A Bank's Customer Citizenship Behaviour in the Multinomial Logistic Regression Model

ADIREK VAJRAPATKUL, NUTTAWUT ROJNIRUTTIKUL*

The KMITL Business School,

King Mongkut's Institute of Technology Ladkrabang,

P.O. BOX 1 Chalong Krung, 1 Alley, Lat Krabang, Bangkok 10520, Bangkok,

THAILAND

*Corresponding Author

Abstract: - This research aimed to study the factors affecting customer citizenship behavior (CCB) in the banking industry. The data were collected from questionnaires from bank customers in six districts of Bangkok, Thailand. The data were analyzed using EFA and MLR techniques. The study identified three latent variables that could affect the level of CCB, namely good corporate governance, quality of self-service technology, and quality of onsite service. The results showed that good corporate governance in transparency, accountability, and fairness significantly improves the level of CCB. In addition, the quality of self-service technology, which provided convenience to bank customers, could lead to increased CCB. Regarding on-site service quality, the results also showed that it was an important factor in increasing CCB. In terms of the impact of demographic variables, people aged 41 to 45, women, and low-income earners were more likely to have high levels of CCB compared to the reference group. This research emphasizes the need to adhere to corporate governance, quality of self-service technology, quality of on-site service, and customer characteristics to enhance CCB and bank success.

Key-Words: - Corporate governance, Self-service technology quality, On-site service quality, Customer citizenship behavior, Bank, Logistic Regression, Thailand.

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1 Introduction

Banks are financial institutions that play an important role in the economic system. They provide essential financial services to individuals and organizations to help economic activities continue, which allows the economy to grow continuously, [1].

By providing credit services, banks enable business units to increase their investment in existing businesses or even invest in new businesses, which helps them expand their businesses. Moreover, banks play an important role in creating financial innovations, allowing individuals and business units to access easier credit. As a result, banks play an important role in stimulating business growth through various functions, such as promoting entrepreneurship creating and employment opportunities, [2]. The development of banking services is continuous and covers a variety of important transactions, such as receiving and transferring money, cash management, foreign

exchange, providing services to import and export businesses, and risk hedging. These services help businesses that trade and invest domestically and internationally operate more efficiently, [3]. Moreover, banks also help improve the financial status of households through various products and services, such as deposits, providing financial credit, insurance, and retirement planning. These financial services help increase income, returns, and financial security for households and business units, [3]. The development of financial systems and markets, as well as financial technology, has increased the number of financial institutions that provide financial services. The increase in these financial institutions has been accompanied by the introduction of new technologies and regulations that have led to increased competition in the financial industry. Due to this increase in competition, financial institutions have had to develop and expand their services, especially banks, which have had to expand their

services beyond deposits and lending to provide financial services that cover the needs of their customers and to adopt new technologies such as FINTECH, [4] to increase their market power and profits, [5]. In addition to developing technologies, many banks have focused on developing good relationships with customers and creating positive customer behaviors towards the bank, known as customer citizenship behavior (CCB). This behavior refers to voluntary efforts by customers to promote the bank's operations and services and help other providing such as suggestions. customers. recommending services, and participating in various bank activities, [6].

From the previous studies, it has been shown that CCB has a direct impact on efficiency, operations, business growth, customer satisfaction levels, customer loyalty, and customer retention, which in turn has a positive effect on the ability of the bank to generate income and profit, [7]. In addition, CCB helps to promote a sense of community and collaboration among customers. It helps to create a better brand image and enhance the reputation of the bank, [6].

This study recognizes the importance of CCB to banks and tries to explore the factors affecting CCB in banks by using Exploratory Factor Analysis (EFA) and Logistic Multinomial Analysis techniques. To meet this objective, this study organizes the rest of the works as follows. Section 2 presents the academic work that supports the research framework. Later, Section 3 describes the research methodology. Section 4 presents the results. Then, Section 5 provides discusses.

2 Literature Review

The following are concepts utilized in this work.

