

## CREATIVE AND COLLECTIVE SOCIAL MARKETING ORIENTATIONS AS DRIVERS OF PHYSICAL ACTIVITY BEHAVIOR: MEDIATING ROLE OF SELF-EFFICACY

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### Abstract

Physical inactivity remains a significant public health concern among government employees, who are often exposed to sedentary working conditions. This study aimed to examine the effects of Creative Social Marketing Orientation (Creative SMO), Collective Social Marketing Orientation (Collective SMO), and Self-Efficacy (SE) on Physical Activity Behavior (PAB) among government employees in West Java, Indonesia. A quantitative cross-sectional survey was conducted involving 276 employees from provincial, district, and city governments. Data were collected using structured questionnaires and analyzed using Structural Equation Modeling (PLS-SEM). The results demonstrated that creative SMO had a positive and significant direct effect on PAB, while Collective SMO showed no significant direct effect. SE was found to be a significant predictor of PAB. In addition, SE significantly mediated the relationships between both Creative SMO and PAB and Collective SMO and PAB. These findings highlight the critical role of SE as a psychological mechanism through which SMO influence PAB. Creative SMO can promote physical activity both directly and indirectly, whereas collective- SMO primarily operate through enhanced SE. The findings also provide practical implications for workplace health promotion programs that seek to foster active lifestyles through creative, participatory, and supportive organizational environments.

**Keywords:** Collective Social Marketing Orientation, Creative Social Marketing Orientation, Physical Activity Behavior, Self-Efficacy

### INTRODUCTION

Over the past several decades, rapid advances in information and communication technology, automation, and digital transformation have fundamentally reshaped the nature of work worldwide. Organizations in both the public and private sectors have increasingly transitioned from labor-intensive occupations to knowledge-based and technology-driven jobs. As a result, employees now spend a substantial proportion of their working hours sitting in front of computers and digital devices while

performing administrative, managerial, and professional tasks (Calderwood et al., 2021; Meiden et al., 2019). Although these technological developments have improved efficiency, productivity, and communication, they have also contributed to a significant increase in sedentary behavior in the workplace (Thivel et al., 2018).

Sedentary behavior refers to any waking activity characterized by an energy expenditure of 1.5 metabolic equivalents (METs) or less while sitting, reclining, or lying down (Kauce et al., 2024; Thivel et al., 2018). Office employees, including government employees, are among the occupational groups most vulnerable to prolonged sedentary behavior because their work often involves extensive computer use, document processing, meetings, and other desk-based activities. Contemporary work arrangements, including digital administration systems and online communication platforms, have further reduced opportunities for movement during working hours. Consequently, sedentary behavior has emerged as a major public health concern that extends beyond occupational health and affects broader societal well-being.

The health consequences of prolonged sedentary behavior are substantial and well documented. Research consistently demonstrates that insufficient physical activity and excessive sitting are associated with increased risks of obesity, cardiovascular disease, type 2 diabetes, hypertension, metabolic syndrome, musculoskeletal disorders, and certain forms of cancer (Calderwood et al., 2021; Kauce et al., 2024; Thivel et al., 2018; Meiden et al., 2019). Furthermore, prolonged sitting has been linked to increased all-cause mortality, independent of engagement in moderate-to-vigorous physical activity. These findings indicate that sedentary lifestyles represent a significant burden on healthcare systems and reduce the quality of life of affected individuals. Consequently, promoting physical activity has become a strategic priority for governments, public health agencies, and organizations seeking to improve employee health and productivity.

Physical activity behavior encompasses any bodily movement produced by skeletal muscles that results in energy expenditure above resting levels (WHO, 2018). Regular participation in physical activity provides numerous physiological and psychological benefits, including improved cardiovascular fitness, enhanced musculoskeletal strength, reduced risk of chronic diseases, improved mental health, and increased longevity (Kauce et al., 2024; Thivel et al., 2018). In addition to individual health benefits, physically active employees often demonstrate greater productivity, lower absenteeism, higher job satisfaction, and improved overall work performance. Therefore, increasing physical activity among government employees is not only a public health objective but also an organizational and economic priority.

Recognizing the importance of physical activity, the Indonesian government has introduced several initiatives aimed at promoting healthier lifestyles among citizens and public-sector employees. One of the most prominent programs is the Healthy Community Movement (Gerakan Masyarakat Hidup Sehat or GERMAS), which encourages regular physical activity,

healthy eating, and preventive health behaviors (Kemenkes RI, 2017). In addition, many government institutions implement routine workplace exercise programs, such as mandatory Friday morning exercise sessions. Despite these efforts, evidence suggests that physical inactivity remains prevalent among government employees, indicating that existing interventions have not fully achieved sustained behavioral change (Anggraeni et al., 2024). This situation suggests the need for more innovative and comprehensive approaches that address the broader determinants of physical activity behavior.

