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Addressing rural health disparities through policy change in the stroke belt

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Abstract

Context—Obesity prevention policies are needed, particularly in low-income, rural areas of the Southern United States, where obesity and chronic disease prevalence are high. In 2009, the Centers for Disease Control and Prevention issued the “Common Community Measures for Obesity Prevention” (COCOMO), a set of 24 recommended community-level obesity prevention strategies.

Objective—A variety of stakeholders in Lenoir County, North Carolina were surveyed and interviewed, ranking the winnability, defined as feasibility and acceptability, of each of the 24

COCOMO recommended strategies based upon local culture, infrastructure, funding, and community support.

Design—Mixed-methods

Setting—This study was part of the Heart Healthy Lenoir (HHL) project, a community-based project to reduce cardiovascular disease risk and disparities in risk in Lenoir County, North Carolina.

Participants—COCOMO assessments were conducted with 19 Community Advisory Council members and in-depth interviews were conducted with 11 community stakeholders. HHL lifestyle intervention participants (n =366) completed surveys wherein they ranked their support for seven obesity prevention strategies (based upon the COCOMO strategies).

Main Outcome Measures—Ranking of obesity prevention strategies.

Results—Policies to improve physical activity opportunities were deemed the most winnable, whereas policies that would limit advertisement of unhealthy food and beverages were deemed the least winnable. The most winnable food-related strategy was improving mechanisms to procure food from local farms. Stakeholders perceived the public as unfavorably disposed toward government mandates, taxes, and incentives. Among Heart Healthy Lenoir participants, males indicated lower levels of support for COCOMO-related strategies than did females, and African Americans indicated higher levels of support than did white participants.

Conclusion—The formative work presented here provides insight into the winnability of proposed obesity prevention policy change strategies in Lenoir County, North Carolina.

Keywords

built environment; community-based participatory research; food environment; obesity prevention policy

Background and Context

Eastern North Carolina is part of the “stroke belt,” with rates of stroke much higher than the rest of North Carolina and the nation.¹ Increased rates of stroke are associated with obesity and excess adiposity,² which may be partially due to environmental-level disparities in access to healthy food and physical activity opportunities.^{3,4} Such environmental disparities may be addressed through policy change,⁵ but adoption and implementation of obesity-prevention policies can be difficult. Policy change is particularly challenging in low-resource, rural areas, due to limited funding and community support.⁶

To guide local jurisdictions in making policy and environmental changes to prevent obesity, the Centers for Disease Control and Prevention (CDC) issued the “Common Community Measures for Obesity Prevention” (COCOMO), a set of 24 recommended community-level obesity prevention strategies.⁷ For example, COCOMO strategy #6 is “Communities Should Provide Incentives for the Production, Distribution, and Procurement of Foods from Local Farms” and strategy #23 is “Communities Should Enhance Traffic Safety in Areas Where Persons Are or Could Be Physically Active.”⁷ While there are a variety of obesity

prevention policy and environmental change strategies suggested, little is known about how feasible and acceptable such strategies are in the rural, Southern United States.

In Europe, the PorGROW (Policy Options for Responding to the Growing Challenge of Obesity) Project provides a model of stakeholder engagement regarding policy-based solutions to obesity. In nine European countries, 21 types of stakeholders ranked a list of core and discretionary policies based on their perceived efficacy for reducing obesity; production of positive social and health benefits; practical feasibility; social acceptability; and their economic impact on the commercial sector, public sector, and individuals.⁸ The PorGROW investigators found that the highest ranked policy options included those focused on improving sports facilities and increasing both school and community-based health education.^{9–11} Least favored options were “taxes on obesity-promoting foods,” “subsidies on healthy foods,” and “changing transportation and planning policies.”¹² In order to increase the likelihood of successful policy adoption and implementation, it is important to involve local stakeholders in the policy identification process to determine the most realistic, feasible, and winnable obesity prevention policies to pursue. Therefore, local policy makers and stakeholders in rural eastern North Carolina were surveyed and interviewed to determine winnable obesity prevention policies, from among the COCOMO recommended strategies.⁷

