

Association Between the Characteristics of Organizations and Their Profile of Performance Against Quality Benchmarks for Workplace Health Promotion

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Abstract:

Objective: This study explored subgroups of performance profiles measured by organizations' Well Workplace Checklist (WWC) benchmark scores and examined company characteristics associated with performance subgroups. **Methods:** The sample included 3728 US organizations that completed the WWC in 2008 to 2015. Latent profile analysis (LPA) was used to extract distinct subgroups of organizations based on benchmark performance. Multinomial logistic regression analysis was used to examine associations between the characteristics of organizations and their performance subgroup. **Results:** Three distinct subgroups of performance resulted from the LPA. Significant associations were found between subgroup assignment and characteristics such as size, industry, how WHP initiatives were paid for, and reasons for implementing WHP initiatives. **Conclusion:** The characteristics associated with subgroups of performance suggest utility for developing specific interventions tailored to different types of organizations to improve their overall quality of WHP initiatives.

Keywords: assessment | benchmarking | latent profile analysis | workplace health promotion

Article:

With the opportunity to reach over 129 million full-time employees in the United States,¹ workplace health promotion (WHP) initiatives have become a popular approach to addressing the health and wellness of US adults. An estimated 50% of US organizations implement some form of WHP initiatives.² Employers implement WHP initiatives for a variety of reasons, including to improve employees' health, reduce healthcare costs, decrease absenteeism, and increase morale, retention, and productivity.³⁻⁵ These outcomes may be more likely when employers implement high-quality WHP initiatives.⁶⁻⁸ Yet, of organizations offering WHP

initiatives, fewer than 7% are estimated to have high-quality WHP initiatives, based on national guidelines and benchmarks for quality.^{5,9} Thus, research on the quality of WHP initiatives is critical to understanding the impact of initiatives on the aforementioned goals.

National guidelines and benchmarks suggest that high-quality WHP initiatives consist of multiple components in an organization.⁵⁻⁸ Benchmarks include components such as senior leadership support, employee wellness teams, organizational policies, environmental supports within an organization, and the implementation of health-related programs for employees. National surveys have provided estimates of the proportion of organizations that implement high-quality WHP initiatives based on benchmarks. However, research has not provided finer-grained analyses to show how organizations vary in their profiles of quality across benchmarks. In addition, although research suggests that organizational characteristics such as size or industry may influence the quality of WHP initiatives,⁹⁻¹³ it is unclear how characteristics of organizations relate to profiles of performance against quality benchmarks. Given the suggested differences in the availability and quality of WHP across different types of organizations,^{2,4,9,12} it may be beneficial to categorize types of quality profiles and to quantify the relationship between the characteristics of an organization and their type of quality profile.

Understanding the performance against benchmarks for WHP initiatives as well as factors that are related to benchmark performance could address gaps in the literature and provide valuable insights for tailoring support and resources for organizations striving to improve their WHP initiatives. Therefore, the purpose of this study was to (1) explore subgroups of performance profiles against quality benchmarks distinguished by Well Workplace Checklist (WWC) benchmark scores, and (2) examine characteristics of organizations that may be associated with subgroup membership. One statistical approach that can be useful in the study of how organizations differ in performance across benchmarks is latent profile analysis (LPA). In LPA, organizations are classified into subgroups of similar quality profiles of performance across multiple benchmarks. This analysis is followed by an examination of the relationship between characteristics of organizations and subgroup membership using multinomial logistic regression.

METHODS

Sample

The sample included 3728 organizations that self-selected to complete the WWC from October 2008, when the checklist was made publicly available, through October 2015, when the data were received by UNCG under the terms of a data sharing agreement with WELCOA. Although some organizations used the checklist to reassess their WHP initiatives across multiple years, the sample for this study was restricted to the first WWC entry for each organization to ensure that repeated exposure to the checklist or changes enacted in organizations over time did not influence the profiles of performance against benchmarks. Therefore, the total sample size for this study included only first-time WWC entries for 3728 organizations.