One important limitation of many traditional health promotion programs is their predominant focus on downstream interventions that target individuals after unhealthy behaviors have already developed (Baloch, 2022; Gordon et al., 2022). Such approaches often emphasize information dissemination and health education while paying insufficient attention to environmental, social, and organizational factors that influence behavior. Increasingly, scholars argue that physical inactivity should be viewed as a complex or “wicked” problem that emerges from the interaction of multiple determinants operating at individual, social, organizational, and policy levels (Onagbiye & Bester, 2022). . Addressing such complexity requires more comprehensive strategies capable of influencing both personal motivation and the broader environments in which behaviors occur.

Social marketing provides a promising framework for addressing complex health challenges because it applies marketing principles and techniques to influence behaviors that benefit individuals and society. Contemporary social marketing has evolved beyond communication campaigns and now incorporates systems thinking, stakeholder engagement, environmental change, and policy interventions (Hastings & Domegan, 2023). Within this broader perspective, creative and collective social marketing orientations have emerged as particularly relevant approaches for promoting sustainable health behavior change.

A creative social marketing orientation emphasizes innovation, imagination, and audience-centered design to develop engaging interventions that encourage behavioral change. Rather than relying solely on informational messages, creative approaches seek to increase participation, enjoyment, and intrinsic motivation through novel communication strategies, gamification, digital technologies, and personalized experiences (Hastings & Domegan, 2018, 2023). Emerging evidence suggests that innovative digital interventions, including smartphone applications, wearable devices, and interactive health platforms, can effectively increase physical activity participation by enhancing motivation, self-monitoring, and behavioral engagement (Damaševičius et al., 2022; Pradal-Cano et al., 2020). Furthermore, studies indicate that creativity-oriented interventions may contribute to improved physical fitness outcomes by encouraging individuals to adopt more active lifestyles in enjoyable and meaningful ways (Latorre Román et al., 2017).

Complementing individual-level innovation, a collective social marketing orientation emphasizes the importance of social systems, community engagement, environmental support, and collaborative action. This perspective recognizes that individual behavior is shaped by social norms, organizational culture, physical infrastructure, and policy environments. Consequently, collective-oriented interventions seek to create supportive ecosystems that facilitate healthy choices and reduce barriers to physical activity (Hastings & Domegan, 2023, 2018). Previous research demonstrates that community-based initiatives, social support networks, workplace wellness programs, and active transportation policies can significantly increase physical activity participation (Alghannam et al., 2023). Similarly, investments in supportive infrastructure, such as walking paths, bicycle lanes, recreational facilities, and workplace exercise programs, have been shown to encourage routine physical activity and active transportation behaviors (Barradas et al., 2022).

While creative and collective social marketing orientations provide important environmental and organizational influences, their effectiveness ultimately depends on how individuals perceive and respond to these interventions. Social Cognitive Theory offers a useful framework for understanding this process by emphasizing the reciprocal interaction among personal, environmental, and behavioral factors (Bandura, 1986). Within this theoretical framework, self-efficacy occupies a central position. Self-efficacy refers to an individual's belief in their capability to organize and execute the actions necessary to achieve desired outcomes (Bandura, 1997). Individuals with high self-efficacy are more likely to initiate physical activity, persist in the face of challenges, and maintain healthy behaviors over time.

Extensive empirical evidence identifies self-efficacy as one of the strongest predictors of physical activity behavior across diverse populations, including adolescents, adults, office workers, and clinical groups (Blom et al., 2021). Moreover, self-efficacy frequently serves as a mediating mechanism through which environmental and organizational interventions influence behavioral outcomes. Supportive environments, innovative health promotion programs, and social support systems may increase individuals' confidence in their ability to be physically active, which subsequently enhances actual participation in physical activity (Jiang et al., 2019). Consequently, self-efficacy represents a critical psychological pathway linking social marketing interventions to behavioral change.

Despite growing interest in social marketing and physical activity promotion, limited research has examined how creative and collective social marketing orientations influence physical activity behavior among government employees, particularly in developing-country contexts. Furthermore, few studies have investigated the mediating role of self-efficacy in these relationships. To address these gaps, the present study integrates Social Cognitive Theory and social marketing perspectives to develop a

comprehensive framework for understanding physical activity behavior among Indonesian government employees.

Specifically, this study aims to examine: (1) the direct effect of Creative Social Marketing Orientation on Physical Activity Behavior; (2) the direct effect of Collective Social Marketing Orientation on Physical Activity Behavior; (3) the direct effect of Self-Efficacy on Physical Activity Behavior; (4) the mediating effect of Self-Efficacy on the relationship between Creative Social Marketing Orientation and Physical Activity Behavior; and (5) the mediating effect of Self-Efficacy on the relationship between Collective Social Marketing Orientation and Physical Activity Behavior. By investigating these relationships simultaneously, this study contributes to the advancement of social marketing and health behavior theory while providing evidence-based guidance for the development of more effective workplace wellness policies and physical activity promotion programs within the public sector.

