Preferences Of Accountancy Graduating Students Of A Cpa Review Center

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ABSTRACT: : Conjoint Analysis was used in this study to ascertain the preferences of accountancy graduates from a CPA review institution in Davao City. The study also established the aggregate model and the relative importance of the CPA review center characteristics, including track record, reviewers, conduciveness, review materials, and affordability in contributing to the overall value of review centers. Based on the results, "track record" is the most important attribute and "affordability" is the least important attribute, while other CPA review center attributes were also found important in determining the review centers' overall utility. On the aggregate level the preferred design model of the respondents is described by: (a) Track Record-produced board topnotchers/placers and has an above average national passing rate; (b) Reviewer-author of a book, a board placer and at least 15 years' experience as instructor; (c) Conduciveness- less than 50 reviewees in a room; (d) Review Materials-comprehensive review materials with three years recency; and (e) affordability-Php10,000 below.

Keywords: Marketing; Preference, Conjoint Analysis; Segmentation; Targeting; Positioning; and Attributes..

INTRODUCTION

Passing the Certified Public Accountant (CPA) board exam is not simple. It requires a lot of planning, grit, persistence, and prayer.

Preparation, which includes registering oneself in a respected review center to get more knowledge and to be taught to handle issues effectively and efficiently, is one of the variables contributing to an aspirant's success in sitting the CPA board test.

Avercamp (2003) says that the CPA board exam is among the most difficult professional licensing tests. In the US, even though candidates can take just one section at a time, the CPA exam is so rigorous that nearly half of the candidates sitting for any given section will receive a failing score. A challenging, mentally exhausting test that demands taking abilities is the CPA exam.

Additionally, passing the CPA exam comes at a big expense. It requires a lot of effort to acquire the necessary knowledge and apply it in a test-taking setting to receive a grade of 75 or higher. According to Narayan et al. (2002), less than 20 percent of the 14,000 aspirants become successful each year as they take the said exam.

In the Philippines, Abrugar (2011) adds that the CPA board examination is considered one of the most difficult professional examinations requiring a lot of preparation, hard work, patience, and confidence to pass successfully.

Today, there are 100,000 recognized CPAs in the country since its inception. CPA passers 2013 consider it difficult to pass the CPA board exam as the exam last October 2013 revealed only 41 percent or 4,246 of 10,396 passed it. The lower result was released in May 2013, in which only 27

percent or 1,533 of 5,665 takers passed the exam (www.prc.gov.ph, 2013ab). This number is not new. Many had taken it, dreamt, prepared, and failed.

Locally, accountancy graduates from different schools in Davao City were not spared by these difficulties in passing the CPA board exam. In the May 2013 CPA board exam, an Ateneo de Davao College graduate topped the exam. Still, the overall result shows only 35 percent of the graduates from different schools in Davao City who offered accounting courses passed it. However, the results increased last October 2013 when 56 percent of hopefuls passed (www.prc.gov.ph, 2013ab). Still, many of the hopefuls were not able to pass. Several factors contribute to these low passing rates, including inadequate facilities, a lack of training materials, and poor English language proficiency, which reflect deficiencies in basic education.

To address the problems that arise, the researcher looked at the students' preparation in choosing a CPA review center. These CPA review centers and those planning to establish in the future must know the preferred attributes of accountancy graduating students so that they can design review services. Hence, this study is aimed at helping them.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The importance of a CPA review center's service attributes can be determined based on the preferences of the accountancy graduating students. The attributes are affected by the perceptions of the accountancy graduating students on the levels that define an attribute.

In this study, the CPA review center attributes such as track record, reviewers, conduciveness, review materials, and affordability are the independent variables influencing the preferences of accountancy graduating students of a CPA review center in Davao City.

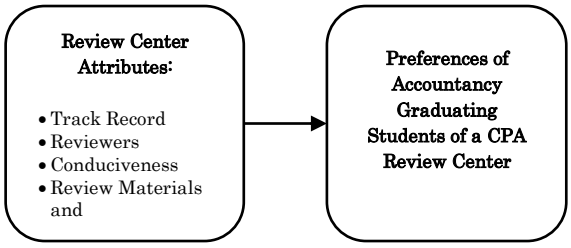

Figure 1. Conceptual Framework of the Study

RESEARCH METHODOLOGY

This study made use of the causal-explanatory research method. Explanatory research aims to comprehend or explain a link between elements. It provides more precise answers to "why" inquiries (David, 2002), whereas causal research establishes cause-and-effect relationships between variables by performing experiments (Brown and Suter, 2012).

