

## Bridging the Gap Between Academe-Industry Through Outcomes-Based Curriculum Development

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### Abstract

To bridge the gap between academe and industry, the study determined the highly in demand technical skills and knowledge competencies needed in psychological practice in CALABARZON. Two perspectives were considered in approaching the problem: the perspective of 44 employers or industry partners and the perspective of 120 employees who are graduates from Bachelor of Arts in Psychology in Southern Luzon State University. The study employed both quantitative and qualitative methods in gathering data. Quantitative data was analyzed through the use of weighted mean and Mann-Whitney U while qualitative data was analyzed based on the model of psychological competencies of the IAAP and the IUPsyS. Findings revealed that majority (21 or 52.5%) of the 40 identified as very relevant competencies fall within Cluster A which consists of psychological knowledge and skills underpinning the core competencies; ten (25%) of the identified skills and competencies fall within Cluster C which consists of professional activities competencies and nine (22.5%) fall within Cluster B which consists of professional behavior competencies. The top twelve competencies in the list consists Encourage good relations and motivations among personnel ( $W=2.82$ ); Facilitate professional trainings and career development ( $W=2.72$ ); Effectively communicate orally and in writing using both English and Filipino (2.70); and Recognize professional, social and ethical responsibility (both with  $WM=2.70$ ); Conduct interviews; and Communicate well with clients (both with  $WM=2.67$ ); Develop selection procedures, performance appraisal techniques and curricula for training programs ( $W=2.66$ ); Facilitate recruitment, assessment and selection of personnel ( $W=2.64$ ); Deal with complaints objectively ( $W=2.59$ ); Establish and maintain rapport; Organize seminar workshops and trainings; and Conduct job performance appraisal (all with  $WM=2.59$ ). It was concluded that psychological knowledge and skills competencies are among the top competencies needed in psychological practice based on the perception of both groups of respondents. However, on top of psychological knowledge and skills are professional behavior competencies which also play an important role in the industry. It was further concluded that the skills and competencies being developed in the AB Psychology curriculum of Southern Luzon State University are highly relevant and responsive to the needs of the industry. Recommendations were forwarded to concerned authorities.

**Keywords:** Academe, Industry, Knowledge competencies, Outcomes-based curriculum, Relevant, Technical skills

### Introduction

Higher Education Institutions (HEIs) are expected to deliver graduates with the technical skills and knowledge competencies that will enable them to maximize their career potential in an ever changing and globalizing work environment. But it cannot be a mere case of “producing” what employers ask for. HEIs should produce graduates who develop the flexibility and attitude to always look for development, for innovation and for adaptability both in the field of expertise and in their personal and career development. Since changes are inevitable even in one’s professional field, there is always a need for a tertiary curriculum that is responsive, adequate and relevant to the needs and demands of a changing environment.

In the Philippines, the Higher Education Institutions (PHEIs) are considered as instruments of development in regional and national contexts. The State Universities and Colleges (SUCs) are expected to fulfill its social mission which are 1) to produce thoughtful graduates with a humanist orientation; analytical and problem solving skills; the ability to think through ethical and social implications of a given course of action; and the competency to learn throughout life; 2) to produce competent graduates for the world of work, entrepreneurship and specialized expertise in the 21st century; 3) to provide focused support to the research required for improved teaching, service, technological innovation, economic growth and global competitiveness; and 4) to help improve the quality of hu-

man life, respond effectively to changing societal needs and conditions; and provide solutions to problems at the local, community, regional and national levels [1].

This research was conceptualized based on the current reports from both private and public sectors that there is accordingly a mismatch between what graduates “get” from the universities and what employers and industry partners “need” from incoming workforce. A lot of questions have been raised against the adequacy and relevance of our existing curriculum to respond to the needs of the work setting. In the Western countries, the past two decades have accordingly witnessed an increasing interest in competency-based education, training and credentialing in professional psychology [2]. This was echoed in the Philippines through the passing of the RA 10029, none other than the Psychology Law that professionalizes the practice of psychology. Following the Scientist-Practitioner model, the accreditation of professional education and training programs in psychology is based largely on the program’s ability to demonstrate how and the extent to which foundational competencies for the profession are developed in the students they graduate. It is therefore, imperative for a professional degree program like Psychology, to take a look into the assessment of technical skills and knowledge competencies needed in the work setting to serve as basis for curriculum revision and development.

## Objectives

### General Objective

The study attempted to determine the highly in demand technical skills and knowledge competencies needed in psychological practice for the next decade in CALABARZON. Two perspectives were considered in approaching the problem at hand: the perspectives of the employers or industry partners and the perspectives of the employees who are graduates from Bachelor of Arts in Psychology in SLSU. The ultimate purpose of the study is to come up with curriculum for Psychology programs in SLSU which are responsive to the needs and demands of the work setting.

### Specific Objectives

Specifically, this study attempted to provide answers to the following objectives:

1. Determine the background characteristics of the two groups of respondents: the SLSU Psychology Graduates and the Employers or Industry Partners
2. Identify the highly in demand technical skills and knowledge competencies which are and which will still be in demand for the next decade within the CALABARZON when it comes to psychological practice;
3. Determine if there is a significant difference in the assessment of the graduates and their employers or industry partners regarding the most relevant technical skills and knowledge competencies;
4. Determine the degree of relevance and responsiveness of the proposed revision of curriculum for Bachelor of Arts in Psychology;
5. Identify strengths and weaknesses of the Bachelor of Arts and Psychology based on the perspectives of the employer’s/industry partners, the SLSU Psychology graduates and the researchers;
6. Revise the curriculum for Psychology programs in SLSU in terms of its adequacy, relevance and preparedness to respond to the needs and demands of the work settings.

## Hypothesis

This study tested the hypothesis that there is no significant difference in the assessment of the graduates and their employers or industry partners regarding the most relevant technical skills and knowledge competencies needed in psychological practice in CALABARZON.

## Review of Related Literature and Studies Competencies and the Profession

“Competency is the ability to perform a task and role in accordance to the combination of knowledge, skills, attitudes, personal values, and the ability to develop knowledge, skills and learning experience” [3]. In the world of work, competencies play an important role toward being viable and productive, especially in institutions in which skills are required in the workplace. Professionals in any field emphasize that standards of competency represent the foundation for the credibility of any profession. However, despite the integral importance of competencies, the discipline of psychology has accordingly struggled to identify, define and operationalize the competencies required by registered psychologists [4].

