




# **THE IMPACT OF SELECTED FACTORS ON THE PARTICIPATION STATUS OF UNIVERSITY STUDENTS IN A LEADERSHIP TRAINING PROGRAM**

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## **Abstract**

*Different factors may impact participation in leadership programs for university students. However, not many studies have been conducted on this issue. Therefore, this study analyzed the impact of selected factors on the participation status of university students in a leadership training program. Regarding study participants, there were more female participants than male participants. Also, more of the recruited students did not participate in the training compared to those who participated, and more of the participants were in the immediate incentive group compared to the delayed incentive group. Further, regarding the receipt of incentives, a very*



*high proportion of the recruited students received their incentives. In terms of class classification of participants, there were more sophomores in the trainee groups. The regression results revealed that for model 1, only the incentive classification had a statistically significant effect on student participation, and for model 2, gender, incentive classification, and receipt of incentives had statistically significant effects on student participation. It may be that gender, incentive classification, and receipt of incentives are important factors in university students' leadership training. However, incentive classification may be the paramount factor.*

*Keywords: Leadership, Leadership Training Program, Participation Status, Selected Factors, University Students*

## INTRODUCTION

Training programs are necessary because they inculcate in participants the knowledge and/or skills that they need. Even if the participants have some knowledge and/or skills in the subject matter, they are infused with new or updated knowledge and/or skills in the subject matter. An example of such training is the leadership training programs. Leadership training is important because participants acquire new knowledge and skills that they can use in the present or the future. Generally, leadership training is conducted, for example, for adults, such as workers and community residents, and youth or young persons, such as university students.

Rosch & Caza (2012) observed that there is a need and desire to develop future leaders in leadership training programs on university campuses. Also, Rosch (2018) explained that participation in leadership programs usually leads to participants receiving relatively higher scores in leadership capacity indicators. Lamm, Sapp, Randall, & Lamm (2021) argued that leadership is a major human resource challenge in higher education; therefore, it is urgently needed in such settings. They suggested that to nurture this resource, palatable approaches are required. For example, they suggested targeting leadership development programs to group-specific participants, such as by gender, age, or stage of development (youth, or adults). Yet Phillips, McLaughlin, Gettig, Fajiculay, & Advincula (2015) argued that students should participate in academic societies, or professional organizations, as this leads to networking and also taking on leadership roles; thus, developing leadership skills.

For instance, Deal & Yarborough (2020) discussed the major practices for substantial impact on leadership development vis-à-vis university students. They mentioned five main practices. These include “a leadership model and development framework; formative evaluation

of students; relevant, meaningful leadership experiences; impactful coaching; and tools and methods that provide a rich, engaging, experience” (p. 4). They emphasized that student leadership programs that include these five practices are likely to enhance individual growth (especially leadership growth), opportunities after graduation, and current and past students’ interactions with their institutions.

The preceding discussion implies that university students’ leadership programs are important. The reason is that when university students are engaged in leadership training it helps them to develop new perspectives on leadership. Moreover, they are likely to transfer the knowledge and/or skills that they acquire to their daily lives during and after their education at the university and impact the “community”, such as on campus, place of residence, or professional organization, society, or association. Yet, although university student leadership programs are important, there have not been many studies that examine factors that affect such programs. The key question is, “What factors impact participation in leadership training for university students? Based on the foregoing, the purpose of the study is to analyze the impact of selected factors on the participation status of university students in a leadership training program. The specific objectives are to : (1) examine socioeconomic factors, and (2) assess factors that influence participation in leadership training.

## LITERATURE REVIEW

The literature review focuses on studies that examine factors that influence participation in student leadership training, and/or other categories of leadership participants. They are discussed chronologically. For instance, Rosch & Caza (2012) used the Social Change Model competency indicators, respectively, consciousness of self, congruence, commitment, collaboration, common purpose, controversy with civility, citizenship, and change, to assess the effects of student leadership programs. They reported that, generally, students who participated in leadership programs displayed an improvement in leadership capacity. However, they also reported that not all the leadership competency indicators reflected marked improvement after the training. Despite this, most of the competency indicators had stronger relationships with one another after the training than before the training. The authors concluded that the leadership training enhanced the students’ understanding of leadership.