2.1 Customer Citizenship Behavior

Customer citizenship behavior (CCB) refers to voluntary, helpful behaviors performed by customers beyond their pre-defined roles' expectations towards fellow customers or the retailer, [8]. CCB is the useful, constructive actions exhibited by customers that an organization values or appreciates. In this manner, customers are recognized as a firm's human resource, and they may even replace employees or be viewed as organizational members who co-create value for firms, [9]. CCBs are behaviors that are not

required for the production and/ or delivery of a successful product or service but can help improve organizational performance. It comprises customers' voluntary extra-role behaviors during or after service delivery, [10]. CCB can be measured by combining several dimensions, such as recommendations, providing feedback to the organization, helping other customers, and advocacy, [11]. CCB can be measured by the combination of several dimensions. such as positive word of mouth (WOM), display of affiliation, partnership, cooperation, presenting feedback to the company, dissatisfied customer voice, policing of others, flexibility [12], compliance, altruism, personal initiative [13], customer participation, customer cooperation, positive wordof-mouth [14] and customer advocacy, [15].

2.2 Corporate Governance

The term "governance" is derived from the Latin verb "gubernare," which means "to steer" and typically refers to the steering of a ship, [16]. Corporate governance fosters investor confidence and trust, ensures business integrity, and creates long-term value, [17]. Corporate governance involves all stakeholders, encompassing various parties. shareholders, suppliers, including employees, customers, creditors, neighboring communities, and the public. Extreme proponents of stakeholder theory advocate including the environment, animal species, and future generations as stakeholders, [18]. Thus, reflecting on the governance can be done through their perception. Corporate governance can be measured by several principles, e.g., transparency, interdependence, accountability, fairness, social awareness, discipline, and responsibility [19], corporate reputation (ability to provide valued outcomes to stakeholders) [20] and customer complaint management, [21].

2.3 Self-Service Technology Quality

Technology has become one of the most important parts of a service firm's infrastructure and an integral part of the human elements of service for service firms' growth and development strategies, [22]. Particularly, "self-service technologies" (SSTs) have been recognized by firms as an essential tool for serving their customers, as this technology allows consumers to produce their own service experiences without any direct involvement of service personnel, [23]. Thus, improving the service quality of this technology is a key strategy to foster firms' business

growth. In the banking business, this self-service technology includes ATMs, SMS banking, mobile phone banking, and Internet banking. This technology quality can be measured based on several concepts, e.g., ease of use, convenience, cost savings, safety, and control [24]; convenience, user interface, time-saving, low risk of error service, customization [25]; functionality; enjoyment, security/privacy, assurance, design, convenience, and customization [26].

2.4 On-site Service Quality

The phrase service quality represents how well the service level matches customer expectations. Implicatively, its quality is often harder to measure than the qualitative issue of a tangible product. Service quality can be measured based on several concepts, e.g., the retail service quality scale used in the retail business measures service quality on 5 dimensions based on the SERVQUAL model [27], i.e., tangible, reliability, responsiveness, empathy, and assurance. Although this model is widely used for measuring on-site service quality, it falls short of the SERVPERF model [28], which measures only perceptions.

Due to the limitations of the previous empirical studies in directly connecting corporate governance, self-service technology quality, on-site service quality, and customer citizenship behavior, the following investigation of the earlier works can only show the possible linkage between them.

Corporate governance research shows that one aspect of CCB, customer loyalty, increases if customers know or are cognizant of the reputations of bank officials and management. Customers generally show more loyalty towards financial institutions whose personnel and officials are always willing to help them with their needs. The presence of competent management and integrity, indicative of good corporate governance, were identified as potential customer lovalty factors, Furthermore, it was determined that properly implemented corporate governance can serve as a enhance equity, transparency, and accountability in the banking sector, which is key to building up customer relationships, trust, satisfaction, and loyalty, [29]. With regards to self-service technologies, a preceding study brought to light the fact that some aspects of the technology, including perceived control, do not affect customer satisfaction significantly; on the other hand, an interesting effect

was found on that dimension by the perceived easiness of the technology, [30]. This means that customers are most likely contented with services that have simple usage procedures. In another study, self-service technology's effect on CCB was investigated, and it was found that this technology could promote trust and increase CCB, [31]. As a result of being more comfortable with self-service technologies, customers feel more secure with their banking services and develop a stronger connection to service delivery in the bank. A survey researching the impact of SST on behavioral intentions and users' loyalty found that SST positively influences users' perceptions of flexibility, control, and efficiency, [32]. This makes it clear that when customers can exploit self-service technology for their satisfaction and loyalty, CCB may grow.