Truer & Reynolds asserted that garnering international agreement on psychology core competencies could strengthen the psychology profession and facilitate a global understanding and roadmap for communication, assessment and benchmarking in the profession [3]. They quoted a list of core competencies in professional psychology from the International Association of Applied Psychology (IAAP) and the International Union of Psychological Science (IUPsyS). These are categorized in three clusters: (A.) Psychological knowledge and skills underpinning the core competencies which involve PK: possessing the necessary knowledge and PS: possessing the necessary skills; (B.) Professional behavior competencies which involve PE: practicing ethically, AP: acting promptly, ER: relates appropriately to clients and others, WD: works with diversity and demonstrates cultural competence, EP: operates as an evidence-based practitioner, SR: reflects on work; and (C.) Professional activities competencies, which involves SG: sets relevant goals, PA: conducts psychological assessments and evaluations, PI: conducts psychological interventions and CO: communicates effectively and appropriately.

## Competencies and the Curriculum

Curriculum is a broad set of experiences that students go through during the entire time they are in school [5]. The curriculum is generally considered as the complete course path that will enable students to attain the goals and general objectives of education. It is the learners’ engagement with various aspects of the environment, which is under the direction of the school. Curriculum empowers all students and motivates them towards lifelong learning. But because of technological advancements, the speed of new information media and predominance of software and hardware devices, as schools’ curriculum should be enhanced. It should meet the needs of society and should conform to the actualities of the community. University curriculum should be re-structured and shifted towards a more meaningful course of study. It is indeed very important for an educational institution to have a balanced and well-designed curriculum for all the programs it offers. More important than these, curricula have to be designed in such a way that it is adequate, relevant and responsive to the prevailing needs of the society. In doing so, the institution shall have a more stable system in undertaking its goals and mission so as to make its cur-

ricular programs efficient and effective to its major concern – the students.

### The Need to Update the Curricula

Since technology is constantly changing due to globalization, the aims of programs and curricula in institutions should be ready to prepare students to meet the changes and needs for knowledge and technical skills in the industry. The era of borderless world of technology has an impact and brings challenges directly to the graduates. This scenario is made more challenging because the number of graduates who complete their studies is increasing. Due to intense competition for jobs, graduates need to make arrangements and prepare as best as possible so that they will not have problem in meeting the criteria required by their future potential employers.

Observed that employers tend to choose potential graduates who are skillful in information technology, innovative, creative and possess a wide range of knowledge and intelligence in predicting the progress of future organization. Thus, the education system and curriculum used need to be more dynamic as technological developments are adjusted based on the views, perspectives, desires and needs of the industry simply because students are the

workforce who will be working in the industry.

In the Philippines, Higher Education Institutions(HEIs) are allowed to design curricula suited to their own contexts and missions provided that they can demonstrate that the same leads to the attainment of the required minimum set of outcomes, albeit by a different route [6]. With the recent shift of the Philippine education system to K to 12 curricula, all HEIs are impelled to revise and update its respective curriculum to satisfy the demands of the stakeholders and the surrounding environment.

Hagos & Dejarme pointed out that the curriculum in Philippines schools today has to be geared to the rapid societal changes and the new responsibilities for the new breed of Filipinos [5]. They enumerated three most important sectors of society that accordingly give direct input to the improvement of the curriculum and these are the academe (institutions), the government, and the industries (both public and private companies). In this study, the researchers focused on getting inputs from the industries and other work settings in order to determine the technical skills and knowledge competencies needed by the aforesaid sector and make them the bases for revising our curriculum for Psychology programs.

### Conceptual Framework

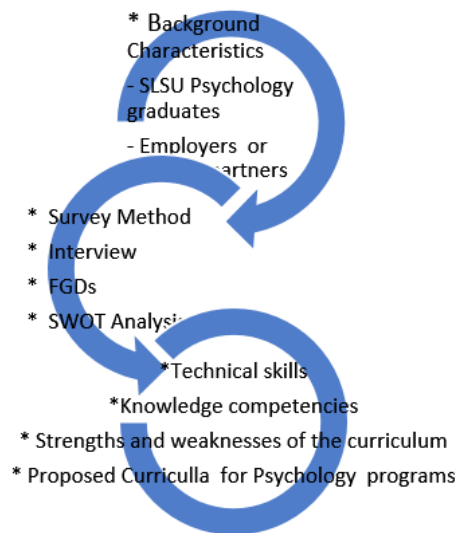


Figure 1: Research Paradigm

The preceding diagram shows the input-process-output flow of the proposed study. Input includes the background characteristics of the two groups of respondents – the SLSU Psychology graduates and their respective employers or industry partners. To come up with the expected outputs, the researcher considered the following process which comprises the methods of inquiry. A mixed method or qualitative-quantitative method were employed in gathering data. This enabled triangulation and counter-checking of data. Moreover, the researcher compared the perceptions of the two groups of respondents. Analysis of data were done through statistical treatment of quantitative data and thematic analysis of the qualitative data. SWOT analysis was also performed relative to the curriculum for Bachelor of Arts in Psychology. All these procedures led to the ultimate goal of the study which is a curriculum

for Psychology programs in SLSU that are responsive to the needs and demands of the work setting.

### Methodology Research Design and Data Source

The study employed quantitative and qualitative approaches through the use of survey questionnaire and interview techniques. First, the researcher gathered information about the Psychology graduates of SLSU from the series of tracer studies conducted in the program. For purposes of delimitation, the researcher covered the graduates from the program during the last decade from 2008 to 2017. There are about five hundred and fifty-one (551) Psychology graduates from SLSU during this period (Please see Table 1).

The last batch of graduates (batch 2018) were not included in the target since it is presumed that they may not yet be landed on a job because they have just taken the board examination. Referring to the database, the researchers distributed the research instruments purposively to those who are currently employed in various Psychology-related work – educational, industrial and clinical setting within CALABARZON only. The target was to reach out all of them personally or via electronic means of communication. However, due to time constraint, the researchers were not able to cover 100% of target respondents.