The responses of the graduating accountancy students from Ateneo de Davao University, Holy Cross of Davao College, Jose Maria College, University of the Immaculate Conception, and the University of Mindanao served as the main sources of data.

There were two sections to the survey questionnaire. Part 1 details the respondents' demographics, including their age, sex, civil status, gross family monthly income, educational background, and level of accreditation for their accounting program. Part 2 contained the ten (10) hypothetical designs comprising the combinations of attributes and levels generated using the

Statistical Package for the Social Sciences (SPSS). Instead of using hold-out designs, a split-half validation technique was used. The intention is to limit the number of designs, thus addressing the concern of respondent burnout.

A complete enumeration was employed surveying the 280 graduating accountancy students from the schools and universities who took part of the study.

The study was materialized following the stages in designing a conjoint experiment according to Hair, et al. (2009):

Stage 1: *Research Problem*. The problem statement was developed to address the objectives, which sought to assess the relative importance and contribution of each attribute—track record, reviewers, conduciveness, review materials, and affordability—in establishing the best design based on the preferences of accountancy graduating students.

Stage 2: *Creating a Conjoint Methodology*. In this study, the five (5) attributes were used in the traditional conjoint analysis, and respondents received a non-metric full profile presentation of the results. The study also employed the additive model to calculate the overall utility. The conjoint methodology was maximized as follows:

Designing the Stimuli (Selecting and Defining Attributes and Levels). Seven (7) attributes were identified which generated 2,187 combinations using factorial design (3x3x3x3x3x3x3). Additionally, Evans (2008) cautioned against "information overload" and found it challenging to evaluate the more than six (6) attributes. Additionally, a list of too many features can significantly increase the workload for respondents, according to Mclennon (2002), as many attributes necessitate the evaluation of various product profiles. A self-administered questionnaire was distributed to the thirty-three (33) accountancy graduating students from the Notre Dame University in Cotabato City to address the issue. The students selected the five most preferred attributes from the initial list of seven (accessibility, affordability, conduciveness, review materials, reviewers, schedule of review and track record) attributes. The respondents were likely to enroll as reviewers in CPA review centers in Davao City.

The hypothetical designs of an accountancy review center in Davao City were built based on the five characteristics that key informants rated highest in importance: affordability, conduciveness, review materials, reviewers, and track record.

Designing the Stimuli (Specifying the Basic Model Form). The aggregate utilities' values were calculated using the additive model equation:

> Total Utility of a CPA Review Center a to e = utility level *a* for Track Record (TR) + utility level *b* for Reviewers (R) + utility level *c* for Conduciveness (C) + utility level *d* for Reviewer Materials (RM) + utility level *e* for Affordability (A).

Data Collection (Choosing a Presentation Method and Selecting a Preference Measure). The full-profile method in presenting ten (10) hypothetical design combinations was used as shown in Table 1. The non-metric method was

employed to determine the rank of each design based on the preferences of the accountancy graduating students of a CPA review center in Davao City.

Data Collection (Creating the Stimuli). A total of 162 (3x3x3x3x2) design combinations will be produced by using a factorial design with five attributes, three levels for each of the four attributes, and two levels on one of the attributes. For a respondent to evaluate, this is too many. The Statistical Package for the Social Sciences (SPSS) software implemented a fractional factorial design to solve the issue and produce the data required for conjoint analysis. Using the SPSS program, sixteen (16) orthogonal designs were produced. Hair et al. (2009) suggest that removing profiles from the orthogonal design and presenting respondents with believable designs makes it possible to reduce some profiles using specialized conjoint designs.

Using the unique role of price (affordability) as a factor (attribute) (Hair et al., 2009), six (6) unbelievable designs were detected from the sixteen (16) orthogonal designs. The six (6) unbelievable designs were eliminated from the study because they either have excellent attributes but are low on price or have poor attributes but are high on price. The elimination of the six (6) unbelievable designs still meets the minimum number of designs required for conjoint analysis (Hair, et al., 200).