Prior research has demonstrated that service quality enhances customer engagement and loyalty. Good service quality increases the likelihood that customers will be satisfied with the service they receive, increasing customer engagement and loyalty. In addition, customers are more likely to be pleased when commitments, requests, and expectations are met and executed accurately, [33]. Also, it was discovered that key aspects of service quality, such as dependability, responsiveness, and assurance, were directly linked to customer retention. The study also showed that all service quality dimensions had positive effects statistically significant on repurchase intention. These researches show that service quality is a major predictor of customer engagement, satisfaction, retention, and loyalty. The results in service quality are a main factor in customer satisfaction, guaranteeing repeat business even in after-sales relationships, [34].

3 Methodology

In this work, we employ the Multinomial Logistic Regression (MLR) technique to test our hypotheses since we considered the model imposed by a nonmetric dependent variable predicted by 4 metric variables. Even though the suggested size of the sample is at least 400 units with 10 units of the sample size per group of the dependent variable [35], we do our best under the limitation problem of the available data. We construct the model explained in the following steps to estimate the opportunity for the countries under study to fall into the target group.

Let define y_i by:

$$y_j = \begin{cases} 0 \\ 1 \end{cases} \quad , \quad j = 0, 1$$

From sigmoid function [36], we have:

$$p(y_1 = 1|x_i) = \frac{1}{1 + e^{-(y_1)}}, i = 1, 2, ..., n.$$
 (1)

where $y_1 = \beta_0 + \sum_{i=1}^{n} \beta_i x_i$ represents the usual linear

regression equation and x_i is independent variables and $p(y_1 = 1 | x_i)$ is the occurrence probability of the interested evince. β_0 and β_i are a constant and contribution of x_i to p. Although y_1 is infinite, $p(y_1 = 1 | x_i)$ is bounded by 1 and 0 as the special property of the logistic function.

By manipulating (1), we obtain the following logit equation [37] for the estimation purpose

Logit
$$p(y_1 = 1 | x_i) =$$

$$\ln\left(\frac{p(y_1 = 1 | x_i)}{1 - p(y_1 = 1 | x_i)}\right) = b_0 + \sum_{i=1}^n b_i x_i + \varepsilon_i,$$
 (2)

where $\frac{p(y_1 = 1|x_i)}{1 - p(y_1 = 1|x_i)}$ is the odds of the event under

interest and \mathcal{E}_i denotes the residual term.

Now, let define y_j by:

$$y_{j} = \begin{cases} 0 \\ 1 \\ 2, & j = 0, ..., 4 \\ 3 \\ 4 \end{cases}$$

From (2), we have the equation form, which we apply to the multinomial logistic regression case where j = 0 is excluded for reference purposes as follows:

$$p_{j}(y_{j} = j|x_{i}) = \frac{e^{y_{j}}}{1 + \sum_{j=1}^{J} e^{y_{j}}},$$
 (3)

where
$$y_j = \beta_j + \sum_{i=1}^n \beta_{i,j} x_{i,j}$$
. Therefore, the

probabilities for the reference category and the particular alternative j are as follows:

$$p_{1}(y_{1} = 1 | x_{i}) = \frac{e^{y_{1}}}{1 + \sum_{j=1}^{4} e^{y_{j}}},$$

$$p_4\left(y_4 = 4 \middle| x_i\right) = \frac{e^{y_4}}{1 + \sum_{i=1}^4 e^{y_i}}.$$
 (4)

and

$$p_0(y_0 = 0|x_i) = \frac{1}{1 + \sum_{i=1}^4 e^{y_i}},$$
 (5)