### The Data Gathering Instruments

There are three sets of research instruments used in gathering data for this study. The first part is a self-made Survey Questionnaire which was designed to determine the background information of target respondents. There are 2 versions of this Survey Questionnaire: one is tailored for Psychology Alumni respondents while the other one is designed for Industry Partners or Employers of our

Psychology Graduates. The second set of questionnaire, Program Evaluation Instrument is designed for evaluating our Proposed Curriculum for Bachelor of Arts in terms of its relevance and responsiveness to the demands of industry. Attached to it is a sample of the said proposed revision of curriculum. In the said questionnaire, respondents are free to give comments and suggestions. The last set of questionnaire, the Technical Skills and Competencies Questionnaire, was adapted from the list of core competencies in professional psychology from the International Association of Applied Psychology (IAAP) and the International Union of Psychological Science (IUPsyS) and some were lifted from the program outcomes as indicated in CMO 34, Series of 2017, Policies and Standards for Undergraduate Programs in Psychology. This is a rating scale designed to determine the skills and knowledge competencies needed in various settings of psychological practice. The last two sets of questionnaire are common for both groups of respondents.

**Table 1:** SLSU Psychology Graduates in Various Work Setting

Year	No. of Graduates	Psychology Graduates Who Are Working in Various Settings in CAL-ABARZON		
		Clinical Setting	Educational Setting	Industrial Setting
2008	62	2	2	6
2009	51	1		8
2010	42		2	9
2011	40		3	6
2012	50		1	9
2013	56	1		7
2014	54		2	8
2015	64	3	2	10
2016	62	4	3	8
2017	70	4	6	13
TOTAL	551	15	21	84

The researchers traced the target two groups of respondents from March to May, 2019. They ensured to have at least one employer or industry partner-respondent per company where SLSU Psychology graduates work, regardless of their number. There had been hundreds of questionnaires distributed among respondents during the 3-month period as they travelled to and from the areas in CAL-ABARZON – Batangas, Cavite, Laguna, Rizal and Quezon. While each questionnaire is being retrieved, follow up interviews and Focused Group Discussions (FGD) were requested from both groups of respondents. Some questionnaires were sent through google docs. Despite varied means of data gathering and continuous follow ups, the retrieval of accomplished questionnaires was not made hundred per cent for the alumni. On the other hand, most industry partners who participated in the study were from the participants of the Job Fair conducted by the university last May, 2019.

### Data Analysis

Quantitative data were analyzed through the use of weighted mean and Mann-Whitney U Test of differences. Thematic analysis was

employed for qualitative data which were gathered from interviews and FGDs. A SWOT analysis was also conducted to come up with an objective assessment of the existing curriculum and a proposed new curriculum for AB Psychology.

### Results and Discussion

After gathering data, the researchers came up with the following findings which are presented in the following tables.

#### Background Characteristics of the Respondents

This study involved the participation of two groups of respondents: the SLSU Psychology Graduates and the Employers or Industry Partners. As per records from the Office of the University Registrar, there are 551 Psychology Graduates in SLSU from 2008 to 2017. Out of the 551, 120 or 21.77 % responded to the survey and participated in the FGD. Out of this number, majority (84 or 70%) works in the industrial setting, 21 or 17.5% works in the educational setting and 15 or 12.5% works in the clinical setting. Out of 84 who work in the industrial setting, majority (39 or 46.43%)

are in the Human Resource Management Office, occupying the position as HR Manager, HR Supervisor, Recruitment Specialist or Officer, or Associate HR Officer, the rest are HR Office Staff.

On the part of industry partners, there were 44 industry partners that participated in the research. Majority (40 or 91%) of these industry partners are private. Just the same, 31 or 70.45% of Industry Partners respondents are occupying the positions as HR Manager, supervisor, recruitment officer of specialist, while the remaining 13 are holding higher positions such as Branch or Office Manager, Vice Presidents for Admin and Finance, VP for Academics, VP for Research and Development, Principal and other middle-level managers.

Highly Relevant Technical Skills and Knowledge Competencies in Psychological Practice in Calabarzon

Table 2 presents the highly relevant technical skills and knowledge competencies needed in psychological practice in CALABARZON. All in all, there were forty (40) skills and competencies identified through the questionnaires. Two perspectives were considered: the perspective of industry partners or employers and the

Psychology graduates or alumni who are currently engaged in psychological practice in the region. Only those with overall weighted mean equivalent to very relevant or very important were considered by the researchers. Top twelve in the list consists Encourage good relations and motivations among personnel (W=2.82); Facilitate professional trainings and career development (W=2.72); Effectively communicate orally and in writing using both English and Filipino (2.70); and Recognize professional, social and ethical responsibility (both with WM=2.70); Conduct interviews; and Communicate well with clients (both with WM=2.67); Develop selection procedures, performance appraisal techniques and curricula for training programs (W=2.66); Facilitate recruitment, assessment and selection of personnel (W=2.64); Deal with complaints objectively (W=2.59); Establish and maintain rapport; Organize seminar workshops and trainings; and Conduct job performance appraisal (all with WM=2.59). Analyzing the data based on the cluster of competencies identified by the International Association of Applied Psychology (IAAP) and the International Union of Psychological Science (IUPsyS), the researchers found out that majority (21 or 52.5%) of the 40 identified competencies fall within Cluster A which consists of psychological

**Table 2: Highly Relevant Technical Skills and Knowledge Competencies in Psychological Practice in CALABARZON**

	SKILLS & COMPETENCIES	ALUMNI		INDUSTRY PARTNERS		OVERALL	
		WM	QI	WM	QI	WM	QI
1.	Conduct interviews	2.65	VR	2.73	VR	2.67	VR
2.	Administer, score and interpret psychological tests	2.53	VR	2.48	VR	2.52	VR
3.	Describe the details of a job and the tasks performed in their own words	2.49	VR	2.39	VR	2.46	VR
4.	Supervise personnel	2.37	VR	2.55	VR	2.41	VR
5.	Record the behaviors that are vital to the successful performance of job	2.40	VR	2.48	VR	2.42	VR
6.	Develop selection procedures, performance appraisal techniques and curricula for training programs	2.67	VR	2.66	VR	2.66	VR
7.	Conduct job performance appraisal	2.57	VR	2.66	VR	2.59	VR
8.	Develop and initiate appropriate behavioral interventions	2.51	VR	2.32	VR	2.46	VR
9.	Facilitate recruitment, assessment and selection of personnel	2.61	VR	2.73	VR	2.64	VR
10.	Encourage good relations and motivations among personnel	2.85	VR	2.75	VR	2.82	VR
11.	Organize seminar workshops and trainings	2.63	VR	2.45	VR	2.59	VR
12.	Gain commitment to review and evaluate outcomes	2.53	VR	2.36	VR	2.48	VR
13.	Facilitate professional trainings and career development	2.75	VR	2.64	VR	2.72	VR
14.	Design a psychologically healthy working environment	2.59	VR	2.52	VR	2.57	VR
15.	Utilize systematic approach in gathering data to arrive at decision making	2.32	VR	2.34	VR	2.32	VR
16.	Analyze and conceptualize problems	2.26	VR	2.50	VR	2.32	VR
17.	Provide expert guidance or professional assistance in response to a client's needs	2.43	VR	2.48	VR	2.44	VR
18.	Apply the principles of psychological evaluation and interventions as the need arise	2.30	VR	2.23	R	2.28	VR