Gallagher, Marshall, Pories, & Daughety (2014), on their part, used the Student Leadership Practice Inventory (SLPI) indicators to examine factors affecting student leadership behaviors. SLPI measures five components of leadership: model the way; inspire a shared vision; challenge the process; enable others to act; and encourage the heart. The authors reported that the practice of leadership behaviors was significantly enhanced from freshmen

(Class Year 1) to juniors (Class Year 3) and from juniors to seniors (Class Year 4). Furthermore, they observed that “each class significantly less likely practiced the ‘challenge the process behavior’ and significantly more likely practiced ‘enable others to act behavior (p. 49).” The authors surmised that the participants did not want to take risks to jeopardize their positions. What is more, female students had significantly higher scores than male students at each classification level.

Phillips et al. (2015) found that the major motivation factors for students’ pursuit of leadership positions were having a well-rounded background, the ability to network, and participating in the activities of an organization. Additionally, they found that participation in a professional organization highly impacted students’ leadership skills, teamwork skills, self-confidence, and time management skills.

Rosch (2018) reported identical leadership capacity levels between postsecondary students who consistently participated in leadership training and those who did not. Also, participants in both groups displayed a leadership capacity that cannot distinguish between a leader’s self-efficacy (ready), the motivation to lead (willing), and leadership ability (able). The author argued that the results have implications for (1) educators: They must improve the programs that they offer. Educators struggle to strike a balance between (a) teaching “leadership studies” (e.g., ensuring that students understand the various levels of the social change model of leadership development), and (b) teaching “leadership development” (e.g., helping students to recognize how to productively apply concepts to their actions); (2) researchers: that (a) the population of the study should be expanded to be more representative, and (b) different types of leadership measures should be used in future studies.

Kovar & Simonsen (2019) examined factors influencing socially responsible leadership development among university students (juniors and seniors). They considered involvement characteristics (such as participation in organizations, community service, and leadership education) in student leadership development, comprising commitment, congruence, common purpose, collaboration, citizenship, consciousness of self, controversy with civility, and change). They reported that a majority of the students were involved in two to five organizations during their university tenure, and most reported that they were involved in community service. Additionally, they reported that a majority of the students were involved in short-term leadership education programs as opposed to long-term programs. Further analysis to ascertain the impacts of involvement factors on the development of socially responsible leadership outcomes showed that only three variables were impacted. These were “common purpose”, “citizenship”, and the overall value/indicator of the outcome variables.

Lamm et al. (2021) explored leadership development programming in higher education, focusing on transformational leadership across gender and role types of university administrators. They found that as females attained higher roles in the organizational system at a Land Grant University, where it was observed that their perceptions of transformational leadership fell and those of males rose. In essence, overall, male transformational leaders (participants) rated themselves higher than female transformational leaders (participants). Lamm et al. also reported that there is the possibility of developing an enhanced or diminished perception of transformational leadership as leaders are promoted.

Dinh, Zhu, Nguyet, & Qi (2023) evaluated nine predictors (gender, age, leadership experience, personal interest and practical enhancement, occupational promotion, social contact, external reason, interaction quality, and course content) and their effects on learning outcomes or perceived effectiveness [satisfaction, perceived knowledge, and potential skills] as they relate to online leadership training. They found that the major predictors of learning outcomes or perceived effectiveness were, respectively, course content and interaction quality. Also, they found out that the four indices of motivation (personal interest and practical enhancement, occupational promotion, social contact, and external reason) had different effects on learning outcomes or perceived effectiveness. Moreover, they reported that (1) socioeconomic factors did not statistically significantly affect learning outcomes or perceived effectiveness; (2) personal interest and practical enhancement had statistically significant impacts on learning outcomes or perceived effectiveness indicators; (3) course content statistically significantly affected all three learning outcomes or perceived effectiveness; but its greatest impact was on "satisfaction"; (4) together the independent variables accounted for 69% of the variation in satisfaction, 75% in perceived knowledge, and 60% in potential skills.

Wang (2023) identified four influencing factors of student leadership. First, he mentioned formal education, or simply education. He argued that receiving a formal education is an effective predictor of the leadership performance of student leaders. Second, he mentioned individual characteristics or personality traits. He argued that personality traits are good predictors of effective student leadership. These traits include problem-solving skills, creative thinking skills, the ability to motivate others, willingness to accept challenges, and communication skills. Third, he indicated parenting style. He stressed that, for example, students imitate the leadership behaviors of adults that they admire, beginning with their parents. Furthermore, he argued that a family structure where parents require accountability but are not unusually strict with their children enhances future student leadership. Fourth, he indicated age. He emphasized that the improvement of leadership skills was positively associated with the increase in the age of students.