Combining (4), (5), (6), we obtain the following logit models, [38].

$$\operatorname{Logit}(p_{1}) = \ln\left(\frac{p_{1}(y_{1} = 1 | x_{i})}{p_{0}(y_{0} = 0 | x_{i})}\right) = b_{1} + \sum_{i=1}^{4} b_{i,1} x_{i,1} + \varepsilon_{i,1} ,$$

$$\vdots$$

$$\operatorname{Logit}(p_{4}) = \ln\left(\frac{p_{4}(y_{4} = 4 | x_{i})}{p_{0}(y_{0} = 0 | x_{i})}\right) = b_{4} + \sum_{i=1}^{4} b_{i,4} x_{i,4} + \varepsilon_{i,4} . \tag{6}$$

The marginal effects are the slope of the prediction function at a given value of the explanatory variable, which informs about the change in predicted probabilities due to a change in a particular predictor. These effects allow for the conclusion of the direction and magnitude of the relationship between an independent and dependent variable, which can be written as follows, [39].

$$ME_{j} = \frac{\partial p(y=j|x_{i})}{\partial x_{i}} = p_{j}(b_{kj} - \overline{b_{i}}),$$
 (7)

This study in questionnaires was brought into play to collect data on demographic information concerning participants and the perception of CCB, which was measured using a 5-point Likert scale and an instrument developed earlier by [13], [40].

Three academicians employed the item objective congruence index (IOC) [41] to validate the questionnaire. Additionally, the reliability of the questionnaire was assessed through administration of 30 pilot questionnaires, which resulted in a Cronbach's alpha [42] value greater than the cutoff criterion of 0.7. After successfully verifying validity and reliability, hard copies of the questionnaires were distributed to the target population within the study area. From the 1.000 questionnaires handed out, we received 531 back. We then analyzed the questionnaires and found only a few incomplete ones, so with a total of 450 questionnaires, we started to explore them. These forms were inputted into an exploratory factor analysis to determine their construct validity.

The study was conducted using primary data collected from bank customers who live in six districts of Bangkok Metropolitan, including Min Buri, Lat Krabang, Saphan Sung, Bangkapi, Lat Phrao, and Chatuchak, in 2022. The data collection procedure used surveys as tools, followed by stratified and random sampling techniques in different districts.

4 Main Results

Table 1 illustrates 450 valid data sets split into five categories of customer citizenship behavior (CCB) that differ from very low to very high. The percentage column shows that 47.1 percent of the valid cases have been classified as having extremely high CCB. The model's effectiveness was checked using the Chi-square test represented in Table 2. The chi-square value equals 196.584, and the corresponding p-value is 0.000, confirming that the dependent variable has a significant relationship with the set of independent variables system. According to the Nagelkerke R-square in Table 3, the variation among the eight predictor variables accounted for 42.60 percent of the total variation in CCB level.

Using a very high level of CCB as the reference category, Table 4 (Appendix) reveals the following outcomes. At the neutral level of CCB (level 3), self-service technology quality (SST) is negative and statistically significant (B = -2.001, S.E. = 0.483, P-value = 0.000). This indicates that for every one-unit increase in SST, the odds of reaching the

neutral level change by a factor of Exp(B) = 0.783 percent, indicating a decline in the odds. This suggests that the likelihood of a customer having a very high level of CCB increases with the SST level. This interpretation also extends to on-site service quality (OQS) and corporate governance (CGG). Comparing customers in group 5 (41–45-year-olds) to those in group 8 (56–60-year-olds) reveals that group 5 customers are significantly more likely to have a very high level of CCB at a 5 percent significance level. With education, however, customers with a high school diploma or a high school vocational certificate are significantly more likely to have a neutral level of CCB than those with a bachelor's degree or higher.