Measures

This study examined WWC data which were collected by the Wellness Council of America (WELCOA) from 2008 through 2015. The WWC is composed of 100 items that measure organizations' performance against WELCOA's seven quality benchmarks for WHP. WELCOA's seven benchmarks include (1) senior leader support, (2) wellness teams, (3) data collection, (4) operating plan, (5) programming, (6) supportive environments, and (7) evaluation.⁵ Responses to those 100 questions were assigned values that correspond with the quality or comprehensiveness of the approach. Scores for the overall checklist and each quality benchmark were calculated as proportions of potential total scores with ranges 0 to 100. The overall WWC score and the individual benchmark scores were used to extract subgroups (ie, profiles, classes, or clusters) of organizations based on benchmark performance (Fig. 1).

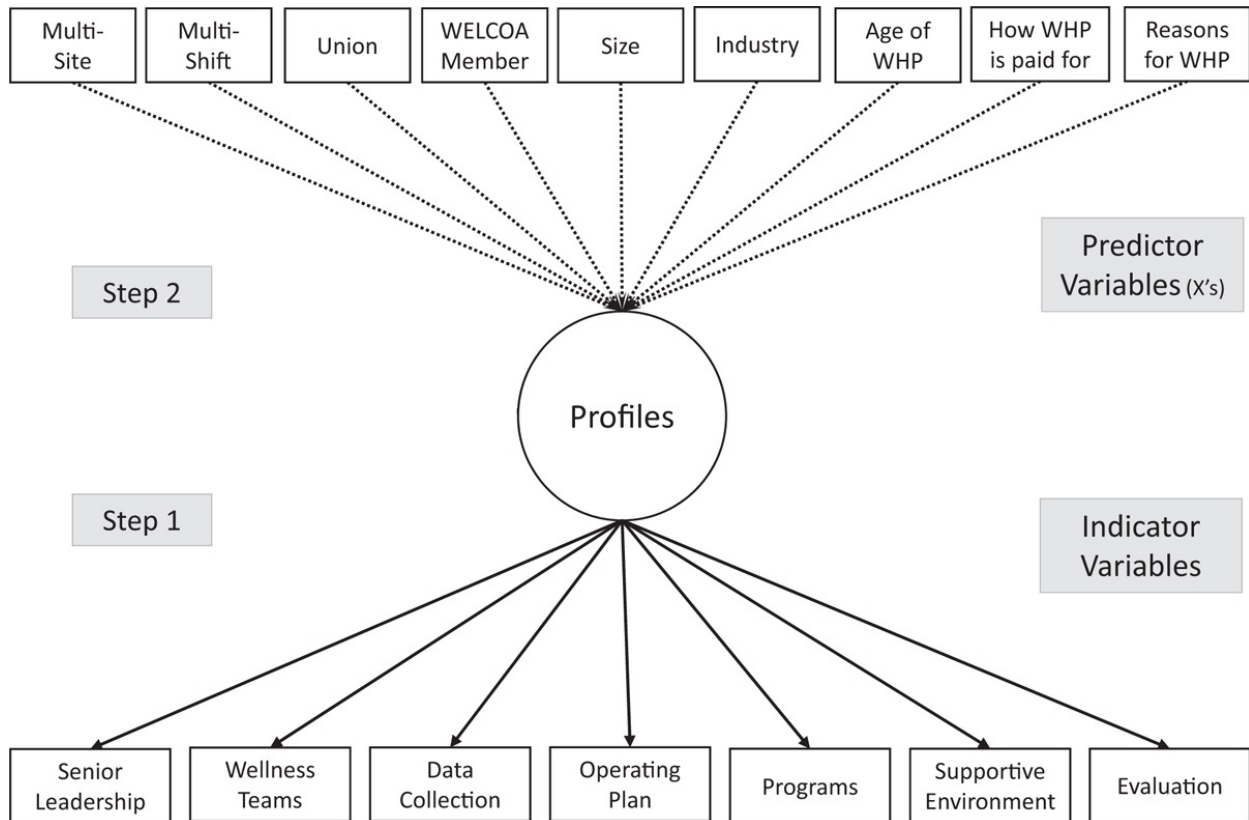


Figure 1. Model for the latent profile analysis and multinomial logistic regression analysis.

