to accommodate role variations, including expert roles, coaching roles, and quality assurance roles. These variations cannot be assessed using a single, uniform list of indicators. The normative framework demands role mapping prior to instrument selection. Role mapping ensures that indicators are truly linked to responsibilities. In expert roles, indicators can assess decision accuracy and recommendation quality. In coaching roles, indicators can evaluate feedback quality and people development. In quality assurance roles, indicators can measure standard consistency and error prevention (Wong et al., 2017). This mapping resists the tendency to simplify all performance into output. Furthermore, instruments need to assess collaboration, as senior workers often serve as team anchors. However, collaboration must be measured as tangible behavior, such as readiness to assist in coordination and maintaining communication. Vague collaboration measurements can easily become tools for favoritism. The normative framework demands clarity so that assessments remain explainable. Thus, an appropriate instrument is one that connects indicators with roles, maintains interpretive fairness, and recognizes qualitative and systemic contributions.

Instrument language is a critical area because language determines whether questions are understood and whether responses reflect experience.

Senior workers possess long-standing experience, making them sensitive to language that is condescending or that assumes incompetence (Boumans et al., 2011). The normative framework demands language that is neutral, respectful, and specific. Neutral means not leading the answer. Respectful means not stigmatizing age. Specific means referring to clear behaviors or experiences. Additionally, instruments need to avoid double-barreled items that mix two things at once. Such items make responses difficult to interpret, especially for respondents who distinguish matters sharply. Instruments also need to consider cognitive load. Too many similar items can cause fatigue and lower response quality. This is particularly important for workers completing assessments after work hours. The normative framework demands designs that consider time and burden. However, designing with burden in mind does not mean lowering measurement quality, but rather prioritizing items in the most relevant dimensions. Thus, instrument quality depends on the ethics of language and design, as measurement is a social interaction that affects the respondent's dignity.

Measurement fairness also demands clarity regarding the purpose of the measurement. The same instrument can be used for development or for punishment. If senior workers believe measurements are being used to push them out, they will avoid honesty. The normative framework demands transparency of purpose and limits on how results are used. This transparency is part of organizational ethics. Furthermore, fair performance appraisal requires legibility, meaning workers understand what is being assessed and how results are read. Legibility prevents the feeling of being treated as a numerical object. For senior workers, legibility is vital because they hold strong professional standards (Rego et al., 2017). If assessments feel vague, they perceive the organization as lacking seriousness. The normative framework also demands clarification mechanisms—space for workers to explain work conditions affecting performance, such as changes in tools or workload. Clarification space is not self-defense; it is part of accountable assessment. Thus, instrument selection cannot be separated from appraisal governance. A good instrument can fail if governance is poor. However, this study emphasizes that instrument selection must consider alignment with fair governance so that measurements result in proper decisions.

Motivational instruments suitable for older workers need to assess an orientation toward quality and responsibility. Senior workers are often driven by pride in work that is neat, safe, and ethical. If an instrument measures motivation merely as a competitive drive, then the quality motive remains invisible. The normative framework demands dimensions that assess satisfaction when quality is maintained, a sense of meaning when others are helped, and a sense of calm when procedures are performed correctly. These dimensions capture the motivations that frequently serve as the engine for senior workers. Additionally, instruments need to capture relational orientation, such as the satisfaction of working in a mutually respectful team. Good relationships often serve as a source of energy. However, relationships are also linked to boundaries. Senior workers can be motivated if the organization respects boundaries and does not force endless sacrifice (Taneva & Yankov, 2020). Therefore, motivational instruments need to assess perceptions of balance, without turning balance into an indicator of laziness. The normative framework asserts that balance is a prerequisite for sustainable work, especially in old age. Thus, appropriate motivational instruments help organizations read the true sources of energy, so that assignment and development decisions can align with contribution motives.