In summary, the literature cited above, Rosch & Caza (2012), Gallagher et al. (2014), Phillips et al. (2015), Rosch (2018), Kovar & Simonsen (2019), Lamm et al. (2021), and Dinh et al. (2023) deal with students and leadership training or development, and Lamm et al. (2021) deal with adults/administrators and leadership training or development.

## METHODOLOGY

### Research Design

This study's design is cross-sectional as data were collected at specific points in time and analyzed.

### Data Sources and Collection

The data were obtained from a set of leadership training workshops, which were conducted in two colleges at Tuskegee University in the Fall of 2022 and Spring of 2023. Twenty sets of data were generated and used. They are, respectively, five data sets each for College 1 and College 2 in the Fall of 2022 and five data sets each from five workshops for College 1 and College 2 in the Spring of 2023. From these data, the researchers generated the set of data used in the study, which are respectively, gender classification, incentive classification, receipt of incentives, class classification, and participation status. The total number of observations was 391; 182 for the Fall and 209 for the Spring. The reasoning behind the given data sets was that student participants were given incentives for participation in the workshops within the context of associated factors. So, it was necessary to ascertain whether their participation was influenced by the incentives and/or other factors. The sample size (or sizes) was (were) considered adequate for the study.

### Data Analyses

The data were analyzed using descriptive statistics, specifically frequencies and percentages, and binary logistic regression analysis. The various analyses were done using SPSS 12.0<sup>®</sup> (MapInfo Corporation, Troy, NY). The description of the logistic regression follows those used by Tackie et al. (2016), Tackie et al. (2018a), and Tackie et al. (2018b). The general model was stated as:

$$Y_i = \ln (P_i/1-P_i) = \beta_0 + \beta_j X_{ij} + \varepsilon \quad (1)$$

Where:

$Y_i = \ln (P_i/1-P_i)$  = the natural log (or the log odds) of the probability that the  $i^{\text{th}}$  observation of the dependent variable belongs to a particular group to the probability that it does not belong to that group

$\beta_0$  = constant

$\beta_i$  = coefficients

$i$  = number of observations

$j$  = number of independent variables

$X_i$  = independent variables

$\varepsilon$  = error term

Two models were developed, respectively, for the Fall 2022 and the Spring 2023 workshops. The estimation model for Fall 2022, model 1, is stated as:

$$\ln(P_{PAS}/1-P_{PAS}) = \beta_0 + \beta_1\text{GEN} + \beta_2\text{ICL} + \beta_3\text{CLA} + \varepsilon \quad (2)$$

Where:

$\ln(P_{PAS}/1-P_{PAS})$  = the natural log (or the log odds) of the probability that a selected/recruited student participates in the training sessions to the probability that a selected/recruited student does not participate in the sessions

GEN = Gender

ICL = Incentive classification

CLA = Class classification

Thus, the estimation model hypothesizes that the natural log of the probability that a selected/recruited student participates in the training sessions to the probability that a selected/recruited student does not participate in the sessions is affected by gender, incentive classification, and class classification. It was assumed that the expected signs of the independent variables were not known *a priori*.

The estimation model for Spring 2023, model 2, is stated as:

$$\ln(P_{PAS}/1-P_{PAS}) = \beta_0 + \beta_1\text{GEN} + \beta_2\text{ICL} + \beta_3\text{ROI} + \beta_4\text{CLA} + \varepsilon \quad (3)$$

Where:

$\ln(P_{PAS}/1-P_{PAS})$  = the natural log (or the log odds) of the probability that a selected/recruited student participates in the training sessions to the probability that a selected/recruited student does not participate in the sessions

GEN = Gender

ICL = Incentive classification

ROI = Receipt of incentive

CLA = Class classification

Thus, the estimation model hypothesizes that the natural log of the probability that a selected/recruited student participates in the training sessions to the probability that a selected/recruited student does not participate in the sessions is affected by gender, incentive

classification, receipt of incentive, and class classification. Here, also, it was assumed that the expected signs of the independent variables were not known *a priori*.

Note that ROI was not included in the Fall 2022 model, model 1, because all participants received their incentives. Therefore, there was no variation there and a test run with ROI indicated no difference in that result vis-à-vis the version without the ROI. The details of the independent variable names and descriptions used for the models are shown in the Appendix 1 and 2. The criteria used to assess the models were the model chi-squares, beta coefficients,  $p$  values, and odd ratios.

## RESULTS AND DISCUSSION

### Descriptive Statistics

Table 1 shows the related descriptive characteristics of the participants for Fall 2022. Nearly 25% were males and 75% were females; 32% participated in the workshops compared to 68% that did not participate; Additionally, 52 % were in the immediate incentives group and 48% were in the delayed incentives group; all participants received their incentives, and 80% were sophomores and 20% were juniors.