In addition to measures of performance that were used in the latent profile analysis (LPA), the data set also included measures of the characteristics of organizations and their WHP initiatives to be used as predictors of subgroup membership. Those measures were size, industry type, union status, shift work, and multiple worksites. Organizations indicated their size by selecting a category that represented the number of employees in their organization. Organizations selected one of 11 listed categories or wrote in their response for their industry type. Given its representation of about half of the sample, Services was chosen as the referent group for industry type. WELCOA also provided data indicating the status of WELCOA membership for all participating organizations by year. With regard to WHP initiatives, data included the age of WHP initiatives, how initiatives are paid for, and organizations' top reasons for implementing

WHP initiatives. For this study, reasons were grouped into health-, cost-, performance-, and morale-related reasons.

Analysis

LPA was conducted to extract subgroups of performance profiles against WELCOA's seven benchmarks. LPA is a person-centered analysis that extracts subgroups based on similar characteristics of persons or, in this case, organizations. LPA was used to discern whether there were subgroups of organizations based on their performance across all benchmarks and then estimates the probability of subgroup assignment for each organization in the sample. Recommendations for proper fitting of this model were followed according to Masyn¹⁴ and Marsh.¹⁵ Fit indices, such as the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Entropy, and the Lo–Mendell–Rubin, were used to determine the appropriate number of profiles. To test reliable differences among means of individual benchmark scores across subgroups, Wald tests were conducted as pairwise comparisons across all benchmarks between each of the subgroups of performance profiles.¹⁵

Figure 1 illustrates the two analytical steps for this study. The first step was the LPA to extract subgroups of organizations based on their benchmark scores. The second step was the multinomial logistic regression analysis (LRA) to examine the relationship between the characteristics of organizations and their likely subgroup designation. The multinomial LRA was conducted using the Vermunt Method,¹⁶ which allowed for both the LPA and the logistic regression analysis to account for covariates in the model fit indices and accounts for organizations' probability of subgroup assignment in the LRA.¹⁷ Organizational characteristics were included in the analysis as predictor variables to examine the relationship between those predictor variables and an organizations' subgroup of performance based on the LPA. All analyses were performed using MPLUS (v8.1).¹⁸

Table 1. Characteristics of Organizations (*N*=3728)

Characteristics	<i>N</i> (%) or Mean ± SD
Multisite	2,699 (72.4)
Multishift	2,449 (65.7)
Unionized	1,000 (26.8)
WELCOA members	1,416 (38.0)
Number of employees	
Up to 100	867 (23.3)
101–1,000	1,785 (47.9)
Over 1000	1,076 (28.9)
Industry	
Services	1,861 (49.9)
Manufacturing	573 (15.4)
Communication	59 (1.6)
Agricultural	30 (0.8)
Mining	17 (0.5)
Construction	75 (2.0)
Wholesale/Retail	148 (4.0)
Transportation	62 (1.7)
Utilities	221 (5.9)
Finance	222 (6.0)
Government	347 (9.3)
Other	113 (3.0)

RESULTS

Sample Characteristics

Table 1 shows the characteristics of the 3728 organizations that were included in the sample. The majority were multiple-site (72.4%), multiple-shift (65.7%), or nonunionized (73.2%) organizations. Just under 25% were organizations with 100 or fewer employees and almost 30% were organizations with more than 1000 employees. Almost half of these organizations were in the services industry.

Table 2 describes some of the characteristics of these organizations' WHP initiatives. For more than half of these organizations, WHP initiatives were either just getting started or had been established for just 1 to 3 years. In addition, more than half of the organizations reported employers paying all costs for their WHP initiatives. The two most frequent reasons for implementing WHP initiatives were (1) to improve employee health and (2) to contain costs. Finally, the average benchmark scores for this sample were lowest among senior leader support and highest among supportive environments and wellness teams.