Methods

Study Setting and the Heart Healthy Lenoir Project

This study was based in Lenoir County, located in eastern North Carolina. In 2010, the median household income in Lenoir County (population of 59,495 persons) was \$36,455 and the poverty rate was 23.2%. Lenoir County residents were 51% white and 40% black, and approximately 32.4% of adults were obese.^{13,14} The Heart Healthy Lenoir (HHL) Project is a community-based, participatory initiative that is a joint effort of the University of North Carolina-Chapel Hill (UNC-CH), East Carolina University (ECU), and a broad coalition of local community partners. Funded by NHLBI through the UNC-CH Center for Population Health and Health Disparities (CPHHD), the objective of HHL is to create long-term, sustainable approaches to reduce cardiovascular disease (CVD) risk and disparities in risk in Lenoir County, North Carolina. The HHL Project includes three coordinated studies: (1) a lifestyle intervention to improve diet quality, physical activity, and promote weight loss, (2) an intervention to improve blood pressure control among patients with hypertension, and (3) a genomics study that will examine associations between genomic signatures, environmental factors, and heart disease risk.

The design and implementation of HHL was guided by formative research, including windshield tours and community audits, which revealed that Lenoir County has many health-promoting community resources (e.g. parks, gyms, farmers' market) available,¹⁵ as well as a cadre of engaged citizens who are involved in various local efforts to promote healthy lifestyles among residents. Several of these engaged citizens are on the HHL Community Advisory Council (CAC), which includes Lenoir County leaders from the school system, business community, local health department, hospital, and county

government. The study described here was a part of formative research for development of sustainable, community-level approaches to reduce CVD risk as part of the HHL project.

Defining winnability, feasibility, and acceptability

Lenoir County policy makers and stakeholders were interviewed and surveyed to determine the most winnable obesity prevention policies from among the COCOMO strategies. For the purposes of this study, winnability included concepts related to both feasibility and acceptability. Feasibility was defined in terms of funding and infrastructure currently or potentially available to enact a policy or environmental change strategy. Acceptability was defined in terms of how the public and leaders in the public and private sectors viewed a particular policy or environmental strategy. Barriers and facilitators were aspects of feasibility or acceptability that either hindered or supported a particular strategy. Using this conceptual framework, a proposed strategy may be feasible in terms of funding, but not acceptable to the public or leaders in the government or private sectors (or vice versa).

Study Participants

The stakeholders interviewed in this study were either local community leaders (e.g., members of the HHL CAC, and government and business leaders) or community members (HHL participants). We conducted the COCOMO Assessment, described in detail elsewhere,¹⁶ with 19 members of the HHL project's CAC and conducted qualitative, in-depth interviews with 11 purposively selected community stakeholders, including a former city council member, county manager, local mayor, school nurse, and state representative. We also asked HHL intervention participants to indicate their level of support for seven obesity prevention strategies related to healthy eating and physical activity, based upon the COCOMO strategies. Thus, we used three different methods among three stakeholder groups to determine winnable strategies: 1) group discussion with CAC members (n = 19), 2) in-depth interviews with stakeholders (n = 11), and 3) a quantitative survey with HHL intervention participants (n = 366). The current study was approved and monitored by the UNC-CH Institutional Review Board.

Qualitative data collection

The methods of administering the COCOMO Assessment are outlined elsewhere.¹⁶ In brief, we listed each of the COCOMO policy recommendations issued by the CDC, and asked both CAC members and in-depth interview participants to rate each policy recommendation based on perceived winnability in terms of culture, infrastructure, community leader support, and funding. After the 19 CAC members and 11 local stakeholders completed the COCOMO Assessment, Assessments were scored by members of the research team, to determine the lowest and highest scoring COCOMO strategies, for in-depth discussion regarding barriers and facilitators. Upon scoring the COCOMO Assessments completed by members of the CAC, SJP facilitated a group discussion among CAC members to learn of salient barriers and facilitators to selected COCOMO strategies. This group discussion occurred at a regularly-scheduled HHL CAC meeting at the local community college.

In-depth interviews among the 11 local community leaders occurred at the participants' offices or a conference room in the participants' place of work. In-depth interviews were

conducted by two academic researchers (SJP and AA), with graduate research assistants as note takers. In-depth interview questions are outlined in detail elsewhere¹⁶ and included the following: “Using a scale from 1 to 10, how much of a concern is this issue in your community (with 1 being “not at all” and 10 being “a very great concern”)? Please explain.” “What formal or informal policies, practices, and laws related to this issue are in place in your community, and for how long?” “What are the primary obstacles to efforts addressing this issue in your community?” Detailed notes were taken during the CAC discussion, and in-depth interviews of stakeholders were audio-recorded and transcribed verbatim.