Table 2 depicts related descriptive characteristics of the participants for Spring 2023. About 24% were males and 76% were females; 21% participated compared to 79% who did not participate. Nearly 57 % were in the immediate incentives group and 43% were in the delayed incentives group. Moreover, 92% received the incentives, 8% did not, and 4% were freshmen; 75% were sophomores, and 21% were juniors.

Overall, in both semesters, there were more female students than male students (respectively, 75 and 76% vs. 25 and 24%). Also, it was found that more of the recruited students did not participate compared to those who participated (respectively, 68 and 79% vs. 32 and 21%); and more of the recruited students were in the immediate incentive group compared to the delayed incentive group (respectively, 52 and 57% vs. 48 and 43%). Correspondingly, regarding the receipt of incentives, all participants received their incentives in the Fall of 2022, but 92% received the incentives in the Spring of 2023 vs. 0 and 8%, respectively, in the Fall of 2022 and Spring of 2023, who did not receive incentives. Finally, in terms of class classification of participants, sophomores dominated in both semesters compared to other class groups (respectively, 80 and 75% vs. 20 and 25%).



Table 1. Descriptive Factors of Participants (n = 182)

Variable	Frequency	Percent
<b>Gender</b>		
Male	45	24.7
Female	137	75.3
<b>Participation Status</b>		
Participated	58	31.9
Did not participate	124	68.1
<b>Incentive Classification</b>		
Immediate	95	52.2
Delayed	87	47.8
<b>Receipt of Incentives</b>		
Received	182	100.0
Did not receive	0	0.0
<b>Class Classification</b>		
Freshman	0	0.0
Sophomore	145	79.7
Junior	37	20.3

Table 2. Demographic Characteristics of Participants (n = 209)

Variable	Frequency	Percent
<b>Gender</b>		
Male	51	24.4
Female	158	75.6
<b>Participation Status</b>		
Participated	44	21.1
Did not participate	165	78.9
<b>Incentive Classification</b>		
Immediate	119	56.9
Delayed	90	43.1
<b>Receipt of Incentives</b>		
Received	193	92.3
Did not receive	16	7.7
<b>Class Classification</b>		
Freshman	9	4.3
Sophomore	156	74.6
Junior	44	21.1

Table 3 reflects estimates of the effects of the selected factors on participation status for the Fall 2022 model. The model chi-square was not statistically significant ( $p = 0.266$ ). This means that there was a weak fit between the selected factors and participation status. The Nagelkerke  $R^2$  was 0.033; this implies that the factors explain only 3% of the variation in participation status. Notwithstanding the overall model not being significant, the coefficient for incentive classification was statistically significant ( $p = 0.073$ ). This means that if incentive classification increases by one unit, say in the delayed category, then the log odds of

participation will decrease by 0.6 units (that is, nearly 1 unit or 1 person), all things equal. However, gender and class classification were not statistically significant. Consequently, when the gender and class classification variables were dropped, one by one and together (not shown in Table), the relationship with incentive classification was still statistically significant (not shown in Table).

The odds ratio of 1.243 for gender means that if gender changes from male to female, then a student is 1.2 times more likely to participate in the workshops. The odds ratio of 0.531 for incentive classification means that if incentive classification changes from immediate to delayed, then a student is about 0.5 (one-half) times less likely to participate in the workshops. The odds ratio of 1.018 for class classification means that if class classification changes from junior to sophomore, then a student is about 1.02 times more likely to participate in the workshops.

Table 3. Estimates of the Effects of the Selected Factors on Participation Status, Fall 2022

Variable	$\beta$	$p$	OR
GEN	0.217	0.553	1.243
ICL	-0.634*	0.073	0.531
CLA	0.018	0.966	1.018
Constant	-0.542	0.601	0.581
Chi-square ( $p = 0.226$ )	4.353		
Nagelkerke $R^2$	0.033		

\*Significant at 10%; OR = Odds Ratio

Table 4 depicts the estimates of the effects of the selected factors on participation status for the Spring 2023 model. The model chi-square was statistically significant ( $p = 0.006$ ). This means a strong fit between the selected factors and participation status. The Nagelkerke  $R^2$  was 0.103. This suggests that the factors explain 10% of the variation in participation status. The coefficients of gender, incentive classification, and receipt of incentives were statistically significant, respectively, ( $p = 0.050$ ), ( $p = 0.020$ ), and ( $p = 0.102$ ). However, the coefficient for class classification was not statistically significant ( $p = 0.746$ ). Respectively, it means that if gender increases by one unit, say in the female category, then the log odds of participation will increase by about 0.8 units (that is, by about 1 unit or 1 person) all things equal. Additionally, if the incentive classification increases by one unit, say in the delayed category, then the log odds of participation, will decrease by 0.9 units (that is, by almost 1 unit or 1 person), all things equal; and if receipt of incentives increases by one unit, say in the “received” category, then the log

odds of participation, will increase by nearly 1.8 units (that is, by approximately 2 units or 2 persons), all things equal.