Table 2. Characteristics of WHP Initiatives for Organizations ($N=3728$)

Characteristics	N (%) or Mean \pm SD
How long initiative has been in place	
Just started	1,112 (29.8)
1–3 yrs	1,317 (35.3)
4–10 yrs	912 (24.5)
More than 10	387 (10.4)
Pay structure for wellness programs	
Employees or other	640 (17.2)
Shared costs	1,101 (29.5)
Company	1,987 (53.3)
Reasons for implementing WHP initiatives*	
<i>Health-related reasons for wellness</i>	3,247 (87.1)
Improve employee health	2,531 (67.9)
Improve health of dependents	436 (11.7)
Improve health of retirees	15 (0.4)
Increase health self-management	696 (18.7)
<i>Cost-related reasons for wellness</i>	2,423 (65.0)
Contain costs	2,187 (58.7)
Produce ROI	177 (4.7)
Reduce unnecessary medical use	253 (6.8)
<i>Performance-related reasons for wellness</i>	386 (10.4)
Increase performance	172 (4.6)
Enhance productivity	162 (4.3)
Reduce absenteeism	120 (3.2)
<i>Morale-related reasons for wellness</i>	796 (21.4)
Improve morale	443 (11.9)
Attract and retain employees	236 (6.3)
Employee requests	204 (5.5)
Average benchmark scores	
Senior leader support score	39.98 \pm 21.30
Wellness teams score	52.06 \pm 19.52
Data collection score	42.01 \pm 22.70
Operating plan score	48.18 \pm 36.44
Programming score	40.94 \pm 21.31
Supportive environments score	54.22 \pm 18.15
Evaluation score	42.93 \pm 30.89

*Organizations chose their top reasons for implementing WHP initiatives from the list shown here. Without rank ordering or limits on the number of reasons that could be chosen, these reasons were grouped into categories of health, cost, performance, and morale for the LPA and logistic regression analysis.

Latent Profile Analysis

The LPA was used to examine patterns of scores across all benchmarks for all organizations and group organizations together based on the similarity of the patterns of their benchmark scores. Table 3 shows the goodness of fit based on the number of subgroups extracted in the LPA model. Although the Lo–Mendell–Rubin suggested that a five-profile solution may be better than a four-profile solution, other fit indices suggested a three-profile solution. Given that the five-profile solution included a subgroup of only 2% of organizations and Entropy was higher with three subgroups, the three-profile solution was chosen for this study.

Table 3. Goodness of Fit for Latent Profile Analysis Based on Number of Subgroups

No. of Subgroups	AIC	BIC	LMR	Entropy	Number of Subgroups With <5%
2	221,899.2	222,166.8	0.001	0.845	0
3	221,313.4	221,630.8	0.001	0.876	0
4	221,261.4	221,628.6	0.228	0.881	1
5	220,920.7	221,337.7	0.043	0.872	1
6	220,877.9	221,344.7	1	0.848	2

AIC, Akaike’s Information Criterion; BIC, Bayesian Information Criterion; LMR, Lo–Mendell–Rubin likelihood.