Quantitative data collection

HHL lifestyle intervention participants were recruited from the community via flyers, newspaper articles, television, word of mouth, and the study website. Inclusion criteria were age 18 years and above and an interest in improving lifestyle behaviors to reduce CVD risk. Participants for the lifestyle study were also recruited from the blood pressure control study, with inclusion criteria including age 18 or older, established patient at a participating medical practice, and a systolic blood pressure of 150 or above when assessed during routine care at the medical practice within the past 12 months. Upon enrollment, written informed consent was obtained, after which participants completed surveys regarding sociodemographics, health history, diet, and physical activity.

To reduce Heart Healthy Lenoir participant burden, we narrowed the larger list of 24 COCOMO strategies to a list of seven, and altered the language to make the items more reader-friendly. We selected seven items that were a mix of nutrition and physical activity strategies, and HHL participants were asked to indicate their level of support for these seven obesity prevention strategies. Level of support ranged from 1 (strongly do not support) to 10 (strongly support). The following are examples of the obesity prevention strategies: “Communities should provide incentives to food stores to locate in rural or low-income areas; Communities should improve sidewalks to support walking; Communities should limit advertisements of less healthy foods and beverages.”

Qualitative and Quantitative Data Analysis

Verbatim transcripts were entered into Atlas TI for data organization and management. To analyze the qualitative interviews, three coders read three transcripts independently to determine a consensus codebook. The coders then independently double-coded each transcript, with one consistent coder for each transcript (SBJP) and the other transcripts double coded by either TS or LT. The major barriers and facilitators to the highest and lowest scoring COCOMO strategies were identified, and major themes were identified by both frequency of mention and depth of discussion around each theme. Each coder and two transcriptionists (CM and SD) developed independent lists of major themes from the interviews. These themes were compiled by the first author and circulated to all coders and transcriptionists for discussion and verification.

For quantitative data analyses, the mean and median rank, standard deviation, and inter-quartile range for each of the seven COCOMO strategies and the sum of the rankings were calculated. Linear regression models were used to examine associations between mean

rankings of the COCOMO strategies and the independent variables of interest, which included age, sex, and race. Analyses were conducted in SAS 9.2 and a p-value of 0.05 was considered statistically significant.

Results

Community Advisory Council Results

Among CAC members, the least frequently selected COCOMO strategy was “Communities should limit advertisements of less healthy foods and beverages.” (Table 1) During the group discussion, CAC members expressed the following concerns related to this recommended strategy: 1) it would be too difficult to monitor, 2) would limit a business’s marketing efforts, 3) some healthy choices are already available at fast food restaurants, and 4) residents would not want the government telling them what to eat. CAC members stated healthy food advertisements should instead be promoted to increase demand for healthier options.

The most frequently selected COCOMO strategy was “Communities should increase opportunities for extracurricular physical activity.” (Table 1) CAC members discussed the many local recreational assets but felt the county could benefit from additional resources to support physical activity. Perceived barriers to this strategy included lack of funding for expensive infrastructure, such as bike lanes, and perceived lack of safety in less policed areas.

Community Leader In-depth Interview Results

Several themes emerged from in-depth interviews with community leader stakeholders, including themes surrounding funding, perceptions of government mandates, and the rural landscape of Lenoir County. Community leaders also noted the controversial use of taxpayer funds to subsidize businesses as a barrier to potential obesity prevention policy changes. Finally, community support, innovation, and collaboration were perceived as facilitators to obesity prevention policy change, particularly surrounding physical activity and recreation opportunities. Themes and illustrative quotes are provided below.

Funding

Many stakeholders noted that limited funding was a problem:

“Funding is a major problem for many communities in rural North Carolina...I really don’t see bike paths and walking paths happening in the next decade ...We have major problems with aging storm sewer lines so we have flooding where we have never had flooding. So, those types of problems would become higher priorities than the walking and biking paths.”

“The biggest problem ...is that the schools are regulated by the USDA and the state...The school ...has to generate money like a public restaurant. So now they sell a la carte foods, which are poorer quality like fried chicken and French fries so that the children will buy that so they can make revenue... So it’s really a money issue ... I don’t think anybody wants to withhold good food choices.”