## **RESEARCH METHOD**

This study employed a quantitative research approach using a cross-sectional survey design to examine the relationships among Creative Social Marketing Orientation, Collective Social Marketing Orientation, Self-Efficacy, and Physical Activity Behavior among government employees in West Java, Indonesia. A quantitative design was selected because it enables the systematic measurement of relationships among variables through numerical data and statistical analysis, thereby providing an objective basis for testing theoretical hypotheses (Gungaphul & Boolaky, 2021). The cross-sectional approach was considered appropriate because data were collected at a single point in time to capture respondents' perceptions, beliefs, and behaviors related to physical activity, self-efficacy and social marketing orientations.

The target population consisted of all government employees employed across 33 provinces in Indonesia, totaling 3,566,141 employees (BPS-Statistics Indonesia, 2025). Given the extensive geographic distribution and large size of the population, this study adopted a purposive sampling technique. West Java Province was selected as the research setting because it represents one of the provinces with the largest population of government employees and has been actively involved in implementing public health promotion programs, including initiatives related to physical activity and healthy lifestyles (BPS-Statistics Indonesia, 2025; Kemenkes, 2019a; Kemenkes, 2019b). The final sample consisted of 276 government employees working in provincial, district, and municipal government institutions throughout West Java.

The sample size was determined according to the minimum sample size requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM). Following the recommendation of Hair et al. (2022), the minimum sample size was calculated using the formula:  $n_{min} > (2.486/\beta_{min})^2$ , where  $n_{min}$  represents the minimum sample size and  $\beta_{min}$  represents the minimum anticipated path coefficient. In this study,

$\beta_{\min}$  was estimated at 0.15, indicating that the sample of 276 respondents exceeded the minimum requirement and was adequate for robust model estimation and hypothesis testing.

Data were collected using structured questionnaires administered through both online and offline channels to maximize participation and accessibility. The questionnaire consisted of closed-ended items measured on a five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). This scaling approach was chosen because it facilitates the measurement of attitudes, perceptions, and behavioral tendencies while enhancing response consistency and statistical reliability (Hair et al., 2022). Prior to data analysis, responses were screened to ensure completeness and suitability for further statistical procedures.

The study examined four latent constructs: Creative Social Marketing Orientation, Collective Social Marketing Orientation, Self-Efficacy, and Physical Activity Behavior. Creative Social Marketing Orientation reflects the extent to which organizations employ innovative, engaging, and audience-centered approaches to promote healthy behaviors. Collective Social Marketing Orientation refers to the emphasis on social support, stakeholder collaboration, environmental facilitation, and collective action in behavior change initiatives. Self-Efficacy represents individuals’ confidence in their ability to engage in and maintain physical activity, while Physical Activity Behavior refers to the extent of respondents’ participation in regular physical activity.

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was selected because it is particularly suitable for predictive and exploratory research, accommodates complex structural relationships among multiple latent variables, performs well with moderate sample sizes, and does not require multivariate normality assumptions (Hair et al., 2022). The analysis followed a two-stage procedure. First, the measurement model was evaluated by assessing indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Second, the structural model was assessed through path coefficients, coefficients of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and mediation analysis to test the proposed hypotheses (Hair et al., 2022).

## **RESULTS AND DISCUSSION**

### **Results**

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is widely recommended for predictive and exploratory studies involving complex relationships among latent variables (Hair et al., 2022).

The measurement model assessment focused on indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. According to Hair et al. (2022), reflective constructs should demonstrate satisfactory levels of indicator

reliability, internal consistency reliability, convergent validity, and discriminant validity before structural relationships can be interpreted.

**Table 1. Internal Reliability, Convergent Validity, and Internal Consistency Reliability**

VARIABLE	MEASUREMENT MODEL			
	INTERNAL RELIABILITY/ LOADING FACTOR		CONVERGENT VALIDITY/ AVE	COMPOSITE RELIABILITY/ CR
INDICTOR	FACTOR LOADING			
<b>CREATIVE SOCIAL MARKETING ORIENTATION (CREASMO)</b>	OCR1	0.731	0.419	0.895
	OCR2	0.736		
	OCR3	0.736		
	OCR4	0.676		
	OCR5	0.658		
	OCR6	0.621		
	OCR7	0.469		
	OCR8	0.591		
	OCR9	0.517		
	OCR10	0.587		
	OCR11	0.636		
	OCR12	0.740		
<b>COLLECTIVE SOCIAL MARKETING ORIENTATION (COLSMO)</b>	OCO1	0.634	0.387	0.917
	OCO2	0.687		
	OCO3	0.665		
	OCO4	0.753		
	OCO5	0.691		
	OCO6	0.516		
	OCO7	0.516		
	OCO8	0.436		
	OCO9	0.470		
	OCO10	0.637		
	OCO11	0.568		
	OCO12	0.533		
	OCO13	0.522		
	OCO14	0.565		
	OCO15	0.720		
	OCO16	0.772		
	OCO17	0.662		
	OCO18	0.682		
<b>SELF-EFFICACY (SELF-EFIC)</b>	SE1	0.739	0.526	0.899
	SE2	0.746		
	SE3	0.753		
	SE4	0.690		