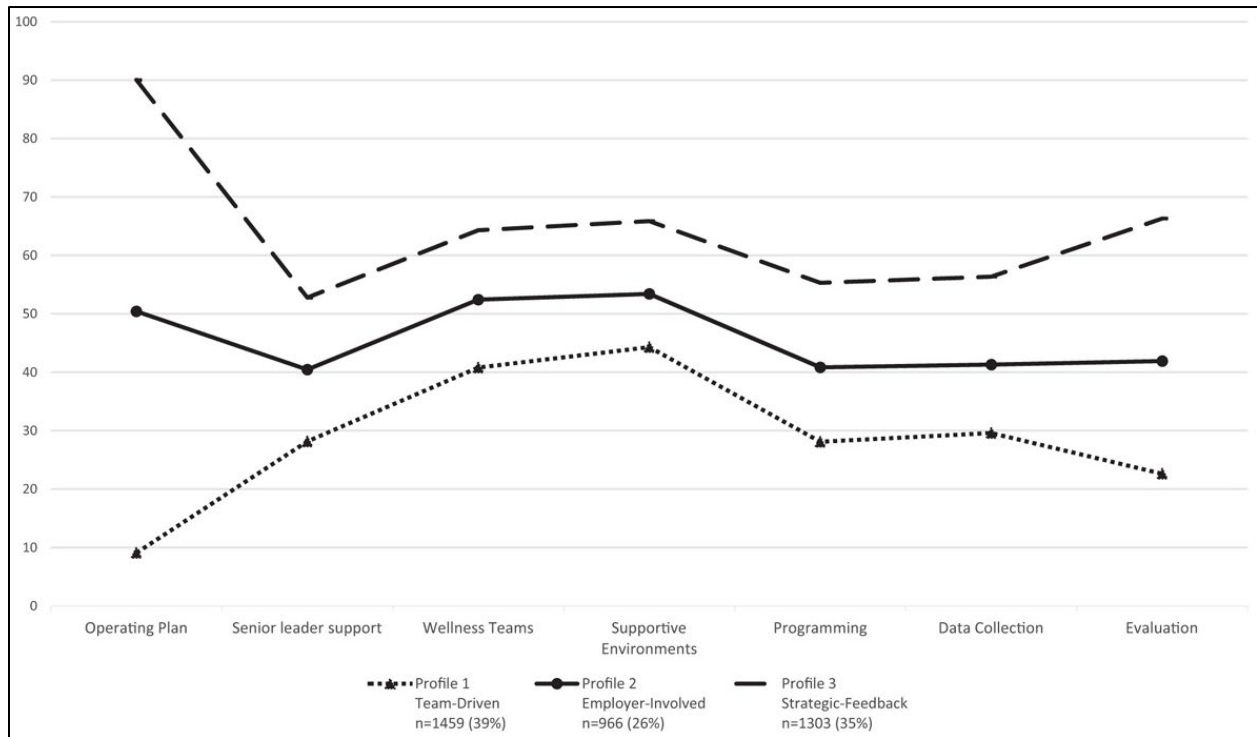


Figure 2. Differences in average benchmark scores for performance profiles.

Figure 2 shows the average benchmark scores for each of the three subgroups of performance. These subgroups represent organizations’ patterns of performance against quality benchmarks for WHP initiatives. There were distinguishing characteristics of performance profiles which set them apart from the others, specifically with regard to operating plan and evaluation. There were relatively greater differences between subgroups among average benchmark scores for operating

plan and evaluation. Furthermore, Wald tests results indicated significant differences in mean scores for all benchmarks between subgroups.

In profile 1, operating plan was the lowest average benchmark score and the two highest average benchmark scores for this subgroup were supportive environments and wellness teams. Even though average benchmark scores were lower in this profile, actions were still being taken to implement WHP initiatives among these organizations. The pattern of performance against benchmarks in this profile suggested that employee wellness teams are in place without clear plans or strategies for WHP initiatives. Given that profile 1 had a markedly low average benchmark score for operating plan with the highest average benchmark score being wellness teams, it was identified as the Team-Driven profile.

Profile 2 was labeled as the Employer-Involved profile. All average benchmark scores in this subgroup ranged from around 40 to 53, indicating effort being made across all benchmarks. Although supportive environments and wellness teams were still the highest average benchmark scores, operating plan became the third highest average benchmark score for this subgroup. This distinction from profile 1 suggested that organizations in this profile not only have higher scores across benchmarks but also have considerably more employer interest in having a strategic plan and commitment to integrate wellness.

In profile 3, all average benchmark scores were above 50, with operating plan and evaluation as the highest average benchmark scores. The average score for operating plan was 90, much higher than all other average benchmark scores, indicating that wellness is well integrated into business plans, goals, and strategies. This profile was labeled as the Strategic-Feedback profile because of the integration of and forethought in planning for WHP initiatives, as demonstrated by the two highest average scores for operating plan and evaluation.