However, funding was seen as a facilitator of healthful policy and environmental changes, if it provided recreational opportunities and promoted higher quality of life:

“... per capita, we would be in the top five for investment and utilization [of Parks and Rec]. ... it’s funded so heavily, it’s controversial.”

“... I was in economic development – one of the issues people look at is quality of life, and for quality of life they look for ... where they can do physical activity.”

Perceptions about government mandates

Generally, government regulations and mandates were not favorably perceived:

“I think the community feels like less government... that we shouldn’t be the ones that say ‘don’t eat this, don’t eat that.’ ... They’re always [in favor of] less government... So I think that these are choices that families have to make.”

“Once you become a member of the majority at eighteen, it’s free will. I think we can try to influence, but I’m not sure we can mandate anything.”

“the citizens basically are more anti-government... right now – they don’t want taxes, they want less government involvement, they don’t want you to tell ‘em what they can eat, what they can drink, where they can live, how they can do.”

However, one stakeholder said mandates were acceptable for youth in schools, because taxpayer dollars were funding schools:

“I did not focus on the adult side because of free will. You’re over eighteen and can do what you want to do. I can’t have any control over what you do but for those under that age, in school, the taxpayers are paying for it... I think we can try to influence, but I’m not sure we can mandate anything... if we could get the children started off in a lifestyle of eating better and exercise, I think it will spill over into their adult lives.”

The rural landscape of Lenoir County

The rural landscape was a barrier to walkability and locating schools near neighborhoods:

“...but then you move out into Lenoir County is over 400 square miles of you know territory so when you get into more rural areas – you’re not gonna build a sidewalk to the school.”

Yet the rural nature of Lenoir County was seen as a facilitator for promoting local agriculture:

“We’re a very rural community... the way we were raised a lot of what we ate did come from farms ...”

Subsidies and Incentives

In addition, government subsidies for private businesses that support healthy lifestyle choices were not favorably perceived, as in this example of a large recreational facility being funded in part by the city government:

“It [new recreation facility] was funded by the [Private Organization] but the county put in a half million dollars and the city put in a half million dollars... So if I own a private gym, you’re going to take my tax money and compete with me there. Plus, the membership is going to be subsidized by the city and the county and is going to be less than I can charge. In effect, you just put me out of business.”

When asked about the COCOMO strategy of incentivizing healthier food retail to locate in underserved areas, a local business leader noted:

“...Kinston is very over served area as far as grocery retailers... Per capita there’s probably more grocery stores in Kinston than most places in North Carolina ...If there is a market for a supermarket, you can believe someone’s doin’ a market study, tryin’ to determine whether or not that store would be profitable...If a supermarket gets a subsidy, you are positioning it to fail.”

Community Support and Innovation

Community support, innovation, and collaboration were facilitators to providing more recreational facilities:

“To better understand it, I love partnerships and team play where you pull together ... we [city council] put in this, five hundred thousand, the County Commissioners five hundred thousand...the private donors have given us money.”

Another perceived local facilitator of obesity prevention policy change included an innovative Parks and Recreation Department:

“recreation programs in Lenoir County are very, very good and they have exercise programs and they’re in community centers that are located in various neighborhoods throughout the community so – I think that there is accessibility – now whether it’s marketed as much as it could or participated in as much as it should be, I don’t know.”

“Our Parks and Recreation program in Lenoir County is excellent for a community this size... We have sports all seasons, we have recreational opportunities at many community centers throughout the county ...I’d say one of the community strengths of Lenoir County is its recreation program.”

HHL intervention participant results

Among the 366 HHL intervention participants, the mean age was 55.2 (standard deviation = 12.0) years, 76.0% were female; and 65.6% were black, 33.3% white, and 1.1% other race. Table 2 shows rankings of seven COCOMO strategies by HHL intervention participants. All seven strategies were ranked above 5 (the scale ranged from 0–10), indicating broad community support for the seven strategies. The most winnable strategies identified were “Communities should improve sidewalks to support walking;” and “Communities should improve access to outdoor exercise and recreation places, such as parks and waterways.” While the two least winnable strategies were “Communities should limit advertisements of less healthy foods and beverages,” and “Communities should increase support for breastfeeding,” the mean rank for each was over 7.