Moreover, compared to a very high level of CCB, the SST, OQS, and CGG are negative and statistically significant at 5 percent, 10 percent, and 5 percent, respectively. This indicates that the likelihood of attaining the high-level change decreases with each unit increase in SST, OQS, and CGG. This suggests that the greater the SST, OQS, and CGG levels, the greater the likelihood that a customer will have a very high level of CCB. Females are more likely than males to have extremely high levels of CCB at the 10 percent significant level. With education, customers in groups 1 and 4 are significantly more likely to have a high level of CCB, at a 10 percent and 5 percent significance level, respectively, compared to those beyond a bachelor's degree. Also, customers in income group 1 (less than 5,000 baht) are likelier to have a high CCB level than those with incomes above 50,000 baht.

Therefore, we can conclude that nations capable of enhancing their SST, OQS, and CGG will increase their CCB. Age and gender will also increase the level of CCB, whereas education and income will decrease it in this instance.

The evidence of the positive effects of SST, OQS, and CGG on CCB can be examined by examining the marginal effects shown in Table 5. Based on Table 5, it was determined that a one-point increase in SST decreased the probability of falling into the neutral level of CCB by 12.04 percent and increased the likelihood of falling into the very high level of CCB by 17.56 percent. If OQS increases by 1 point, the probability of falling into the neutral level of CCB decreases by approximately 9.96 percent, and the likelihood of falling into the very high level of CCB increases by roughly 13.77

percent. An increase of 1 point in CGG reduces the probability of falling into the high level of CCB by approximately 7.70 percent. In contrast, it increases the likelihood of falling into the very high level of CCB by roughly 12.23 percent.

Thus, the marginal effect analysis results demonstrate that SST, OQS, and CGG can positively affect the level of CCB.

Table 1. Valid number of CCB in each group

CBCLASSS	Frequency	Percent
3	66	14.7
4	172	38.2
5	212	47.1
Total	450	100

Source: Author's calculation

Table 2. Model Fitting Information

rable 2: Model I tung information					
Model	Model Fitting Criteria			Likelihood	
				Ratio Tests	
	-2 Log	Chi-	df	Sig.	
	Likelihood	Square			
Intercept	857.967				
Final	661.384	196.584	52	0.000	

Source: Author's calculation

Table 3. Pseudo R-Square

Cox and Snell 0.369

Nagelkerke 0.426

McFadden 0.229

Source: Author's calculation

Table 4. Marginal effect analysis

Var.	Marginal	Std. errs.	Z	P-value
	effect			
TT				_
1	-	.0368007	-3.27	0.001
	.1203769			
2	-	.0560508	-0.99	0.325
	.0552104			
3	.1755873	.0512243	3.43	0.001
QS				
1	-	.0369013	-2.70	0.007
	.0995943			
2	-	.0556563	-0.68	0.494
	.0380958			
3	.1376901	.0513011	2.68	0.007
CG				
1	-	.0296319	-1.53	0.126
	.0453127			
2	-	.0455584	-1.69	0.091
	.0769614			

Var.	Marginal effect	Std. errs.	Z		P-value
3	.1222741	.041921		2.92	0.004

1=CCB level 3, 2=CCB level 4, 3=CCB level 5,

Source: Author's calculation

5 Discussion

The study results are consistent with previous research findings, highlighting the need for banks to improve their competitiveness by developing corporate governance, which involves increasing transparency, accountability, and fairness, promoting trust and customer loyalty, [18]. The analysis of this research results shows that improving corporate governance significantly increases the chances of banks achieving higher CCB levels. This indicates that bank customers are more likely to engage in positive behaviors and voluntarily support the activities and businesses of the bank when they perceive the bank as well-managed and trustworthy, [20], [29].