Logistic Regression Analysis

LRA was conducted to examine the relationships between the characteristics of organizations and the organizations' performance subgroup. Results are presented with odds ratios in Table 4. These results suggested that the size or industry of an organization may be predictive of their performance subgroup assignment. In addition, multiple characteristics of WHP initiatives were significantly associated with subgroups of performance.

Regarding the characteristics of the organizations, there were no significant relationships between performance subgroups and organizations' status as multisite, multishift, or unionized. Related to the size of organizations, those with 100 or fewer employees were more likely to be in the Team-Driven profile than organizations with more employees. Organizations with 101 to 1000 employees were also less likely to be in Employer-Involved and Strategic-Feedback profiles compared with organizations with more than 1000 employees. In addition to size, organizations that identified as manufacturing, transportation, or retail industries were less likely than services industries to be in the Strategic-Feedback profile compared with the Team-Driven profile. Retail and transportation industries were also more likely to be in the Strategic-Feedback than the Employer-Involved profile compared with services. In addition, organizations that were

classified as other industry types were more likely than those in services to be in the Employer-Involved than the Team-Driven or Strategic-Feedback subgroups.

Table 4. Logistic Regression for Performance Profiles With Organizational Characteristics

	Profile 1 as Referent		Profile 2 as Referent
	Profile 2	Profile 3	Profile 3
Multisite	0.96	0.97	1.01
Multishift	0.97	1.16	1.19
Unionized	0.87	0.96	1.11
WELCOA member	1.14	1.54***	1.35**
Number of employees			
Up to 100	0.59**	0.40***	0.68*
101–1,000	0.77*	0.52***	0.67**
Over 1,000	—	—	—
Industry			
Services	—	—	—
Manufacturing	0.90	0.75*	0.83
Communication	1.17	0.84	0.72
Agricultural	2.53	1.79	0.71
Construction	1.58	0.53	0.84
Wholesale/Retail	1.03	0.58*	0.56*
Transportation	1.31	0.44*	0.34**
Utilities	1.11	1.05	1.17
Mining	1.02	0.61	0.60
Finance	0.98	1.14	1.16
Government	0.89	0.78	0.88
Other	2.06**	1.11	0.54*
How long initiatives in place			
Just started	—	—	—
1–3 yrs	2.38***	4.05***	1.70***
4–10 yrs	2.57***	5.62***	2.19***
10+ yrs	2.48***	5.34***	2.15***
Pay structure for WHP			
Employees or other	—	—	—
Shared costs	1.82***	1.96***	1.07
Company	2.19***	2.59***	1.18
Health-related reasons	1.07	1.46*	1.37
Costs-related reasons	0.85	0.85	1.00
Performance-related reasons	0.94	1.28	1.36
Morale-related reasons	1.04	1.00	0.96

Results reported in odds ratios. Profile 1, Team-Driven; Profile 2, Employer-Involved; Profile 3, Strategic-Feedback.

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$.

Results of the LRA suggest that organizations that were members of WELCOA were most likely to be in the Strategic-Feedback profile. In fact, when controlling for all other covariates, organizations that were members of WELCOA were 1.54 times more likely to be in the Strategic-Feedback than the Team-Driven subgroup compared with nonmembers. In addition, organizations with WHP initiatives that were paid for either partially or fully by the employer, rather than initiatives that were paid for by employees or other sources, were more likely to be in the Employer-Involved and Strategic-Feedback profiles than the Team-Driven profile. Thus, the investment of time and resources in WHP initiatives by employers seems to be associated with improved quality.