	SE5	0.667		
	SE6	0.676		
	SE7	0.734		
	SE8	0.787		
<b>PHYSICAL ACTIVITY BEHAVIOR (PHYSAB)</b>	PA1	0.740	0.456	0.832
	PA2	0.618		
	PA3	0.631		
	PA4	0.609		
	PA5	0.806		
	PA6	0.624		

(Source: primary data analysis results)

As shown in Table 1, the factor loadings for Creative Social Marketing Orientation ranged from 0.469 to 0.740, indicating that most indicators contributed adequately to the measurement of the construct. Similarly, Collective Social Marketing Orientation exhibited factor loadings ranging from 0.436 to 0.772. Self-Efficacy demonstrated stronger indicator reliability, with loadings ranging from 0.667 to 0.787, while Physical Activity Behavior showed loadings between 0.609 and 0.806.

Although several indicators displayed loadings below the ideal threshold of 0.70, they were retained because their removal would not substantially improve construct reliability and because all constructs achieved satisfactory Composite Reliability values above 0.70 (Hair et al., 2022). Composite Reliability values were 0.895 for Creative Social Marketing Orientation, 0.917 for Collective Social Marketing Orientation, 0.899 for Self-Efficacy, and 0.832 for Physical Activity Behavior. These values indicate strong internal consistency and suggest that the indicators consistently measured their intended constructs.

Convergent validity was assessed using Average Variance Extracted (AVE). Self-Efficacy achieved an AVE value of 0.526, exceeding the recommended threshold of 0.50. Although the AVE values of Creative Social Marketing Orientation (0.419), Collective Social Marketing Orientation (0.387), and Physical Activity Behavior (0.456) fell below the recommended benchmark, these values remain acceptable because the corresponding Composite Reliability values exceeded 0.70. According to Fornell & Larcker (1981), constructs may still demonstrate adequate convergent validity when Composite Reliability is sufficiently high despite AVE values below 0.50.

Discriminant validity was evaluated using the Heterotrait–Monotrait Ratio (HTMT), which is currently considered one of the most rigorous approaches for assessing construct distinctiveness in PLS-SEM (Hair et al., 2022).

**Table 2. Heterotrait-Monotrait Ratio (HTMT)**

	<b>CREASMO</b>	<b>COLSMO</b>	<b>SELF-EFIC</b>	<b>PHYSAB</b>
<b>CREASMO</b>				
<b>COLSMO</b>	0.475			

<b>SELF-EFIC</b>	0.650	0.813		
<b>PHYSAB</b>	0.471	0.388	0.581	

(Source: primary data analysis results)

As presented in Table 2, HTMT values ranged from 0.388 to 0.813. All values were below the conservative threshold of 0.85 recommended by Hair et al. (2022). The highest value (0.813) occurred between Collective Social Marketing Orientation and Self-Efficacy, yet it remained below the critical threshold. These findings confirm that the constructs were empirically distinct and measured different conceptual domains. Therefore, discriminant validity was successfully established.

Following the validation of the measurement model, the structural model was evaluated through predictive relevance ( $Q^2$ ) and explanatory power ( $R^2$ ). The  $Q^2$  values indicate that the model possessed predictive relevance because all endogenous constructs generated values above zero (Ghozali, 2021). Specifically, Self-Efficacy achieved a  $Q^2$  value of 0.336, indicating moderate predictive relevance, whereas Physical Activity Behavior yielded a  $Q^2$  value of 0.112, indicating weak but acceptable predictive relevance.

Regarding explanatory power, the adjusted  $R^2$  value for Self-Efficacy was 0.649. This indicates that Creative and Collective Social Marketing Orientations jointly explained approximately 64.9% of the variance in Self-Efficacy. According to Narimawati et al. (2020), this represents moderate explanatory power. Meanwhile, Physical Activity Behavior achieved an adjusted  $R^2$  value of 0.248, suggesting that approximately 24.8% of the variance in physical activity behavior was explained by the predictors included in the model. Although relatively modest, this level of explanation is acceptable given the complexity of physical activity behavior and the wide range of environmental, psychological, and social influences affecting such behavior.

The significance of direct and indirect relationships was assessed using path coefficients, t-values, and p-values, as reported in Table 4.