19.	Score and interpret psychological tests	2.42	VR	2.34	VR	2.40	VR
20.	Communicate well with clients	2.78	VR	2.39	VR	2.67	VR
21.	Meddle between parties in conflicts and settle disputes	2.29	VR	2.43	VR	2.33	VR
22.	Assess human learning process	2.31	VR	2.59	VR	2.38	VR
23.	Utilize information resources and technology relevant to work	2.32	VR	2.27	VR	2.30	VR
24.	Engage in lifelong learning and understanding of the need to keep abreast of the developments in the specific field of practice	2.34	VR	2.30	VR	2.33	VR
25.	Effectively communicate orally and in writing using both English & Filipino	2.73	VR	2.64	VR	2.70	VR
26.	Work effectively & independently in multidisciplinary & multicultural teams	2.52	VR	2.52	VR	2.52	VR
27.	Recognize professional, social and ethical responsibility	2.78	VR	2.48	VR	2.70	VR
28.	Use computer tools and programs and other advance technologies for efficient performance of tasks	2.59	VR	2.36	VR	2.53	VR
29.	Interpret data logically, accurately and understandably	2.53	VR	2.43	VR	2.51	VR
30.	Demonstrate and apply psychological theories and methods in personal and professional setting	2.42	VR	2.36	VR	2.40	VR
31.	Demonstrate the ability to conduct psychological assessment and evaluation	2.38	VR	2.34	VR	2.37	VR
32.	Exhibit competencies to support national, regional & local development plans	2.43	VR	2.27	VR	2.39	VR
33.	Create harmonious interpersonal relationship with colleagues, clients and others in diverse cultural setting	2.53	VR	2.27	VR	2.46	VR
34.	Show professional & ethical behaviors in research and practice in psychology	2.48	VR	2.5	VR	2.48	VR
35.	Demonstrate capability for self-reflection and independent learning in graduate education or in a professional context	2.23	VR	2.36	VR	2.27	VR
36.	Apply basic skills in counseling and therapy	2.33	VR	2.34	VR	2.33	VR
37.	Establish and maintain trust and respect in the professional relationship	2.58	VR	2.45	VR	2.54	VR
38.	Establish and maintain rapport	2.68	VR	2.34	VR	2.59	VR
39.	Manage crisis situation effectively	2.45	VR	2.41	VR	2.44	VR
40.	Deal with complaints objectively	2.63	VR	2.50	VR	2.59	VR

Legend 1:		Legend 2	
VI/VR (2.26 - 3.0)	Very Important/Relevant/Always Needed	Black	psychological knowledge & competencies
I/R (1.51 - 2.25)	Important/Relevant/Often Needed	Blue	professional behavior competencies
MI/MR (0.76 - 1.5)	Moderately Important/Relevant/Some times Needed	Red	professional activities competencies
NI/NR (0 - 0.75)	Not Important/Not Relevant		

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knowledge and skills underpinning the core competencies, ten (25%) of the identified skills and competencies fall within Cluster C which consists of professional activities competencies and nine (22.5%) fall within Cluster B which consists of professional behavior competencies. This just points out that it is indeed, fundamental for Psychology graduates to possess the necessary core knowledge and skills for one's practice. It can be noticed that most of the identified skills and competencies are those expected in an industrial setting and only few are related to educational and clinical setting. This is explained by the nature of work of the majority of respondents whose job are related to Human Resources Management, like being a HR officer. Thus, another significant finding of this research is the realization that industrial setting is the most promising area of work for psychology graduates in CALABARZON.

Interviews and FGDs confirmed most of the findings that came out from the data gathered from the survey. The same psychological knowledge and skills underpinning the core competencies in psychological practice were also noted. However, some competencies were added like customer-focused skills, people skills, decision-making skills, time management skills, and the ability to deal with and handle different kinds of people. It appears that the ability to understand individual differences became salient in the interviews. It is interesting to note also that what topped on the list of identified competencies needed in the practice is good communication skills, both oral and written. This skill appeared in almost all interviews and FGDs. Other competencies needed in the psychological practice which were identified based on the interviews and FGDs are professional behavior competencies which appeared to be connected to personality. Employers and industry partners expect psychology graduates to act professionally, have a continuous drive for achievement and strong sense of integrity. It is equally important that Psychology graduates are good at multitasking, have good work ethics, have dedication and passion for work even with minimum supervision. Moreover, it is good if a Psychology graduate is able to work independently but also a good team player and can work collaboratively. Certain characteristics like being sensitive to the needs of other people, adaptable or flexible, competitive perseverant/patient, responsible and hardworking, fast learner, goal-oriented, compliant, responsible, resourceful, self-confident, broad-minded, flexible, efficient, cre-

ative, disciplined, has initiative and trustworthy.

It appears that on top of psychological knowledge and skills and competencies, the work setting need employees with professional behavior competencies and when we talk of professional behavior competencies, these are something connected to one's personality. This supports the contentions of advocates of emotional intelligence like Daniel Goleman who emphasized the importance of EQ as an important determinant of success in the work place. Indeed, it is not just knowing the "whats" and the "hows" of the physical aspect of the job but more importantly is how they deal with their superiors, co-workers, subordinates and clients, since as a whole, psychological practice involve dealing with people.