Table 3 shows that males indicated lower support for COCOMO-related strategies than did females, ($p = 0.0008$), and African Americans indicated higher support for COCOMO-related strategies than did whites ($p = 0.0015$).

Conclusions

Results of the current study indicated obesity prevention policy strategies related to improving physical activity facilities and opportunities were seen as the most winnable, and limiting advertising of unhealthy food was the least winnable obesity prevention policy recommendation. Overall, current results are in agreement with those of the PorGROW project, which found the most highly ranked policy options included “improving communal sports facilities,” and “increasing education on food/health in schools,” and least favored options were “taxes on obesity-promoting foods” and “subsidies on healthy foods,” among others.^{6,7,11} Lenoir County stakeholders perceived the public would be unfavorably disposed toward government mandates, taxes, and incentives. However, some stakeholders favored policies to improve the food and physical activity opportunities in schools as good stewardship of taxpayer dollars. While the COCOMO strategies were appraised by various types of stakeholders, more evidence is needed to determine how various strategies would be viewed by the overall community. The quotes such as those related to individual freedom and choice may or may not be shared among all community stakeholders, and even if shared among many community members, may vary in terms of their influence on supporting or hindering various policy and environmental change strategies.

The current results are similar to what Ohri-Vachaspati, et al.¹⁷ found regarding frequency of CDC recommended strategies adopted by Robert Wood Johnson Foundation (RWJF) community grantees: many grantees adopted and implemented strategies to increase opportunities for physical activity, improve access to outdoor recreation facilities, and enhance infrastructure for walking and biking.¹⁷ It is interesting to note the strong support for physical activity (PA) infrastructure improvements in this study, despite the widespread observation that the Parks and Recreation operations are already strong in Lenoir County. Fewer RWJF grantees adopted food-related strategies, with the majority of food-related strategies related to incentives for retailers to locate in underserved areas and improving mechanisms to use local food. In the current study, the most winnable food-related strategy was improving mechanisms to procure food from local farms, possibly because of the rural agricultural context.

Current results indicate stakeholders perceived there were many PA opportunities, but still scored PA strategies as most winnable. Further, stakeholders perceived food-related strategies as potentially limiting economic growth in Lenoir County, an important issue for economically depressed rural areas. Many economic opportunities in the county are related to a popular fast food restaurant chain and soda bottling company, which may be one reason that limiting advertising of unhealthy foods and beverages was seen as least winnable. Finally, it was apparent many of the COCOMO strategies are not feasible for rural areas. For example, it is not as feasible to build more sidewalks or locate schools near neighborhoods in rural areas as it may be in more urban areas. In the future, each strategy should be evaluated based upon applicability to the rural versus urban context. In quantitative

analyses, all seven strategies were ranked above 5 (the scale ranged from 0–10), indicating broad community support for the seven strategies. Interestingly, males reported lower support for COCOMO strategies than females, and African Americans reported greater support for COCOMO strategies than whites. More work should be done to determine if such associations hold true among different groups.

One limitation of the COCOMO assessment and engagement process is participants may not have interpreted terms such as “underserved” or “infrastructure” similarly, and in the future, such terms should be defined for participants so they are consistently interpreted. An additional limitation is that the HHL participants who ranked the COCOMO strategies were part of a convenience sample and may not be representative of the broader Lenoir County community. Finally, the wording of COCOMO strategies may have influenced responses, such that participants may have responded more favorably to words such as “enhance” versus “restrict”. COCOMO could be revised to make the language in each strategy more neutral. Overall, the COCOMO assessment was an effective means for engaging stakeholders in the dialogue about obesity prevention policies. The credibility of results is strengthened by the double-coding and triangulation from multiple data sources.

The current work provides insights into future HHL efforts, which will be centered on winnable obesity prevention policy change strategies identified by Lenoir County stakeholders. In the case of physical activity infrastructure improvements, strategies may include promotion of existing PA resources among residents, and policies to facilitate greater use of existing facilities. Such resources and policies include neighborhood crime prevention and convenient recreational programming to maximize participation. Stakeholders perceived food-related strategies as limiting economic growth. One HHL research aim is to improve the community food environment through partnering with local restaurants and other food-related businesses. COCOMO findings indicate businesses should be approached with “opportunities” versus “subsidies” or “regulations,” and offered resources to improve their profitability and bottom line. Ultimately, obesity prevention policies should lower disparate rates of obesity and related chronic disease in Lenoir County and other areas of the rural stroke belt.