**Table 4. Hypothesis Testing Results**

Relationships	Coefficients	T-Values	p-Values	Results
1. CREASMO → PHYSAB	0,155	2,027	0,043	Supported
2. COLSMO → PHYSAB	-0,069	0,781	0,435	Not Supported
3. SELF-EFIC → PHYSAB	0,449	4,765	0,000	Supported
4. CREASMO → SELF-EFIC → PHYSAB	0.146	4.051	0.000	Supported
5. COLSMO → SELF-EFIC → PHYSAB	0.277	4.487	0.000	Supported

The results indicate that Creative Social Marketing Orientation positively influenced Physical Activity Behavior ( $\beta = 0.155$ ,  $p < 0.05$ ), supporting Hypothesis 1. Collective Social Marketing Orientation did not significantly influence Physical Activity Behavior ( $\beta = -0.069$ ,  $p > 0.05$ ), resulting in the rejection of Hypothesis 2. Self-Efficacy significantly influenced Physical Activity Behavior ( $\beta = 0.449$ ,  $p < 0.05$ ), supporting Hypothesis 3. Furthermore, Self-Efficacy significantly mediated the relationships

between Creative Social Marketing Orientation and Physical Activity Behavior ( $\beta = 0.146$ ,  $p < 0.05$ ) and between Collective Social Marketing Orientation and Physical Activity Behavior ( $\beta = 0.277$ ,  $p < 0.05$ ), supporting Hypotheses 4 and 5. Based on the structural model analysis above, the hypothesis testing results are presented in the structural model in Figure 1.

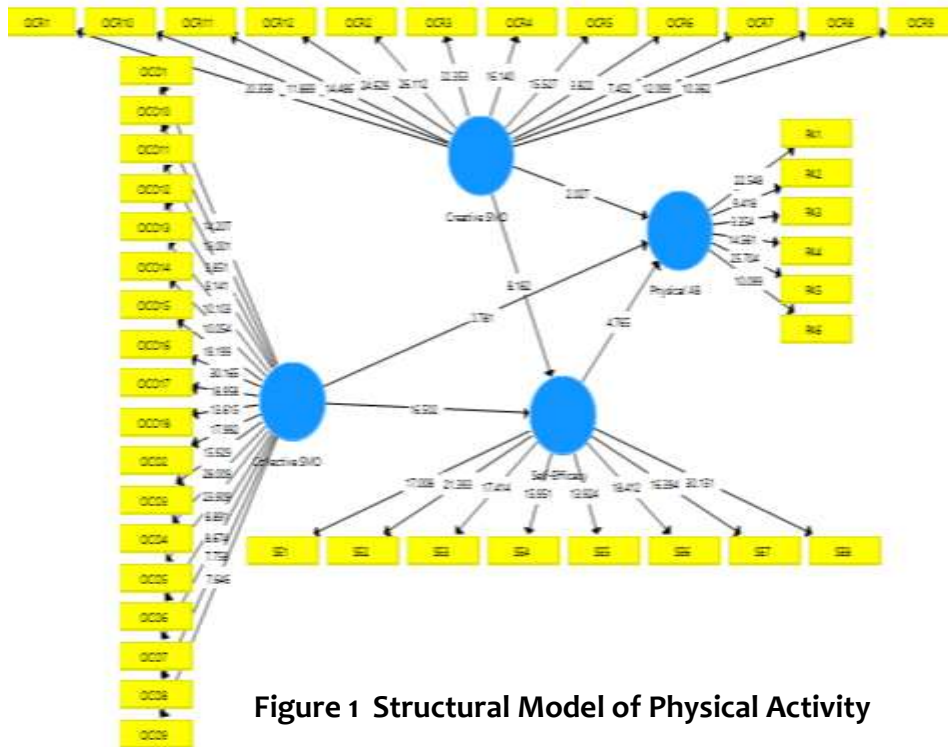


Figure 1 Structural Model of Physical Activity

## Discussion

### 1. The Effect of Creative Social Marketing Orientation on Physical Activity Behavior

The findings demonstrate that Creative Social Marketing Orientation significantly and positively influences Physical Activity Behavior among government employees. This result suggests that employees who perceive physical activity as advantageous, observable, compatible with their lifestyle, and easy to experiment with are more likely to engage in regular physical activity. These findings are consistent with innovation and diffusion theories, which emphasize the importance of relative advantage, observability, and trialability in influencing behavioral adoption (Crosby et al., 2019; García-avilés, 2020).

Creative approaches may make physical activity more appealing, enjoyable, and personally relevant. Innovative workplace campaigns, gamified health interventions, and digital fitness applications can increase engagement and encourage employees to integrate physical activity into their daily routines. Previous studies have similarly reported that creativity and innovation positively contribute to physical fitness and exercise participation (Hu & Shengyu, 2021; Latorre Román et al., 2017; Siwula, 2011).

Therefore, creative social marketing appears to be an effective mechanism for stimulating active lifestyles among public-sector employees.

## **2. The Effect of Collective Social Marketing Orientation on Physical Activity Behavior**

Contrary to expectations, Collective Social Marketing Orientation did not significantly influence Physical Activity Behavior directly. This finding suggests that environmental and collective factors alone may be insufficient to stimulate physical activity among government employees.