#### Analysis of the Assessment of Respondents on the Most Relevant Technical Skills and Competencies in Psychological Practice

To determine if there is a significant difference in the assessment of the two groups of respondents on the most relevant technical skills and competencies, the data was subjected to statistical tests. Table 3 presents the results of the test of difference on responses of the alumni and industry partners using the Mann-Whitney U. It revealed that the responses of the two groups of respondents did not significantly differ in 46 out of 60 skills and competencies. However, their responses significantly differed in fourteen items: #5 *Directly observe employees* ( $p=0.044$ ), #10 *Facilitate programming and business processes* ( $p=0.051$ ), #12 *Develop and initiate appropriate behavioral interventions* ( $0.028$ ), #15 *Organize seminar workshops and trainings* ( $0.065$ ), #19 *Conduct researches* ( $p=0.059$ ), #22 *Conduct a Mental Status Examination* ( $p=0.022$ ), #25 *Analyze and conceptualize problems* ( $p=0.068$ ), #30 *Communicate well with clients* ( $p=0.000$ ), #32 *Assess human learning process* ( $p=0.012$ ), #41 *Recognize professional, social and ethical responsibility* ( $p=0.006$ ), #42 *Use computer tools and programs and other advance technologies for efficient performance of tasks* ( $p=0.063$ ), #48 *Create harmonious interpersonal relationship with colleagues, clients and others in diverse cultural settings* ( $p=0.058$ ), #56 *Establish and maintain rapport* ( $p=0.030$ ), and #57 *Apply teaching principles in specific situation* ( $p=0.007$ ). This just indicates that there are skills and competencies which the alumni consider to be very important but the industry partners think otherwise or it is vice versa.

**Table 3: Test of Differences on Responses**

S.N	SKILLS AND COMPETENCIES	Mann-Whitney U	p-value
1.	Directly observe employees (#5)	2135.50	0.044**
2.	Facilitate programming and business processes (#10)	2147.50	0.051*
3.	Develop and initiate appropriate behavioral interventions (#12)	2121.50	0.028**
4.	Organize seminar workshops and trainings (#15)	2234.00	0.065*
5.	Conduct researches (#19)	2173.50	0.059*
6.	Conduct a Mental Status Examination (#22)	2055.00	0.022**
7.	Analyze and conceptualize problems (#25)	2191.00	0.068*
8.	Communicate well with clients (#30)	1888.50	0.000***
9.	Assess human learning process (#32)	2032.00	0.012**
10.	Recognize professional, social and ethical responsibility (#41)	2104.00	0.006***
11.	Use computer tools & programs and other advance technologies for efficient performance of tasks (#42)	2214.00	0.063*
12.	Create harmonious interpersonal relationship with colleagues, clients & others in diverse cultural setting (#48)	2194.00	0.058*
13.	Establish and maintain rapport (#56)	2176.50	0.030**
14.	Apply teaching principles in specific situations (#57)	1965.00	0.007***

\*\*\*significant at 0.01 level of significance

\*\* significant at 0.05 level of significance

\*significant at 0.1 level of significance

#### Relevance and Responsiveness of the Bachelor of Arts in Psychology Curriculum

Table 4 presents the curriculum evaluation of the two groups of respondents. With a mean rating of 2.16, the industry partners/employers consider that the proposed revision of AB Psychology curriculum is *relevant and responsive* to the demands of the work setting. On the other hand, a mean rating of 2.47 on the part of the alumni means that they assess our new curriculum to be *very much relevant and responsive* to the needs of the industry. With the Mann-Whitney U Test value of 1057.5, it was found out that there is a significant difference between the curriculum evaluation of the Psychology graduates and the industry partners at 0.01 level of significance. Alumni significantly had higher ratings on the relevance and responsiveness of the Psychology curriculum than the

industry partners/employers. Data from interviews and Focused Group Discussions shed light to these findings. As per interview with industry partners and employers, the researchers have noted a recurrent theme on the need to strengthen the background of our Psychology students on Human Resource Management. Companies accordingly expect Psychology graduates to be exposed to industrial setting, more specifically on HR systems, HR current updates (statutory benefits) and knowledge and experiences in recruitment and selection. Moreover, it is accordingly a plus point if a Psychology graduate can conduct Training Needs Analysis. They further suggested to provide additional subjects like Advanced Industrial Psychology, Organizational Development, Training and Development, and a subject matter on Compensation and Benefits.

**Table 4: Curriculum Evaluation of Industry Partners and Psychology Alumni**

Respondents	Curriculum Evaluation WM	Qualitative Description	Mann-Whitney U	p-value
Industry partners	2.16	Relevant	10.57.50	0.00***
Alumni	2.47	Very Relevant		

\*\*\* significant at 0.01 level of significance

Both industry partners and alumni recommended that our psychology students be given management courses so that they may develop skills in management. Offering of BS Psychology program was also highlighted during the interviews. The respondents also

suggested the offering of Behavioral Psychology or Behavioral Science and/or Social Psychology. and refresher or review courses in Theories of Personality, Industrial Psychology, Abnormal Psychology and Psychological Assessment.



## SWOT Analysis

The SWOT analysis is one of the best means in order to determine the overall strengths of the program and so to capitalize on them; to see the areas where the program needs improvement and so to reduce the chances of having non-conforming outputs; to maxi-

mize the magnified opportunities and to minimize the impact of impending threats. The following findings were based on the existing data as well as the data gathered from interviews and FGDs conducted by the researchers.

**Table 5: SWOT Analysis**

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Adequate number of qualified and competent faculty in the Psychology program (4 PhD holders, 6 PhD candidates and 2 MA/MS holders)</li> <li>• Presence of a psychological services center</li> <li>• The new AB Psychology curriculum was already approved by CHED and SLSU BOR as of August 29, 2019.</li> <li>• AB Psychology is accredited Level III and is currently a candidate for Level IV accreditation</li> <li>• Adequate psychological testing materials</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Licensure performance needs further improvement</li> <li>• Needs enhancement in terms of Human Resource Management skills and competencies</li> <li>• Slow and weak establishment of international linkages and collaborations</li> <li>• Inadequate admission and retention policy</li> <li>• 3 or 25% of our Psychology faculty do not yet have appropriate licenses</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Big number of industry partners (44) in CALABARZON that accept and invite SLSU Psych graduates to join their respective companies</li> <li>• Majority of SLSU Psychology graduates (84 or 70% of the alumni respondents) work in the industrial setting and out of 84 who work in the industrial setting, majority, 39 or 46.43% are in the Human Resource Management Office, occupying the position as HR Manager, HR Supervisor, Recruitment Specialist or Officer, or Associate HR Officer, the rest are HR Office Staff.</li> <li>• Free tertiary education in SUCs</li> <li>• Psychology courses belong to CHED-priority programs</li> <li>• Psychology program is a popular course in the College of Arts and Sciences</li> <li>• Increasing demand for psychologists and psychometricians based on trend analysis by the PMHA</li> <li>• Established linkages with both local and national government and non-government agencies</li> <li>• Positive feedbacks from the industry partners on the quality of Psychology graduates in SLSU</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Presence of other equally-attractive programs in SLSU</li> <li>• Offering of the same program in all SUCs in CALABARZON</li> <li>• Impact of ASEAN integration and other threats of internationalization</li> <li>• Shift to Industry 4.0</li> </ul>

Strengths or opportunities?