Compared with organizations that were just getting started, organizations with WHP initiatives in place for 1 year or longer were more likely to be in the Employer-Involved or Strategic-Feedback profiles than the Team-Driven profile, and more likely to be in the Strategic-Feedback than the Employer-Involved subgroup. The reasons that organizations indicated for

implementing WHP initiatives seemed to be mostly unrelated to their subgroup of performance against benchmarks. However, there was a significant relationship suggesting that organizations with a health-related reason for implementing WHP initiatives were more likely to be in the Strategic-Feedback profile than the Team-Driven profile.

DISCUSSION

This study addresses an important gap in the literature by conducting finer-grained analyses to illustrate expected profiles of performance against quality benchmarks for different types of US organizations. LPA was used to extract three subgroups of organizations characterized by their profiles of performance against quality benchmarks, which were classified as Team-Driven, Employer-Involved, and Strategic-Feedback profiles. These performance profiles provide information regarding the structures and processes that are in place to support organizations' WHP initiatives. Multinomial logistic regression analysis was also used to determine characteristics that predict organizations' likely performance profiles. By doing so, this study provides valuable insights for tailoring support and resources to different types of organizations striving to improve their WHP initiatives.

Organizations that were just getting started with WHP initiatives were most likely to be in the Team-Driven subgroup, which was characterized by employee wellness teams in place without the support of strategic plans or goals implemented across all levels of the organization. Performance against benchmarks for this subgroup suggests that wellness is not yet a priority or strategy for the organization, as demonstrated by the low mean scores for operating plans. Thus, the readiness of the organization to implement WHP initiatives may be low. It could be that this subgroup represents organizations that started WHP initiatives at the request of employees who volunteered to lead the effort. It is also possible that this subgroup represents initial performance among organizations that are planning for continued improvement of WHP initiatives, given that this subgroup includes organizations that were just getting started with WHP initiatives. Perhaps these organizations were unsure of where to start and completed the self-assessment as a strategy to get ideas for strategies to improve their WHP initiatives. Future research could examine changes in benchmark performance profiles over time to determine if organizations in this subgroup do improve performance over time.

Smaller organizations were also most likely to be in the Team-Driven subgroup. This aligns with prior findings which suggest that smaller organizations are less likely to be implementing quality WHP initiatives.^{2,5,9-12} Although benchmarks suggest wellness teams are an important component of quality WHP initiatives, strategic planning and the integration of wellness within the organization may be equally important.^{5-8,19,20} Thus, organizations in this subgroup may benefit from taking actions to improve performance against other benchmarks. However, this may be dependent upon resources that are available to invest in WHP initiatives. For instance, smaller organizations may have increased challenges related to organizational slack, resources, capacity, or readiness to support more extensively developed WHP initiatives.^{4,10-12} Knowing that resources may be limited, there may be a need to develop quality indicators specific to smaller organizations. This may help to identify potential areas for improvement within the bounds of what is feasible or even strategies for resource sharing across smaller organizations. It

may be important to couple assessments of WHP quality with assessments for readiness and capacity to implement WHP initiatives.^{21,22}

On the contrary, organizations that reported paying some or all costs for WHP initiatives were least likely to be in the Team-Driven subgroup compared with the higher performing Employer-Involved and Strategic-Feedback subgroups. Compared with the Team-Driven profile, the Employer-Involved profile was characterized by higher mean benchmark scores that suggested more integration of wellness in business operating plans and strategies. The Strategic-Feedback profile had the highest mean benchmark scores, suggesting purposeful integration of wellness across multiple components within the organization as well as a planned evaluation of WHP initiatives. Thus, these results suggest that organizations with more resources invested in WHP initiatives are likely to perform higher against quality benchmarks.

In addition, organizations with an active WELCOA membership were most likely to be in the Strategic-Feedback subgroup. It is possible that WELCOA members are more likely to be in the Strategic-Feedback subgroup based on the availability of financial resources to invest in WHP initiatives, including payment for membership to WELCOA. Connecting to a third-party agency like WELCOA may also demonstrate a viable commitment to improving WHP while gaining access to strategies and resources to do so. Although we lack data regarding the length of time that organizations had active memberships or the utilization of membership resources before filling out the checklist, we do know that WELCOA membership offers access to resources, programs, and other supports that are mostly structured around WELCOA's seven benchmarks which could be a contributing factor for higher benchmark performance.