Overall, this implies that gender, incentive classification, and receipt of incentives contributed immensely to participation in the workshops. For gender, it may imply that female participants are more likely to participate in the workshop because all things equal, they will more likely attend workshops they signed up for. Also, for incentive classification, this implies that a recruit who is in the delayed incentive group is less likely to participate, all things equal. Furthermore, for receipt of incentives, this implies that a participant who receives incentives is more likely to participate in the workshops, all things equal.

The odds ratio of 2.129 for gender means that if there were a change in gender from male to female, then a student is about 2 times more likely to participate in the workshops. The odds ratio of 0.420 for incentive classification means that if incentive classification changes from immediate to delayed, then a student is about 0.4 (two-fifths) times less likely to participate in the workshops. The odds ratio of 5.728 for receipt of incentives implies that if receipt of incentive changes from “not received” to “received”, then a student is nearly 6 times more likely to participate in the workshops. Also, the odds ratio of 0.878 for class classification implies that if class classification changes from sophomore to junior or freshman, then a participant is 0.9 times less likely to participate in the workshops.

Table 4. Estimates of the Effects of the Selected Factors on Participation Status, Spring 2023

Variable	$\beta$	$p$	OR
GEN	0.756**	0.050	2.129
ICL	-0.915**	0.020	0.420
ROI	1.745*	0.102	5.728
CLA	-0.130	0.746	0.878
Constant	-2.448	0.090	0.086
Chi-square ( $p = 0.006$ )	14.384***		
Nagelkerke $R^2$	0.103		

\*\*\*Significant at 1%; \*\*Significant at 5%; \*Significant at 10%; OR = Odds Ratio

## CONCLUSION

The purpose of the study was to analyze the impact of selected factors on the participation status of university students in a leadership training program. Specifically, it examined the socioeconomic factors and assessed the factors that influence participation in leadership training. Overall, in both semesters, there were more female participants than male

participants (75 and 76% vs. 24 and 24%); more of the recruited students did not participate compared to those who participated (68 and 79% vs. 32 and 21%); and relatively more of the participants were in the immediate incentive group compared to the delayed incentive group (52 and 57% vs. 48 and 43%). Also, regarding the receipt of incentives, all participants received their incentives in the Fall of 2022, but 92% received the incentives in the Spring of 2023, vs., respectively, 0 and 8% for those who did not receive the incentives in the said semesters. Finally, in terms of class classification of participants, sophomores dominated in both semesters (80 and 75% vs. 20 and 25%).

The results of the binary logistic regression revealed that for the effects of selected factors on the Fall 2022 model, model 1, only incentive classification had a statistically significant effect on participation status. What is more, for the Spring 2023 model, model 2, gender, incentive classification, and receipt of incentives had statistically significant effects on participation status. The contribution of this study is that selected factors, such as gender, incentive classification, and receipt of incentives are identified factors that influence participation in leadership training of university students. It is recommended that further studies be done to confirm the results.

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## APPENDICES

### Appendix 1. Variable Definitions and Descriptions of Data for the Model 1 (N = 182)

Variable	Description	Mean	Standard Deviation
Gender	1 = male 0 = female	0.247	0.433
Incentive classification	1 = immediate 0 = delayed	0.522	0.501
Class classification	1 = freshman 2 = sophomore 3 = junior	2.203	0.404
Participation status	1 = participated 0 = did not participate	0.312	0.467

### Appendix 2. Variable Definitions and Descriptions of Data for the Model 2 (N = 209)

Variable	Description	Mean	Standard Deviation
Gender	1 = male 0 = female	0.244	0.431
Incentive classification	1 = immediate 0 = delayed	0.569	0.496
Receipt of Incentives	1 = Yes 0 = No	0.923	0.296
Class classification	1 = freshman 2 = sophomore 3 = junior	2.168	0.476
Participation status	1 = participated 0 = did not participate	0.211	0.409