Industry partners and employers have positive evaluation and impressions on the Psychology graduates of SLSU. They accordingly possess the psychological knowledge and skills needed in performing their respective jobs, as well as notable professional behavior competencies like being competent, focused, efficient and effective, dependable, trustworthy, and hardworking. Our graduates accordingly have strong sense of work ethics, teachable, goal-oriented, creative and are easy to get along with.

Given these impressions, the researchers were confused whether these are strengths of the program or are these opportunities that we need to capitalize on. Are the positive traits noted among Psychology graduates of SLSU products of individual upbringing or

are those cultural values and orientations that our students caught as they were still studying in SLSU? In this case, the researchers would like to dig deeper into this possibility because if this will be validated as a strength of the program, it is something that the institution has to work on and sustain.

## Conclusions and Recommendations

Based on the findings, it was concluded that the skills and competencies being developed in the AB Psychology curriculum of Southern Luzon State University is highly relevant and responsive to the needs of the industry. Moreover, the proposed revision of curriculum for AB Psychology is relevant although alumni rate its relevance to be significantly higher than the ratings of the industry partners. Psychological knowledge and skills competencies are among the top competencies needed in psychological practice

based on the perception of both groups of respondents. However, it is worthy to emphasize that based on interviews and FGDs, there appears to be special weight given to professional behavior competencies on top of the psychological knowledge and skills [7,8].

Based on the findings and conclusions, the following are recommended:

For Future Researchers:

1. Conduct a study on the cultural and work values formation of Psychology students over the four years of stay in the program
2. A further study on the same area may consider preparing different questionnaires per work setting or area of specialization and increase the number of respondents; For the SLSU Administration:
3. Continuous support to the Psychology program through provision of identified needs and requirements for further enhancement of the program
4. Implement the currently approved curriculum effective AY 2019-2020 For the Psychology Program Faculty and Staff.
5. Preparation of feasibility studies for the recommended offering of Bachelor of Science in Psychology
6. Additional subjects to the existing curriculum, e.g. Strategic Human Resource Management, Advanced Industrial Psychology, and Integrative Course in Psychology to ensure that all Psychology graduates in SLSU shall be able to pass the Board Exam.
7. Enhance the On-the-Job Training experiences of the students

8. Include Management Trainings in the course syllabus in Human Resource Management.
9. Address the issues identified in the SWOT analysis

### References

1. CHED Memorandum Order 9, Series of (2012) CHED website.
2. Kaslow Nadine J (2004) Competencies in Professional Psychology. *American Psychologist* 59: 774-781.
3. Treuer KM, Reynolds N (2017) A competency model of psychology practice: articulating complex skills and practices. *Frontiers in Education*.
4. Nash JM, Larkin KT (2012) Geometric models of competency development in specialty areas of professional psychology. *Train.Edu. Prof. Psych* 6: 37-46.
5. Hagos LC, Dejarne EG (2008) .Enhancing curriculum in Philippine schools in response to global community colleges.
6. CHED Memorandum Order No. 34, Series of (2017) Policies and standards for undergraduate programs in psychology CHED website.
7. Lewis SG (2011) Curriculum Review: Where are we now and where do we want to go? UNESCO International Institute for Educational Planning.
8. Republic Act 10029 The Philippine Psychology Act of 2009.

## Appendix A

### Technical Skills and Knowledge Competencies in Psychological Practice

S.No	SKILLS & COMPETENCIES	ALUMNI		INDUSTRY PARTNERS		OVERALL	
		WM	QI	WM	QI	WM	QI
1.	Conduct interviews	2.65	VR	2.73	VR	2.67	VR
2.	Administer, score and interpret psychological tests	2.53	VR	2.48	VR	2.52	VR
3.	Describe the details of a job and the tasks performed in their own words	2.49	VR	2.39	VR	2.46	VR
4.	Supervise personnel	2.37	VR	2.55	VR	2.41	VR
5.	Directly observe employees	2.03	R	2.30	VR	2.10	R
6.	Maintain the records of everything that workers do in a given period of time	2.18	R	2.23	R	2.20	R
7.	Record the behaviors that are vital to the successful performance of job	2.40	VR	2.48	VR	2.42	VR
8.	Develop selection procedures, performance appraisal techniques and curricula for training programs	2.67	VR	2.66	VR	2.66	VR
9.	Conduct job performance appraisal	2.57	VR	2.66	VR	2.59	VR
10.	Facilitate programming and business processes	2.01	R	2.30	VR	2.09	R
11.	Apply various research methodologies	2.16	R	2.07	R	2.13	R
12.	Develop and initiate appropriate behavioral interventions	2.51	VR	2.32	VR	2.46	VR
13.	Facilitate recruitment, assessment and selection of personnel	2.61	VR	2.73	VR	2.64	VR