Although the investment of resources in WHP initiatives may depend upon the capacity and availability of resources within the organization, an investment made by employers may convey their value in the wellness of their employees. Findings from an Optum survey indicate that companies with a “culture of health” have committed to a budget for health and wellness as well as invested in health and wellness incentives for employees.²³ Conveying health-related reasons as the value proposition for implementing WHP initiatives could encourage a culture of health within organizations. Organizations that reported a health-related reason for implementing WHP initiatives were most likely to be in the Strategic-Feedback subgroup compared with the Team-Driven subgroup. Although organizations could choose a multitude of reasons for implementing WHP initiatives, indicating health-related reasons may suggest a humanitarian approach rather than a revenue or business-focused value proposition. Establishing a culture of health within organizations is also thought to produce additional outcomes of interest.^{7,23,24}

Finally, in alignment with prior research, this study also found that WHP initiatives differ across organizations' industry type.^{9,10,13} For example, organizations in the services industry were more likely to be in the Strategic-Feedback subgroup than organizations in manufacturing, retail, and transportation industries. Compared with the services industry, employees in these industries may be more segmented in their positions or locations making it more difficult to organize people together. Therefore, these industries may have more difficulty with organizing and implementing WHP initiatives based on contextual challenges, such as having employees spread across different areas at varying times. Thus, in addition to resources, capacity, and readiness,

addressing contextual challenges in future research could provide insights leading to tailored support to organizations that are seeking to improve the quality of their WHP initiatives.

Limitations

These subgroups of performance profiles may only be representative of performance that we could expect to see for organizations that are interested in assessing their WHP initiatives. Regardless, these profiles offer new insights related to organizations' patterns of performance against quality benchmarks across a period of 8 years. Although these benchmarks act as guidelines for developing quality WHP initiatives, they have not been validated against outcomes or quality indicators. Despite these performance profiles representing what seems to be low-, medium-, or high-quality WHP initiatives, they only truly represent levels of performance against benchmarks. In addition, measurement and scaling of the WWC could have contributed to the extent of distinction between profiles for the operating plan and evaluation benchmarks, as these benchmarks were the only two that consisted of questions with binary response options only. Nevertheless, these subgroups of performance characterize WHP initiatives using expected performance against benchmarks that were self-assessed by organizations using the WWC.

CONCLUSION

This study depicts profiles of performance against WELCOA's seven benchmarks, highlighting specific benchmarks that may need attention among different types of organizations that are interested in assessing and/or improving the quality of their WHP initiatives. For instance, smaller organizations and those in specific industries could be important targets for providing support specific to operating plans and may benefit from networks or partnerships to support the sharing of resources. These subgroups of performance and the characteristics of organizations associated with varying profiles may also reinforce the notion for a need to amend quality assessments to make them specific to different industry types and for organizations with varying resource limitations. Such assessments may prove useful for further tailoring the supports that are offered to organizations.

This study also highlights the need for continued research related to quality benchmarks for WHP initiatives. For instance, research could explore how these benchmarks relate to variations in organizations' capacity for implementing WHP initiatives. With a smaller population of employees, perhaps smaller organizations do not need the same organizational development structure as larger organizations to have a quality WHP initiative. As noted above, research could also assess whether smaller organizations need a separate set of quality benchmarks that are more in line with their capacity and business models. It may also be useful to explore the feasibility of resource-rich organizations to achieve high scores across all quality benchmarks capacity. Given the distinctions in operating plans across performance profiles, research may also need to explore factors associated with increasing organizations' commitment to strategically integrate wellness-related goals and objectives with their missions, visions, and business models. Finally, research could benefit from exploring outcomes associated with performance. Understanding how benchmarks are associated with various outcomes or value propositions may help employers and employees commit to, invest in, and strive for quality WHP initiatives that meet their health and wellness goals.

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