Performance instruments need to include dimensions of accountability relevant to old age, including consistency and accuracy. In many jobs, small mistakes can have a large impact (Rego et al., 2017). Senior workers often serve as guardians of accountability through the habit of checking and warning. The normative framework demands indicators that value accountability, rather than valuing speed that ignores verification. Furthermore, accountability includes the ability to provide reasons for decisions. Senior workers are often able to provide strong reasoning due to their experience. Performance instruments that assess this ability will capture a contribution that is valuable to the organization, especially in jobs requiring reasoning. However, indicators must be formulated as observable behaviors, such as the quality of decision documentation and clarity of communication. Thus, the instrument does not depend on personal impressions. The normative framework also demands that accountability is not used to burden senior workers with all the responsibility. If an organization always hands off problems to senior workers, the measurement becomes a tool for exploitation. Therefore,

instruments need to be used alongside workload mapping. Yet, regarding instrument selection, the critical criterion is whether the instrument encourages a healthy distribution of responsibility and values accountability contributions as part of performance.

The measurement of technological adaptation in old age needs to avoid assessments that equate adaptation with speed (Taneva & Yankov, 2020a). Learning speed varies among individuals, and speed is not always related to the quality of application. The normative framework demands indicators that assess accuracy of use, consistency, and security. Senior workers may be slow at the start, but they are stable and safe once they have mastered it. Instruments that assess stability will be fairer and more relevant to the organization. Additionally, technological adaptation is often related to support. A good instrument should be used to map learning needs, not to judge. Therefore, items need to be formulated as experiences and needs, rather than as accusations. For example, assessing comfort in using a system rather than assessing intelligence. The normative framework also emphasizes that senior workers can be a source of system improvement because they understand the actual work processes. Instruments that include space for feedback will capture this contribution. Thus, technological adaptation is measured as a collaborative process between the individual and the organization, while remaining focused on individual behavior and experiences that can be used for appropriate training assignments.

Performance in older workers also needs to consider the quality of cross-generational collaboration. Senior workers often work with younger workers who have different communication styles. Suitable performance instruments need to assess collaboration ability as a competence, not as a personal preference. The normative framework demands indicators that assess the willingness to share knowledge, the willingness to receive input, and the ability to maintain respect amidst differences. These indicators are relevant because cross-generational collaboration serves as the main pathway for knowledge transfer (Gerpott et al., 2017). However, the measurement of collaboration must avoid bias toward specific communication styles. Some people are more expressive, while others are calmer. Instruments that value expressiveness can disadvantage workers whose communication is calmer yet clear. Therefore, indicators need to focus on clarity, accuracy, and

willingness to help, rather than on style. The normative framework also demands that collaboration is not used to require senior workers to become mentors without recognition. Mentoring must be assessed as a contribution that carries a time burden. Thus, a good instrument recognizes collaboration as work, not as mere politeness. This maintains fairness and preserves the sustainability of senior workers' motivation to share.

Suitable measurement instruments need to consider how results are used in HR decisions. If the organization uses results for more appropriate assignments, senior workers tend to view the measurement as support. If the organization uses results to limit opportunities, senior workers view the measurement as a threat. The normative framework demands that the selection of instruments be done alongside principles of result usage. These principles include openness, opportunities for clarification, and a focus on development. A focus on development means results are used to design training, improve work, and organize roles. For senior workers, a focus on development is vital for maintaining dignity because they have a long track record. Using results in a demeaning way will damage professional identity. The normative framework also emphasizes that measurement must distinguish between adaptation needs and the assessment of human value. Senior workers remain valuable even if they need training. Thus, instruments must be chosen by considering the risk of stigma (Posthuma & Campion, 2009). Instruments that imply age is synonymous with problems will amplify stigma. Instruments that assess needs neutrally will be safer. This confirms that instrument quality includes the quality of ethics.