14.	Encourage good relations and motivations among personnel	2.85	VR	2.75	VR	2.82	VR
15.	Organize seminar workshops and trainings	2.63	VR	2.45	VR	2.59	VR
16.	Gain commitment to review and evaluate outcomes	2.53	VR	2.36	VR	2.48	VR
17.	Facilitate professional trainings and career development	2.75	VR	2.64	VR	2.72	VR
18.	Design a psychologically healthy working environment	2.59	VR	2.52	VR	2.57	VR
19.	Conduct researches	2.33	VR	2.11	R	2.27	VR
20.	Utilize systematic approach in gathering data to arrive at decision making	2.32	VR	2.34	VR	2.32	VR
21.	Formulate appropriate questions related to a case	2.16	R	2.41	VR	2.23	R
22.	Conduct a Mental Status Examination	1.93	R	2.32	VR	2.04	R
23.	Prepare psychological assessment reports	2.14	R	2.25	R	2.17	R
24.	Evaluate research methodologies and findings	2.17	R	2.23	R	2.18	R
25.	Analyze and conceptualize problems	2.26	VR	2.50	VR	2.32	VR
26.	Provide expert guidance or professional assistance in response to a client's needs	2.43	VR	2.48	VR	2.44	VR
27.	Identify components of effective teaching	2.18	R	2.14	R	2.16	R
28.	Apply the principles of psychological evaluation and interventions as the need arise	2.30	VR	2.23	R	2.28	VR
29.	Score and interpret psychological tests	2.42	VR	2.34	VR	2.40	VR
30.	Communicate well with clients	2.78	VR	2.39	VR	2.67	VR
31.	Meddle between parties in conflicts and settle disputes	2.29	VR	2.43	VR	2.33	VR
32.	Assess human learning process	2.31	VR	2.59	VR	2.38	VR
33.	Facilitate general education, special education and other related educational services	2.16	R	2.18	R	2.16	R
34.	Utilize information resources and technology relevant to work	2.32	VR	2.27	VR	2.30	VR
35.	Conduct consultations and collaboration with other agencies	2.19	R	2.20	R	2.20	R
36.	Analyze statistical data and methodologies	2.22	R	2.34	VR	2.25	R
37.	Use single case design studies	1.89	R	2.02	R	1.93	R
38.	Engage in lifelong learning and understanding of the need to keep abreast of the developments in the specific field of practice	2.34	VR	2.30	VR	2.33	VR
39.	Effectively communicate orally and in writing using both English and Filipino	2.73	VR	2.64	VR	2.70	VR
40.	Work effectively and independently in multidisciplinary and multicultural teams	2.52	VR	2.52	VR	2.52	VR
41.	Recognize professional, social and ethical responsibility	2.78	VR	2.48	VR	2.70	VR
42.	Use computer tools and programs and other advance technologies for efficient performance of tasks	2.59	VR	2.36	VR	2.53	VR
43.	Use available programs such as SPSS for statistical analysis	2.11	R	2.20	R	2.13	R
44.	Interpret data logically, accurately and understandably	2.53	VR	2.43	VR	2.51	VR

45.	Demonstrate and apply psychological theories and methods in personal and professional setting	2.42	VR	2.36	VR	2.40	VR
46.	Demonstrate the ability to conduct psychological assessment and evaluation	2.38	VR	2.34	VR	2.37	VR
47.	Exhibit competencies to support national, regional and local development plans	2.43	VR	2.27	VR	2.39	VR
48.	Create harmonious interpersonal relationship with colleagues, clients and others in diverse cultural setting	2.53	VR	2.27	VR	2.46	VR
49.	Show professional and ethical behaviors in research and practice in psychology	2.48	VR	2.5	VR	2.48	VR
50.	Demonstrate capability for self-reflection and independent learning in graduate education or in a professional context	2.23	R	2.36	VR	2.27	VR
51.	Apply the methods of psychological inquiry in building	2.13	R	2.23	R	2.16	R
52.	Discuss and analyze the major theories and concepts in psychology	2.14	R	2.16	R	2.15	R
53.	Apply basic skills in counseling and therapy	2.33	VR	2.34	VR	2.33	VR
54.	Apply knowledge of populations served, human development and diagnosis	2.13	R	2.20	R	2.15	R
55.	Establish and maintain trust and respect in the professional relationship	2.58	VR	2.45	VR	2.54	VR
56.	Establish and maintain rapport	2.68	VR	2.34	VR	2.59	VR
57.	Apply teaching principles in specific situations	2.03	R	2.41	VR	2.13	R
58.	Explain concepts of multiple intelligences and learning styles	2.05	R	2.30	VR	2.12	R
59.	Manage crisis situation effectively	2.45	VR	2.41	VR	2.44	VR
60.	Deal with complaints objectively	2.63	VR	2.50	VR	2.59	VR

**Legend:** Black – Very Relevant  
Red – Relevant

## Appendix B

Bachelor of Arts in Psychology	Name:
COLLEGE OF ARTS AND SCIENCES	Student Number:
Southern Luzon State University	Date of Admission:
Lucban, Quezon	Program Adviser:

### FIRST YEAR

First Semester							Second Semester						
G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q	G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q
	GEC02	Understanding the Self			3			GEC01	The Life and Works of Rizal			3	
	GEC08	Science Technology and Society			3			GEC03	Readings in Philippine History			3	
	GEC10	Kontekstwalisadong Komunikasyon sa Filipino			3			GEC05	Mathematics in the Modern World			3	
	GEC04	The Contemporary World			3			GEC06	Purposive Communication			3	
	PE001	Physical Fitness			2			PSY01	Introduction to Psychology			3	
	NST001	National Service Training Program			3			PE002	Rhythmic Activities			2	
					17			NST002	National Service Training Program			3	
												20	

### SECOND YEAR

First Semester							Second Semester						
G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q	G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q
	GEC07	Art Appreciation			3			GEC09	Ethics			3	
	PSY02	Psychological Statistics	3	2	5	GEC 05		GEC11	Filipino sa Iba't-ibang Disiplina			3	
	PSY03	Physiological Psychology			3			PSY05	Theories of Personality			3	PSY01
	PSY04	Developmental Psychology			3	PSY01		PSY06	Experimental Psychology	3	2	5	PSY02
	PE003	Individual/ Dual Games Sports			2			PSY07	Cognitive Psychology			3	
	GEC13	Literature of the Philippines			3			PE004	Team Sports/Games			2	
					19			GEC14	Literature of the World			3	
												22	


### THIRD YEAR

First Semester						Second Semester							
G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ	G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ
	PSY10	Social Psychology			3	PSY04		PSY12	Psychological Assessment	3	2	5	PSY 102
	PSY09	Abnormal Psychology			3	PSY06		PSY13	Culture and Psychology			3	
	PSY08	Field Methods in Psychology	3	2	5	PSY08		PSY14	Research 1			3	
	PSY11	Industrial Psychology			3			GEC12	Dalumat ng/sa Filipino			3	
					14							14	

### FOURTH YEAR

First Semester						Second Semester							
G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ	G R A D E	C O D E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ
	ELE01	Introduction to Clinical Psychology			3			ELE03	Practicum in Psychology			3	
	PSY15	Research 2			3			ELE04	Integrative Course in Psychology			3	
	ELE02	Strategic Human Resource Management			3							6	
					9								

## Appendix C

<b>PROPOSED CURRICULUM</b>													
<b>Bachelor of SCIENCE in Psychology</b>													
 <b>COLLEGE OF ARTS AND SCIENCES</b>													
 Southern Luzon State University													
Lucban, Quezon CMO NO. 34 S2017													