Several explanations may account for this result. First, employees may perceive existing environmental supports as inadequate. Limited recreational facilities, insufficient green spaces, poor pedestrian infrastructure, and workplace environments that encourage prolonged sitting can hinder active behavior despite organizational intentions (Baptista et al., 2020). Second, partnerships and collective initiatives may not necessarily translate into behavior change if employees do not personally value or prioritize physical activity. Third, social support does not always guarantee behavioral engagement. Recent evidence indicates that support from family, friends, and colleagues may not significantly predict physical activity participation in certain populations (Fahrezy et al., 2025). These findings suggest that collective approaches may require complementary psychological mechanisms before they can effectively influence individual behavior.

## **3. The Effect of Self-Efficacy on Physical Activity Behavior**

The significant effect of Self-Efficacy on Physical Activity Behavior strongly supports Social Cognitive Theory (Bandura, 1986, 1997). Self-efficacy represents an individual's confidence in their ability to organize and perform actions necessary to achieve desired outcomes. Employees with higher self-efficacy are more likely to initiate exercise, persist despite obstacles, and maintain active lifestyles over time.

The relatively strong path coefficient ( $\beta = 0.449$ ) indicates that self-efficacy is one of the most influential determinants of physical activity behavior in this study. This finding aligns with extensive literature identifying self-efficacy as a key predictor of exercise adherence and health behavior maintenance (Blom et al., 2021; Sheikh et al., 2022). Employees who believe they can successfully engage in physical activity are more likely to translate intentions into actual behavior.

## **4. The Mediating Role of Self-Efficacy on the Relationship between Creative Social Marketing Orientation and Physical Activity Behavior**

The mediation analyses reveal that Self-Efficacy serves as a critical psychological mechanism linking social marketing orientations to physical activity behavior. The significant indirect effect of Creative Social Marketing Orientation on Physical Activity Behavior through Self-Efficacy indicates that creative interventions not only influence behavior directly but also strengthen individuals' confidence in their ability to remain physically active. Innovative campaigns, visible role models, and opportunities to experiment with physical activity may increase mastery experiences and strengthen

efficacy beliefs, ultimately leading to greater behavioral participation (Bandura, 1986; Zhang et al., 2015).

### **5. The Mediating Role of Self-Efficacy on the Relationship between Collective Social Marketing Orientation and Physical Activity Behavior**

Similarly, Self-Efficacy significantly mediated the relationship between Collective Social Marketing Orientation and Physical Activity Behavior. Although collective orientation did not exert a direct effect, it influenced behavior indirectly by enhancing confidence and perceived capability. Social support, positive social norms, supportive policies, and collective experiences provide opportunities for verbal persuasion, vicarious learning, and social modeling, which are recognized sources of self-efficacy development (Bandura, 1977). These findings are consistent with previous studies demonstrating that environmental and social influences affect physical activity primarily through psychological mechanisms such as self-efficacy (Tshuma et al., 2017; Verloigne et al., 2016).

Overall, the findings support Social Cognitive Theory by demonstrating that environmental influences do not necessarily affect behavior directly. Instead, their impact is often transmitted through personal cognitive factors. Consequently, workplace health interventions should combine environmental support with strategies specifically designed to strengthen employees' self-efficacy. Such integrated approaches are likely to produce more sustainable improvements in physical activity behavior among government employees.

### **CONCLUSION**

This study examined the relationships among Creative Social Marketing Orientation, Collective Social Marketing Orientation, Self-Efficacy, and Physical Activity Behavior. through PLS-SEM analysis. The measurement model assessment demonstrated acceptable psychometric properties. All constructs achieved satisfactory composite reliability values above the recommended threshold, and discriminant validity was established through HTMT values below 0.85, indicating that the constructs were empirically distinct.

The structural model results revealed that Creative Social Marketing Orientation had a positive and significant direct effect on Physical Activity Behavior. In contrast, Collective Social Marketing Orientation did not exert a significant direct influence on Physical Activity Behavior. Self-Efficacy emerged as an important predictor of Physical Activity Behavior, showing a significant positive effect on individuals' engagement in physical activity.

The mediation analysis further demonstrated the central role of Self-Efficacy in explaining how social marketing orientations influence physical activity behavior. Self-Efficacy significantly mediated the relationship between Creative Social Marketing Orientation and Physical Activity Behavior, indicating that creative social marketing

efforts can enhance physical activity partly by strengthening individuals' confidence in their ability to perform the behavior. Similarly, Self-Efficacy significantly mediated the relationship between Collective Social Marketing Orientation and Physical Activity Behavior, suggesting that collective-oriented social marketing approaches may contribute to physical activity indirectly through improvements in self-efficacy.

Overall, the study contributes to the social marketing and physical activity literature by providing empirical evidence that Self-Efficacy serves as a key psychological mechanism linking social marketing orientations to physical activity behavior. The findings highlight the importance of incorporating creative and collective social marketing orientations and self-efficacy enhancement into efforts aimed at promoting physical activity among government employees in Indonesia, particularly in West Java province. Furthermore, the study demonstrates the differential effects of creative and collective social marketing orientations, showing that while creative orientation directly influences physical activity behavior, collective orientation operates primarily through self-efficacy.