Instrument selection must consider suitability across various types of work. Older workers are present in manual labor, service jobs, administrative roles, and knowledge-based occupations (Rego et al., 2017). Motivation and performance instruments cannot be applied uniformly without adjustment. The normative framework demands a mapping of task types and core competencies. In manual labor, indicators of safety, precision, and coordination may be more critical. In knowledge-based work, indicators of reasoning, decision quality, and documentation quality may be more important. Senior workers are often in complex tasks that require practical wisdom. Instruments must capture this complexity. If an instrument is too simplistic, senior workers appear identical to new hires, and this erodes recognition. However, the instrument must also not become overly subjective.

The normative framework demands a balance between behavioral indicators and result indicators. Thus, instrument selection must consider the structure of work and the career structure. This is vital because the motivation of senior workers is often linked to the sense that their experience is being utilized appropriately. If experience is not utilized, the motivation to contribute declines. Therefore, the instrument must help the organization place people in suitable tasks rather than merely providing labels.

Motivational instruments for older workers need to include a dimension of commitment to professional standards. Many senior workers possess an ethos that work must be done correctly, even when not supervised. This ethos can be a source of high and stable performance. The normative framework demands items that assess pride in quality and discomfort toward sloppy work. However, items must be structured so as not to be judgmental, but rather to describe professional preferences. Additionally, commitment to standards is often linked to experience in facing risks. Senior workers often understand the consequences of errors through experience. A motivational instrument that captures the motive of caution will be more relevant. On the other hand, commitment to standards can make senior workers appear rigid if the organization defines innovation solely as rapid change. The normative framework demands a distinction between caution and resistance. Caution is a quality; resistance can be a problem or it can be a legitimate critique. A good instrument can distinguish between the two through questions regarding openness to updates when evidence of quality is clear. Thus, motivational instruments help organizations see senior workers as guardians of quality who are still capable of learning, rather than as obstacles.

Table 1. Motivation and Performance Indicators for Older Workers

Assessment Aspect	Motivation Indicators	Performance Indicators
Primary Focus & Orientation	Value & Beneficence Orientation: Drive to remain relevant, help others learn, maintain quality	Quality & Accuracy: High-quality output, decision accuracy, low error rates
	Generativity: Motive to build competent successors	Organizational Stability: Contribution to team and organizational stability

	Professional Identity: Desire to maintain self-esteem and professional role	Complex Problem-Solving: Ability to solve problems based on experience (tacit knowledge)
Work Process & Contribution	Work Engagement: Consistent attendance, voluntary participation, willingness to adapt	Process Quality: Consistency in quality, adherence to safe procedures, thoroughness, error prevention
	Knowledge Transfer (Intention): Drive to share experiences, give advice, mentor	Knowledge Transfer (Action): Mentoring activities, documentation of best practices, procedure improvement
	Upholding Standards: Motive to maintain professional and quality standards	Accountability: Consistency, precision, habit of checking work, ability to justify decisions
Social Relations & Environment	Feelings of Respect & Trust: Perception that competence, experience, and integrity are valued	Social Contribution: Calming conflicts, maintaining respectful culture, serving as ethical reference
	Fair Treatment: Equitable task distribution, respectful communication	Cross-Generational Collaboration: Willingness to share and receive knowledge, ability to maintain mutual respect
	Social Connection: Satisfaction from working in a mutually respectful team	Collaboration Quality: Clarity of communication, willingness to help with coordination
Adaptation & Sustainability	Technology Adaptation (Reasoning): Ability to integrate old procedures with new features, courage to try	Technology Adaptation (Application): Accuracy of use, consistency, information security, contribution to system improvement
	Survival vs. Growth Motivation: Need for stability vs. desire to learn and contribute ideas	Work Safety: Compliance with safety standards, risk reporting, orderly work methods
	Maintaining Boundaries: Motivation to maintain health as a professional responsibility	Work Sustainability: Long-term performance stability, balance between physical demands and capacity