### FIRST YEAR

First Semester							Second Semester						
G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q	G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q
	GEC02	Understanding the Self			3			GEC01	The Life and Works of Rizal			3	
	GEC08	Science Technology and Society			3			GEC03	Readings in Philippine History			3	
	GEL01	Environmental Science			3			GEC05	Mathematics in the Modern World			3	
	GEC04	The Contemporary World			3			GEC06	Purposive Communication			3	
	PE001	Physical Fitness			2			PSY01	Introduction to Psychology			3	
	NST001	National Service Training Program			3			PE002	Rhythmic Activities			2	
					17			NST002	National Service Training Program			3	
												20	

### SECOND YEAR

First Semester							Second Semester						
G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q	G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	P R E Q
	GEC07	Art Appreciation			3			GEC09	Ethics			3	
	PSY02	Psychological Statistics	3	2	5	GEC 05		NSC01	Natural Science Electives 1	3	2	5	
	PSY03	Physiological Psychology			3			PSY05	Theories of Personality			3	PSY01
	PSY04	Developmental Psychology			3	PSY01		PSY06	Experimental Psychology	3	2	5	PSY02
	PE003	Individual/ Dual Games Sports			2			PSY07	Cognitive Psychology			3	
	GEL02	Gender and Society	3	0	3			PE004	Team Sports/Games			2	
					19							21	

### THIRD YEAR

First Semester							Second Semester						
G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ	G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ
	PSY10	Social Psychology			3			PSY12	Psychological Assessment	3	2	5	PSY102
	PSY09	Abnormal Psychology			3	PSY04 PSY06		PSY13	Culture and Psychology			3	
	PSY08	Field Methods in Psychology	3	2	5	PSY08		PSY14	Research 1	3		3	
	PSY11	Industrial Psychology			3			GEL03	The Entrepreneurial Mind	3		3	
	NSC02	Natural Science Electives 2	3	2	5			NSC03	Natural Science Electives 3	3	2	5	
					19							19	

### FOURTH YEAR

First Semester							Second Semester						
G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ	G R A D E	C O U R S E	DESCRIPTION	L E C	L A B	T O T A L	PR ER EQ
	ELE01	Introduction to Clinical Psychology			3			ELE03	Practicum in Psychology			5	Must Pass All the Subjects
	PSY15	Research 2			3	PSY04 PSY06		ELEC04	Management Psychology			3	
	ELE02	Strategic Human Resource Management			3	PSY08		ELE005	Integrative Course in Psychology			3	
	NSC04	Natural Science Electives 4			5								
					14							9	

**LEGEND:**

BLACK Color = as per CMO 34, minimum required subjects

RED Color – GE Electives

BLUE Color additional sciences subjects for BS degree

YELLOW Color additional subjects based from findings of the study

GREEN color Institutional subject



Summary of Units	No. of Subjects	Equivalent Units per subject	Total Units
General Education Courses/GE Electives	9/3 =12	3	36
Basic Courses	2	3, 5	8
Required Courses	13		45
Psychology Electives	2		6
Natural Science Elec-tives	4	5	20
Physical Education	4	2	8
NSTP	2	3	6
AB PSYCHOLOGY			109+9 = 128
BS PSYCHOLOGY			129 + 9 =138

#### Mann-Whitney U Test for the Curriculum Evaluation of Graduates and Industry Partners

Variables		Weighted Mean	Qualitative De-scription	Mann-Whitney U	p-value
Curriculum Evalu-ation	Graduates	2.16	Relevant	1057.5	0.00***
	Industry Partners	2.47	Very Relevant		

\*\*\*significant at 0.01 level of Significance

There is a significant difference on the curriculum evaluation of the graduates and industry partners since the p-value is less than 0.05 level of significance.

#### Test of Differences on the Responses of the Alumni and Industry Partners

Variables	Mann-Whitney U	p-value
Attribute 1	2493.00	0.489
Attribute 2	2494.50	0.520
Attribute 3	2439.00	0.398
Attribute 4	2296.00	0.152
Attribute 5	2135.50	0.044**
Attribute 6	2520.00	0.626
Attribute 7	2637.00	0.990
Attribute 8	2607.00	0.877
Attribute 9	2520.00	0.592
Attribute 10	2147.50	0.051*
Attribute 11	2421.00	0.384
Attribute 12	2121.50	0.028**
Attribute 13	2490.50	0.482
Attribute 14	2530.50	0.492
Attribute 15	2234.00	0.065*
Attribute 16	2355.00	0.230
Attribute 17	2343.00	0.146
Attribute 18	2431.50	0.361

Attribute 19	2173.50	0.059*
Attribute 20	2576.50	0.795
Attribute 21	2246.00	0.114
Attribute 22	2055.00	0.022**
Attribute 23	2547.00	0.711
Attribute 24	2516.00	0.618
Attribute 25	2191.50	0.068*
Attribute 26	2614.50	0.914
Attribute 27	2439.00	0.424
Attribute 28	2388.00	0.307
Attribute 29	2367.50	0.250
Attribute 30	1888.50	0.000***
Attribute 31	2415.50	0.360
Attribute 32	2032.00	0.012**
Attribute 33	2621.00	0.940
Attribute 34	2543.00	0.693
Attribute 35	2592.00	0.847
Attribute 36	2386.00	0.307
Attribute 37	2526.50	0.655
Attribute 38	2451.50	0.435
Attribute 39	2413.00	0.248
Attribute 40	2626.50	0.953
Attribute 41	2104.00	0.006***
Attribute 42	2214.00	0.063*
Attribute 43	2493.50	0.562
Attribute 44	2453.00	0.422
Attribute 45	2534.00	0.655
Attribute 46	2464.00	0.465
Attribute 47	2314.00	0.179
Attribute 48	2194.00	0.058*
Attribute 49	2581.50	0.799
Attribute 50	2437.00	0.412
Attribute 51	2464.00	0.470
Attribute 52	2575.00	0.796
Attribute 53	2545.00	0.692
Attribute 54	2460.50	0.474
Attribute 55	2448.00	0.385
Attribute 56	2176.50	0.030**
Attribute 57	1965.00	0.007***
Attribute 58	2286.00	0.161
Attribute 59	2571.00	0.770
Attribute 60	2307.00	0.128

\*\*\*significant at 0.01 level of Significance

\*\*significant at 0.05 level of significance

\*significant at 0.1 level of significance

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