The minimum number of designs of ten (10) were generated based on the following computations:

Minimum Number of Designs = Total Number of Levels Across All Attributes – Number of Attributes + 1
= 14 total levels – 5 total attributes + 1

= <u>10 design combinations</u>.

Table 1. Design Combinations Generated from SPSS

DN	R	TR	RM	C	A
1	Subject matter expert + at least 10 years of experience	Equal to national passing rate	Comprehensive review materials, with 3 years recency	With 51-100 reviewees in a room	Php 10,000 below
2	Author of a book + board placer + at least 15 years' experience	Produced board topnotchers/placers + above the average national passing rate	Comprehensive review materials, with 3 years recency	With 51-100 reviewees in a room	Php 10,001 up
3	Subject matter expert + at least 10 years of experience	Produced board topnotchers/placers + above the average national passing rate	Concise older than 5 years	Less than 50 reviewees in a room	Php 10,001 up
4	Author of a book + board placer + at least 15 years' experience	Equal to national passing rate	Concise older than 5 years	More than 100 reviewees in a room	Php 10,000 below
5	At least 5 years of experience	Produced board topnotchers/placers + above the average national passing rate	Comprehensive with more than 3 to 5 years recency	With 51-100 reviewees in a room	Php 10,000 below
6	Subject matter expert + at least 10 years of experience	Below to national passing rate	Comprehensive review materials, with 3 years recency	Less than 50 reviewees in a room	Php 10,000 below
7	Author of a book + board placer + at least 15 years' experience	Produced board topnotchers/placers + above the average national passing rate	Comprehensive review materials, with 3 years recency	Less than 50 reviewees in a room	Php 10,001 up
8	At least 5 years of experience	Produced board topnotchers/placers + above the average national passing rate	Concise older than 5 years	Less than 50 reviewees in a room	Php 10,000 below
9	Author of a book + board placer + at least 15 years' experience	Equal to national passing rate	Comprehensive with more than 3 to 5 years recency	Less than 50 reviewees in a room	Php 10,001 up
10	Author of a book + board placer + at least 15 years' experience	Below to national passing rate	Comprehensive with more than 3 to 5 years recency	Less than 50 reviewees in a room	Php 10,000 below

Legend: DN = Design Number; R = Reviewers; TR = Track Record; C = Conduciveness; RM = Review Materials; and A = Affordability

Data Collection (Form of Survey Administration). To conduct the survey, permission from the schools was requested. The survey was carried out once the letter was approved. The respondents received a survey form with an attached consent letter.

Stage 3: *Assumptions*. The basic assumptions used in this study were 1) A CPA review center is a bundle of attributes such as track record, reviewers, conduciveness, review materials and affordability; and 2) The attributes have significant importance in determining the preferences of accountancy graduating students of CPA review center in Davao City.

Stage 4: *Estimating the Conjoint Model and Assessing Overall Fit.* Because respondents will rank the designs, the non-metric method is used in this study's estimation technique. Using non-metric rank-order data, Spearman's rho or Kendall's tau are used to evaluate the goodness-of-fit.

Stage 5: *Interpreting the Results*. The 280 respondents' information was compiled and examined. The aggregate model and relative importance scores were calculated using the respondents' information.

To assess the relative importance of the attributes in determining the preferences of accountancy graduating students of a CPA review center in Davao City, relative importance scores were calculated. At the aggregate level, the utilities were used to determine the model.

Stage 6: *Validation of the Conjoint Results*. Grover and Vriens (2006) state that two model validation methods are frequently used to assess the quality of a conjoint model.

One method is known as hold-out validation, and the other is market share prediction. This is because SPSS software cannot generate hold-out task using the minimum number of designs (in this case, the 10 designs).

The hold-out respondents were used to evaluate the generalizability of the models and market simulations (Stage 7) were conducted to determine the market shares of the models and an existing market.