## REFERENCES

- Alghannam, A. F., Malkin, J. D., Al-Hazzaa, H. M., AlAhmed, R., Evenson, K. R., Rakic, S., Alsukait, R., Herbst, C. H., Alqahtani, S. A., & Finkelstein, E. A. (2023). Public policies to increase physical activity and reduce sedentary behavior: a narrative synthesis of “reviews of reviews.” *Global Health Action*, 16(1), 1–11. <https://doi.org/10.1080/16549716.2023.2194715>
- Anggraeni, E. P., Putriyanti, C. E., & Yakkum, B. (2024). Tinjauan Literatur : Evaluasi Pelaksanaan Program GERMAS Nasional. *Jurnal Kesehatan*, 13(2), 2024.
- Baloch, M. S. (2022). Rethinking the Idea of Social Marketing : A Case for Upstream Social Marketing. *Journal of Development and Social Sciences*, 3(3), 479–490. [https://doi.org/10.47205/jdss.2022\(3-III\)46](https://doi.org/10.47205/jdss.2022(3-III)46)
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A. (1997). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-218.
- Baptista, N., Alves, H., & Pinho, J. C. (2020). Uncovering the Use of the Social Support Concept in Social Marketing Interventions for Health. *Journal of Nonprofit and Public Sector Marketing*, 34(1), 1–35. <https://doi.org/10.1080/10495142.2020.1760999>
- Barradas, S., Lucumí, D., Guzmán-Tordecilla, D. N., Young, J., & Pinzón, D. (2022). Built environment interventions and physical activity levels: A systematic review. *Biomedica*, 42(3), 79–88. <https://doi.org/10.7705/biomedica.6113>
- Blom, V., Drake, E., Kallings, L. V., Ekblom, M. M., & Nooijen, C. F. J. (2021). The effects on self-efficacy, motivation and perceived barriers of an intervention targeting physical activity and sedentary behaviours in office workers: a cluster randomized control trial. *BMC Public Health*, 21(1), 1–9. <https://doi.org/10.1186/s12889-021-11083-2>
- BPS-Statistics Indonesia. (2025). *Statistik Indonesia: Statistical Yearbook of Indonesia 2025*. Badan Pusat Statistik.

- Calderwood, C., ten Brummelhuis, L. L., Patel, A. S., Watkins, T., Gabriel, A. S., & Rosen, C. C. (2021). Employee Physical Activity: A Multidisciplinary Integrative Review. *Journal of Management*, 47(1), 144–170. <https://doi.org/10.1177/0149206320940413>
- Crosby, R. A., R. L. F. S., & DiClemente, R. J. (2019). Social Cognitive Theory Applied to Health Behavior. In P. Ralph J. DiClemente, P. Laura F. Salazar, & P. Richard A. Crosby (Eds.), *Health Behavior Theory for Public Health: Principles, Foundations, and Applications*. Jones & Bartlett Learning, LLC, an Ascend Learning Company.
- Damaševičius, R., Kim, J., & Dourado, V. Z. (2022). Editorial: Use of Smartphone Applications to Increase Physical Activity and Fitness. *Frontiers in Public Health*, 9(January), 2021–2022. <https://doi.org/10.3389/fpubh.2021.713306>
- Fahrezy, A. R., Ma'mun, A. A., Carsiwan, C., Syarifatunnisa, & Anira. (2025). Social support and physical activity in adolescents: evidence from a correlational approach. *Edu Sportivo*, vol 6(2).1, 140–150. <https://doi.org/10.25299/es:ijope.2025>
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement. *Journal of Marketing Research*, XVIII(February), 39–50.
- García-avilés, J. A. (2020). Diffusion of Innovation. In D. R. E. Jan Van den Bulck (Editor-in-Chief) & and E. S. (Associate E. Marie-Louise Mares (Eds.), *The International Encyclopedia of Media Psychology* (pp. 1–8). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781119011071.iemp0137>
- Gordon, R., Spotswood, F., & Dibb, S. (2022). Critical social marketing: towards emancipation? *Journal of Marketing Management*, 38(11–12), 1043–1071. <https://doi.org/10.1080/0267257X.2022.2131058>
- Gungaphul, M., & Boolaky, M. (2021). Ethical considerations in marketing research. In M. Gungaphul, M. Boolaky, & R. Nunkoo (Eds.), *Handbook of Research Methods for Marketing Management*. Edward Elgar Publishing Limited.
- Hair, J.F Jr, Hult, G. T. M., Ringle, M., & Sarsted, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). SAGE Publications Inc.
- Hastings, G., & Domegan, C. (2018). *Social marketing: rebels with a cause* (3rd edition ed.). Routledge.
- Hastings, G., & Domegan, C. (2023). *Social marketing principles and practice for delivering global change*. Routledge.
- Hu, J., & Shengyu, G. (2021). The Relation between Innovation and Revisit Frequency; A Moderating Role of Duration to Stay in Sports or fitness Club. *Revista Argentina de Clínica Psicológica*, 30(1), 162. <https://doi.org/10.24205/03276716.2020.2014>
- Jiang, X., Jiang, H., Li, M., Lu, Y., Liu, K., & Sun, X. (2019). The Mediating Role of Self-Efficacy in Shaping Self-Management Behaviors Among Adults With Type 2 Diabetes. *Worldviews on Evidence-Based Nursing*, 16(2), 151–160. <https://doi.org/10.1111/wvn.12354>
- Kauce, R., Kiseļova, V. D., Jaudzeme, M., & Hvostovoja, A. (2024). Reducing sedentary behaviour in office workers – motivational factors and barriers. *SHS Web of Conferences*, 184.(04001).
- Kemendes RI. (2017). *Buku Panduan GERMAS (Gerakan Masyarakat Hidup Sehat)*. In *Warta Kesmas* (Vol. 1, Issue kesehatan masyarakat). Kemendes. <http://www.kemendes.go.id/>