Regarding SST, the analysis results show that higher SST quality increases the chances of achieving very high CCB levels. An increase in SST quality was found to reduce the chances of attaining neutral CCB levels but increase the chances of achieving very high CCB levels. These findings are consistent with previous studies that explored the impact of transaction service quality on perceived flexibility, creating a sense of control and enhancing efficiency, which in turn lead to building trust among customers and contribute to increasing CCB levels, [26], [31]. The analysis also supports the findings of previous studies found that SSTs help increase customer satisfaction and loyalty because SSTs such as ATMs, mobile banking, and internet banking provide customers with convenience, which is a factor in creating satisfaction and loyalty, [24], [25] and leads to opportunities to increase the level of CCB

For the level of on-site service quality, which is an important foundation for increasing customer satisfaction and loyalty, the results of the data analysis show that improving the quality of service on-site significantly increases the chances of higher CCB levels. Increasing the quality of on-site services reduces the chances of neutral CCB levels but increases the chances of high CCB levels. This result supports previous studies' findings that service quality is directly linked to customer satisfaction,

loyalty, and engagement [3 4], which can lead to increased CCB levels.

In the case of the impact of demographic factors, i.e., age, gender, education, and income, on CCB, it was found that younger customers aged 41-45 years and women have higher CCB levels. In addition, customers with low income tend to have high CCB levels, while customers with high incomes have low CCB levels. These results provide insights into the behavior of different demographic groups towards services and opportunities for CCB development. Therefore, strategies consistent with the factors affecting CCB found in this study will increase the chances of banks successfully increasing their CCB levels.

6 Theoretical Implication

This research has provided evidence of the connections between corporate governance, self-service technology, on-site service quality, and CCB. The CCB improvement framework developed in this research could be extended by adding other potential factors or layers of variables that are expected to impact CCB. These may include customer trust in the bank, customer experience of the services, customer satisfaction with the services, and customer loyalty.

7 Managerial Implication

Implementing corporate governance in banks is important. Good governance policies and practices are an effective way to improve corporate governance. Such policies and practices should clearly state the roles and responsibilities of bank representatives and provide reasons for how the bank provides services to customers. In addition, banks should improve the quality of services, as the quality can affect customer feedback or the bank's reputation. Banks may design new service processes by applying technology and modern management methods, such as welcoming and caring for customers from the beginning to the end of the service process through technology. Banks may also create a service environment that provides convenience and allows service recipients to enjoy themselves while receiving services. These methods will increase the opportunity to improve the CCB level and the bank's long-term success.

8 Limitations and Future Research

The study has some limitations. First, the study was conducted in limited samples and only within the banking sector. Second, the study does not consider some potential factors and layers of variables that could affect CCB. Future research could expand the sample size and get into other sectors to overcome these limitations. Moreover, in the future, researchers may include other potential factors and layers, e.g., through structural equation modelling techniques, to better reflect the complexities of the CCB determinants.

9 Conclusion

With the increasing competition in the banking industry and customer expectations, banks have to focus on building customer citizenship behavior (CCB) to retain customers and increase the chances creating Therefore. business success. understanding the factors that affect the level of CCB is important for bank executives. Therefore, to provide data to support the development of CCB strategies for banks, this study aims to examine the factors that affect the level of CCB of bank customers. This study used data from residential bank customers in six districts of Bangkok, Thailand, and applied exploratory factor analysis (EFA) and multinomial logistic regression techniques to the data from 4 5 0 valid questionnaires. The EFA latent variable analysis found three significant latent variables, i.e., self-service technology quality, on-site service quality, and corporate governance. After analyzing with multinomial logistic regression and incremental impact techniques, the results indicated that banks could achieve the highest level of CCB by improving corporate governance, self-service technology quality, and on-site service quality. Therefore, banks should focus on practices that support the improvement of these factors.

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Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used Grammarly to rewrite and check grammar. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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APPENDIX

Table 5. Parameter Estimates **BCLSS**^a В Wald Sig. Exp(B)Intercept 16.351 45.543 .000