The hold-out validation can be done using the hold-out respondents to evaluate the model's generalizability to the main respondents. The researcher used Yamane's Formula in determining the 164 main respondents applying the following formula:

$n = N / (1 + Ne^2)$

where n = number of sample size,

N = Total population and

e = 5 percent degree of error

n = 280/ [1+ (280*0.0025)]

n = 280/1.70

n = <u>164</u>

Stratified random sampling, according to David (2002), is the process of selecting a random sample from subgroups or strata (schools) into which a population (280 respondents) has been subdivided.

According to Black (2005), proportionate stratified random sampling occurs when the percentage of the sample taken from each stratum is proportionate to the percentage of the population that each stratum represents (e.g Ateneo 46% of 164 = 75).

Table 2 shows the distribution of respondents using the proportionate stratified random sampling technique. MS Excel rand () command and sort (largest to smallest) were used to randomly identify the respondents in every school.

The remaining number of surveyed respondents was considered a hold-out for evaluating the results' generalizability.

Table 2. Distribution of Respondents

Schools	SR	%	MR	HR
Ateneo de Davao University	128	46%	75	53
Holy Cross of Davao College	58	21%	34	24
Jose Maria College	9	3%	5	4
University of the Immaculate Conception	24	9%	14	10
University of Mindanao	61	22%	36	25
Total	**280**	**100%**	**164**	**116**

Legend: SR = Surveyed Respondents; MR = Main Respondents; and HR = Holdout Respondents

Stage 7: *Managerial Application of Conjoint Analysis.* Conjoint can assist in identifying customer needs, prioritizing those needs, and translating those needs into actual strategies (Hair et al, 2009).

Choice Simulator. This study used market simulations to predict the market shares of accountancy graduating students on the aggregate model, rank 1 design, and rank 10 design. The market shares of each design were calculated using the SPSS software's Maximum Utility model, Bradley-Terry-Luce model, and Logit model. To determine the rank 1 and rank 10 designs, the researcher ran a pre-simulation on all ten (10) designs to determine the main respondents' preference scores on each. The design with the highest preference score was ranked first, and the design with the lowest preference score was ranked tenth

RESULT AND DISCUSSION

The overall or aggregate importance value rating shows that "track record" is the most preferred attribute (31.85 percent) followed by "reviewers" (21.49 percent) "conduciveness" (20.16 percent) "review materials" (14.59 percent), and the overall least preferred attribute "affordability" (11.92 percent). This shows that the respondents are willing to pay more for the review provided that the review center has a proven "track record" of producing top notchers and has a high passing rate.

Further, the respondents differ in their preferences of the attributes, indicating individual perceptions of a review center's features. Any change in a respondent's perception in any of the attributes will also change the results of the importance values of the other attributes.

The preference of the accountancy graduating students was consistent with the consumer behavior theory of Reynolds (2005), which says that the objective of the consumer is to maximize the utility that can be derived given their preferences, income, and prices by choosing the best possible attributes of a review center at a lower cost. This was also the case of the study of Campbell, Nelson, Ebel, Dozier, and Hockema (2004), where respondents preferred the best attributes at a lower price as well as the study of Dorotan (2012) where the preference for engineering reviewers are attributed with excellent features at a low cost. Dorotan (2012) explains that such design is impossible to pursue by the review center because best attributes would also entail higher cost, this is called a trade-off.

The total utility using the additive formula is shown below:

Total Utility = $U_{TR}+U_{R}+U_{C}+U_{RM}+U_{A}$+Constant

= $2.84_{TR}+1.06_{R}+0.52_{C}+0.47_{RM}+(0.76)_{A}+5.12_{Constant}$

= **9.25**

The utility scores of each of the attribute was computed based on the Utility Score results presented in Table 3:

Table 3. Utility Scores for the Levels of Each Attribute

Attributes	Levels	Utility
Track Record U_{TR}	Produced board topnotchers/placers + above the average national passing rate	**2.84**
	Equal to national passing rate	0.20
	Below to national passing rate	-3.03
Reviewers U_R	Author of a book + board placer + at least 15 years' experience	**1.06**
	Subject matter expert + at least 10 years of experience	0.68
	At least 5 years of experience.	-1.73
Conduciveness U_C	Less than 50 reviewees in a room	**0.52**
	With 51-100 reviewees in a room	-0.63
	More than 100 reviewees in a room	0.11
Review Materials U_{RM}	Comprehensive review materials, with 3 years recency	**0.47**
	Comprehensive with more than 3 to 5 years recency	0.46
	Concise older than 5 years	-0.93
Affordability U_A	10,000 below	**-0.76**
	10,001 up	-1.51
	(Constant)	**5.12**
	Total Utility	**9.25**
	Kendall's Tau	*1.00*
	Significance	*0.00*

Finally, results show that the aggregate total utility score is 9.25. Table 4 shows the sample model derived from the overall utility score of the accountancy graduating students.