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Table 1

Highest and lowest scoring obesity prevention policy change strategies as assessed by members of the Heart Healthy Lenoir Community Advisory Council (HHL CAC) (n = 19) and local stakeholders (n=11).

	HHL CAC	HHL Stakeholder Interviews
Most winnable strategy	Increase opportunities for extracurricular physical activity.	Increase the amount of physical activity in PE programs in schools.
Second most winnable strategy	Provide incentives for the production, distribution, and procurement of foods from local farms.	Increase opportunities for extracurricular physical activity.
Third most winnable strategy	Enhance infrastructure supporting bicycling and walking.	Improve access to outdoor recreational facilities.
Least winnable strategy	Limit advertisements of less healthy foods and beverages.	Discourage consumption of sugar-sweetened beverages.
Second least winnable strategy	Restrict availability of less healthy foods and beverages in public service venues.	Improve geographic availability of supermarkets in underserved areas.
Third least winnable strategy	Zone for mixed use development.	Limit advertisements of less healthy foods and beverages.

Table 2

Ranking of support for seven obesity prevention policy change strategies among the Heart Healthy Lenoir Lifestyle Intervention Participants (n = 366).*

Strategy	Mean Rank	Median Rank	Standard Deviation	25 th – 75 th Inter-quartile range
Communities should improve sidewalks to support walking.	8.45	10.00	2.36	8.00–10.00
Communities should improve access to outdoor exercise and recreation places, like parks and waterways.	8.37	10.00	2.29	7.00–10.00
Communities should provide incentives to food stores to offer healthier food and beverage choices in rural or low-income areas.	8.17	9.00	2.40	7.00–10.00
Communities should support locating schools within easy walking distance of where people live.	8.02	9.00	2.44	6.00–10.00
Communities should provide incentives to food stores to locate in rural or low-income areas.	7.99	9.00	2.55	6.00–10.00
Communities should limit advertisements of less healthy foods and beverages.	7.23	8.00	3.10	5.00–10.00
Communities should increase support for breastfeeding.	7.22	8.00	2.90	5.00–10.00

* Response options for each item were 1–10, where 1 indicated the participant "strongly did not support" the strategy and 10 indicated the participant "strongly supported" this strategy.

Table 3

Associations between ranking of support for seven obesity prevention policy change strategies and summed ranking and age, sex, and race among the Heart Healthy Lenoir Lifestyle Intervention Participants (n = 366) in Rural NC during 2010–2011. Numbers in cells include estimate, standard error, and p-values.

COCOMO strategy	Age	Sex ¹	Race ²
Communities should provide incentives to food stores to locate in rural or low-income areas.	−0.00 (0.01), p = 0.8433	−0.70 (0.32), p = 0.0281	0.64 (0.30), p = 0.0331
Communities should provide incentives to food stores to offer healthier food and beverage choices in rural or low-income areas.	−0.02 (0.01), p = 0.1269	−0.73 (0.30), p = 0.0138	0.65 (0.28), p = 0.0213
Communities should improve access to outdoor exercise and recreation places, like parks and waterways.	−0.02 (0.01), p = 0.0210	−0.64 (0.28), p = 0.0228	0.51 (0.27), p = 0.0552
Communities should improve sidewalks to support walking.	−0.01 (0.01), p = 0.3941	−0.56 (0.29), p = 0.0582	0.76 (0.28), p = 0.0064
Communities should support locating schools within easy walking distance of where people live.	−0.00 (0.01), p = 0.9804	−0.27 (0.30), p = 0.3803	1.06 (0.28), p = 0.0002
Communities should limit advertisements of less healthy foods and beverages.	0.03 (0.01), p = 0.0618	−1.22 (0.38), p = 0.0014	1.00 (0.36), p = 0.0055
Communities should increase support for breastfeeding.	−0.03 (0.01), p = 0.0455	−1.16 (0.34), p = 0.0014	0.16 (0.34), p = 0.6389
Summed ranking of all 7 COCOMO strategies	−0.06 (0.06), p = 0.3307	−5.44 (1.60), p = 0.0008	4.81 (1.51), p = 0.0015

¹Referent group is male.

²Referent group is African American.