Special Characteristics to Assess	Mapped Motives: Generativity, professional recognition, stability, healthy social attachment	Additional Contributions: Coaching, reinforcing discipline, process stabilization
	Time Orientation: Focus on meaning of current contributions and legacy of good practices	Role Variations: Expert role (decision accuracy), coach role (feedback quality), quality guardian role (standard consistency)
	Commitment to Standards: Pride in quality, work ethic that remains strong even without supervision	Long-Term Impact: Strengthening next generation's competence, reducing risks, standardizing safe practices

Performance measurement for senior workers needs to assess contributions to the development of others as part of professional performance. Developing others is often treated as an additional activity that is not evaluated. The normative framework asserts that the development of others is work that generates organizational benefits (Petchdee, 2021). However, to be fair, development indicators must be clear and limited, so they do not turn into an open-ended obligation. Indicators can assess the quality of feedback, the willingness to share procedures, and the ability to teach standards. Measurement also needs to distinguish between structured development and informal development. Structured development occurs within programs, while informal development happens in daily work. Both need to be recognized. However, recognition does not always have to take the form of high scores. Recognition can manifest as indicators that carry weight so that mentoring time is considered legitimate. The normative framework emphasizes that such recognition maintains the motivation of senior workers to share. If measurement ignores mentoring, senior workers will focus only on the indicators that are evaluated. Consequently, knowledge transfer ceases. Thus, appropriate performance instruments must align with the organization's goal of preserving knowledge. If an organization wants knowledge to survive, measurement must recognize the activities that ensure its survival.

The framework of normative criteria for instrument selection ultimately demands four groups of considerations. First, construct suitability, meaning the dimensions of motivation and performance

measured must be relevant to the late-career phase. Second, language quality and readability, meaning items must be clear, respectful, and free of age-based assumptions. Third, scope of contribution, meaning performance is assessed through results, processes, and contributions to strengthening team capacity, such as knowledge transfer and quality assurance. Fourth, the ethics of usage, meaning results are used with transparency of purpose, opportunities for clarification, and the prevention of age stigma. This framework addresses the problem formulation by asserting that a suitable instrument is not merely a popular one, but one that aligns with organizational values and the reality of senior workers' contributions (Hedge & Borman, 2012). In this discussion, older workers are understood as a source of quality and sustainability. Therefore, appropriate measurement must be able to capture unique contribution motives while ensuring that HR decisions remain accountable. In doing so, organizations can build fair assessments while simultaneously maintaining sustainable productivity.

Conclusion

Measurement of motivation and performance in older workers demands a normative framework that assesses the suitability of instruments with the contribution orientation of the late-career phase. Senior workers' motivation is often directed toward usefulness, quality maintenance, and the desire to share knowledge; thus, motivation instruments need to include dimensions of professional generativity, sense of respect, and work meaningfulness. Performance measurement needs to go beyond output volume by incorporating process quality, accountability, contributions to strengthening team capacity, and clear mentoring behaviors. Adjustments to physical and technological demands need to be measured fairly through indicators of accuracy, consistency, safety, and the learning process, rather than speed alone. The framework for selecting instruments demands construct suitability, linguistic readability, coverage of relevant contributions, and ethics in utilizing results to avoid producing age stigma. Consequently, appropriate instruments help organizations make accountable HR decisions that respect the dignity of senior workers.

Implications and suggestions emphasize that organizations should organize instrument selection as part of a fair assessment governance.

Organizations are advised to map the roles of senior workers first, then select motivation and performance instruments aligned with those role responsibilities, including the roles of experts, mentors, and quality guardians. Motivation instruments need to be tested for linguistic readability and dimensional suitability with contribution motives, ensuring results do not misjudge. Performance instruments are suggested to include indicators of knowledge transfer and process quality through clear behavioral descriptions so that assessments do not rely on impressions. Measuring technological adaptation is suggested to assess the accuracy of application and the learning process, accompanied by space for clarification regarding training support. Organizations are also advised to establish transparency in measurement goals, clarification mechanisms, and principles for using results that are development-oriented. These suggestions help maintain response honesty, prevent age stigma, and strengthen the sustainability of senior workers' contributions.

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