GT -2.001 17.187 .000 .135 QS -1.571 11.094 .001 .208 GG -1.038 7.016 .008 .354 GEN=0] 525 1.723 .189 .592 GEN=1] 0b .453 .501 .510 GE=1] 674 .453 .501 .510 GE=2] -1.144 1.569 .210 .319 GE=3] 391 .189 .664 .676 GE=4] -1.175 1.511 .219 .309 GE=5] -2.631 6.910 .009 .072 GE=6] -1.403 2.253 .133 .246 GE=7] -1.713 2.301 .129 .180 DU=1] 1.252 1.6
GG -1.038
GG -1.038
AEN=0] 525 1.723 .189 .592 AEN=1] 0b .6EN=1 .674 .453 .501 .510 AGE=2] -1.144 1.569 .210 .319 AGE=3] 391 .189 .664 .676 AGE=3] 391 .189 .664 .676 AGE=4] -1.175 1.511 .219 .309 AGE=5] -2.631 6.910 .009 .072 AGE=6] -1.403 2.253 .133 .246 AGE=7] -1.713 2.301 .129 .180 AGE=8] 0b DU=1] 1.252 1.612 .204 3.496 DU=2] 1.370 2.580 .108 3.934 DU=3] 2.024 5.538 .019 7.571 DU=4] 1.180 2.114 .146 3.254 DU=5] 0b .005 .946 1.072 OCC=1] .261 .079 .779 1.299 OCC=3] .069 .005 .946
GEN=1] 0b GE=1] 674 .453 .501 .510 GE=2] -1.144 1.569 .210 .319 GE=3] 391 .189 .664 .676 GE=4] -1.175 1.511 .219 .309 GE=5] -2.631 6.910 .009 .072 GE=6] -1.403 2.253 .133 .246 GE=7] -1.713 2.301 .129 .180 GE=8] 0b .109 .180 .180 GE=8] 0b .108 .3934 DU=1] 1.252 1.612 .204 3.496 DU=2] 1.370 2.580 .108 3.934 DU=3] 2.024 5.538 .019 7.571 DU=4] 1.180 2.114 .146 3.254 DU=5] 0b .779 1.299 DCC=1] .261 .079 .779 1.299 DCC=3] .069 .005 .946 1.072 DCC=4] -1.427 1.5
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GE=2] -1.144 1.569 .210 .319 GE=3]391 .189 .664 .676 GE=4] -1.175 1.511 .219 .309 GE=5] -2.631 6.910 .009 .072 GE=6] -1.403 2.253 .133 .246 GE=7] -1.713 2.301 .129 .180 GE=8] 0 ^b DU=1] 1.252 1.612 .204 3.496 DU=2] 1.370 2.580 .108 3.934 DU=3] 2.024 5.538 .019 7.571 DU=4] 1.180 2.114 .146 3.254 DU=5] 0 ^b CCC=1] .261 .079 .779 1.299 CCC=2]163 .029 .864 .849 CCC=3] .069 .005 .946 1.072 CCC=4] -1.427 1.582 .208 .240 CCC=5] 0 ^b NC=1] .986 .406 .524 2.680 NC=2]260 .050 .824 .771 NC=3] .347 .091 .763 1.415 NC=4]388 .117 .732 .679 NC=5] .777 .444 .505 .460 NC=6] 1.142 1.129 .288 3.134 NC=7] 1.337 1.408 .235 3.806
GE=3]391 .189 .664 .676 GE=4] -1.175 1.511 .219 .309 GE=5] -2.631 6.910 .009 .072 GE=6] -1.403 2.253 .133 .246 GE=7] -1.713 2.301 .129 .180 GE=8] 0 ^b DU=1] 1.252 1.612 .204 3.496 DU=2] 1.370 2.580 .108 3.934 DU=3] 2.024 5.538 .019 7.571 DU=4] 1.180 2.114 .146 3.254 DU=5] 0 ^b DCC=1] .261 .079 .779 1.299 DCC=2]163 .029 .864 .849 DCC=3] .069 .005 .946 1.072 DCC=4] -1.427 1.582 .208 .240 DCC=5] 0 ^b NC=1] .986 .406 .524 2.680 NC=2]260 .050 .824 .771 NC=3] .347 .091 .763 1.415 NC=4]388 .117 .732 .679 NC=5]777 .444 .505 .460 NC=6] 1.142 1.129 .288 3.134 NC=7] 1.337 1.408 .235 3.806 NC=8] 0 ^b