Table 4. Aggregate Model of the Preferences of Accountancy Graduating Students of a CPA Review Center in Davao City.

Aggregate Model				
TR	**R**	**C**	**RN**	**A**
Produced board topnotchers /placers + above the average national passing rate	Author of a book + board placer + at least 15 years' experience	Less than 50 reviewees in a room	Comprehensive review materials, with 3 years recency	Php10,000 below

Legend: TR = Track Record; R = Reviewers; C = Conduciveness; RM = Review Materials; and A = Affordability

Hold-out Validation and Simulations. To test for the generalizability of the model, hold-out validation was conducted. Results showed significance on total utilities between main and hold-out respondents, t (278) =2.482, p=0.014 which validates the model in which the result of the t-test means that the preference of the hold-out respondents is closely like the preference of the main respondents.

Simulation and Market Shares of Aggregate Model, Rank 1 Design and Rank 10 Design. Another test of generalizability is through the conduct of market simulations. Table 5 shows the simulated preference scores of each design and ranking based on the preference of accountancy graduating students of a review center in Davao City. Based on the simulation, Design Number 7 got the preference score of 8.494, while the least preferred design is Number 6 with only 3.006 preference score.

Table 5. Ranking and Preference Scores of Each Design Combination.

Rank	Preference Score	Design Number
1	**8.494**	**7**
2	7.348	2
3	6.713	3
4	5.841	9
5	5.305	5
6	5.085	1
7	5.061	8
8	4.793	4
9	3.372	10
10	**3.006**	**6**

The design models in Table 6 (SPSS Result) can be simulated to determine their market share. Results show that the aggregate model got the highest market share at 54.00 percent using the Maximum Utility model, 43.40 percent using Bradford-Terry-Luce (BTL) model, and 55.40 percent using the Logit model. The rank 1 design (design 7) closely follows the Bradley-Terry-Luce result at 41.3%, while the rank 10 design (design 6) is only at 15.3%. The market share results show further that the aggregate model can be generalized.

Table 6. Simulation Results of Non-Metric Conjoint Analysis Aggregate Model, Rank 1 and Rank 10 Designs.

Preference Probabilities of Simulations[b]				
Card Number	**ID**	**Maximum Utility[a]**	**Bradley-Terry-Luce**	**Logit**
Aggregate	11	54.0%	43.4%	55.4%
Rank 1	7	36.3%	41.3%	36.7%
Rank 10	6	9.8%	15.3%	7.9%

a. Including tied simulations

b. 156 out of 164 subjects are used in the Bradley-Terry-Luce and Logit methods because these subjects have all nonnegative scores.

CONCLUSION

The five attributes, namely: track record, reviewers, conduciveness, review materials, and affordability, are all important in determining the preference of accountancy graduating students of a CPA review center in Davao City. The most important attribute is "track record," and the least important is "affordability". On the aggregate, the respondents prefer: (a) Track Record–produced board topnotchers/placers and has an above average national passing rate; (b) Reviewer–author of a book, a board placer and at least 15 years experience as an instructor; (c) Conduciveness– less than 50 reviewers in a room; (d) Review Materials–comprehensive review materials with three years recency; and (e) affordability–Php10,000 below. To check for the model's generalizability, simulations and market have been conducted and predicted.

The following recommendations are made based on the study's findings and conclusions: (1) CPA review centers prioritize the most important attributes like the "track record" in attracting enrollees; (2) That the universities and colleges in the Philippines use the results of the study to give their accountancy graduating students an idea on what CPA review center service attributes for them to consider before deciding to enroll; and (3)That further studies on determining other attributes that are important in designing a CPA review center can be done.

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