- Kemenkes. (2019a). Laporan Nasional Riskesdas 2018. In *Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan*. <https://doi.org/10.12688/f1000research.46544.1>
- Kemenkes. (2019b). *Laporan Provinsi Jawa Barat, Riskesdas 2018*. Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.
- Latorre Román, P. Á., Pinillos, F. G., Pantoja Vallejo, A., & Berrios Aguayo, B. (2017). Creativity and physical fitness in primary school-aged children. *Pediatrics International*, 59(11), 1194–1199. <https://doi.org/10.1111/ped.13391>
- Meiden, I. Van der, Kok, H., & Velde, G. Van der. (2019). Nudging physical activity in offices. *Journal of Facilities Management*, 17(4), 317–330. <https://doi.org/10.1108/JFM-10-2018-0063>
- Narimawati, U., Sarwono, J., Affandi, A., & Priadana, S. (2020). *Ragam Analisis dalam Metode Penelitian untuk Penulisan Skripsi, Tesis, & Disertasi*. Penerbit Andi.
- Onagbiye, S. O., & Bester, P. (2022). Physical Inactivity as a Wicked Problem in Sub-Saharan Africa: Overview and Recommendations. *The Open Public Health Journal*, 15(1), 1–6. <https://doi.org/10.2174/18749445-v15-e2202010>
- Pradal-Cano, L., Lozano-Ruiz, C., Pereyra-Rodríguez, J. J., Saigí-Rubió, F., Bach-Faig, A., Esquius, L., Xavier Medina, F., & Aguilar-Martínez, A. (2020). Using mobile applications to increase physical activity: A systematic review. *International Journal of Environmental Research and Public Health*, 17(21), 1–16. <https://doi.org/10.3390/ijerph17218238>
- Sheikh, M., Bay, N., Ghorbani, S., & Esfahaninia, A. (2022). Effects of Social Support and Physical Self-efficacy on Physical Activity of Adolescents. *International Journal of Pediatrics*, 10(100), 15823–15834. <https://doi.org/10.22038/IJP.2022.62762.4793>
- Siwula, M. (2011). *Is Creativity Related to Physical Health? The Relationships Between Creativity, Flow, Self-Esteem, Physical Activity and Health-Related Quality of Life*.
- Thivel, D., Tremblay, A., Genin, P. M., & Panahi, S. (2018). Physical Activity, Inactivity, and Sedentary Behaviors: Definitions and Implications in Occupational Health. *Frontiers in Public Health*, 6, 1–5. <https://doi.org/10.3389/fpubh.2018.00288>
- Tshuma, N., Muloongo, K., Nkwei, E. S., Alaba, O. A., Meera, M. S., Mokgobi, M. G., & Nyasulu, P. S. (2017). The mediating role of self-efficacy in the relationship between premotivational cognitions and engagement in multiple health behaviors: A theory-based cross-sectional study among township residents in South Africa. *Journal of Multidisciplinary Healthcare*, 10, 29–39. <https://doi.org/10.2147/JMDH.S112841>
- Verloigne, M., Cardon, G., De Craemer, M., D'Haese, S., & De Bourdeaudhuij, I. (2016). Mediating effects of self-efficacy, benefits and barriers on the association between peer and parental factors and physical activity among adolescent girls with a lower educational level. *PLoS ONE*, 11(6), 1–16. <https://doi.org/10.1371/journal.pone.0157216>
- WHO. (2018). *Global Action on Physical Activity 2018-2030: More active people for a healthier World*. World Health Organization. <https://doi.org/10.1016/j.jpolmod.2006.06.007>
- Zhang, N., Campo, S., Yang, J., Janz, K. F., & Snetselaar, L. G. (2015). Effects of social support about physical activity on social networking sites: applying the theory of planned behavior. *Health Communication* <https://doi.org/10.1080/10410236.2014.940669>