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GE=5] -2.631 6.910 .009 .072 GE=6] -1.403 2.253 .133 .246 GE=7] -1.713 2.301 .129 .180 GE=8] 0 ^b DU=1] 1.252 1.612 .204 3.496 DU=2] 1.370 2.580 .108 3.934 DU=3] 2.024 5.538 .019 7.571 DU=4] 1.180 2.114 .146 3.254 DU=5] 0 ^b DCC=1] .261 .079 .779 1.299 DCC=2] -1.63 .029 .864 .849 DCC=3] .069 .005 .946 1.072 DCC=4] -1.427 1.582 .208 .240 DCC=5] 0 ^b DCC=1] .986 .406 .524 2.680 DCC=1] .986 .406 .524 2.680 DCC=3] .347 .091 .763 1.415 DCC=4] -388 .117 .732 .679 DCC=4] -388 .117 .732 .679 DCC=6] 1.142 1.129 .288 3.134 DCC=7] 1.337 1.408 .235 3.806 DCC=8] 0 ^b
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DU=1 1.252 1.612 .204 3.496 DU=2 1.370 2.580 .108 3.934 DU=3 2.024 5.538 .019 7.571 DU=4 1.180 2.114 .146 3.254 DU=5 0b .00 .779 1.299 CCC=1 .261 .079 .779 1.299 CCC=2 163 .029 .864 .849 CCC=3 .069 .005 .946 1.072 CCC=4 -1.427 1.582 .208 .240 CCC=5 0b NC=1 .986 .406 .524 2.680 NC=2 260 .050 .824 .771 NC=3 .347 .091 .763 1.415 NC=4 388 .117 .732 .679 NC=5 777 .444 .505 .460 NC=6 1.142 1.129 .288 3.134 NC=7 1.337 1.408 .235 3.806
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NC=1] .986 .406 .524 2.680 NC=2] 260 .050 .824 .771 NC=3] .347 .091 .763 1.415 NC=4] 388 .117 .732 .679 NC=5] 777 .444 .505 .460 NC=6] 1.142 1.129 .288 3.134 NC=7] 1.337 1.408 .235 3.806 NC=8] 0 ^b
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NC=7] 1.337 1.408 .235 3.806 NC=8] 0 ^b
$NC=8$ 0^{b}
$NC=8$ 0^{b}
tercept 7.246 22.917 .000
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ST787 5.996 .014 .455
QS557 3.255 .071 .573
GG751 8.781 .003 .472
EN=0]445 3.139 .076 .641
$EN=1$ 0^b
GE=1]286 .187 .666 .751
GE=2]342 .333 .564 .710
.GE=3]195 .106 .744 .823
GE=4]164 .068 .794 .849
.GE=5]793 1.660 .198 .452
.GE=6]203 .112 .738 .816
GE=7]762 1.175 .278 .467
<u>-</u>
<u>,</u>
DU=1] 1.111 3.619 .057 3.038
DU=3] .734 2.294 .130 2.083
-
DU=2] .495 1.004 .316

BCLSSa	В	Wald	Sig.	Exp(B)
[EDU=4]	.925	3.893	.048	2.523
[EDU=5]	$0_{\rm p}$			
[OCC=1]	.987	2.441	.118	2.684
[OCC=2]	.881	1.976	.160	2.414
[OCC=3]	.791	1.331	.249	2.205
[OCC=4]	.118	.024	.876	1.126
[OCC=5]	$0_{\rm p}$			
[INC=1]	1.937	4.103	.043	6.939
[INC=2]	.224	.119	.730	1.251
[INC=3]	.010	.000	.988	1.010
[INC=4]	271	.182	.670	.763
[INC=5]	.010	.000	.987	1.011
[INC=6]	.561	.826	.363	1.753
[INC=7]	.022	.001	.975	1.022
[INC=8]	$0_{\rm p}$			
m1 0				_

a. The reference category is: 5.00. b. This parameter is set to zero because it is redundant.

Source: Author's calculation

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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