

# A conceptual model for building international competencies of accounting graduates of Indonesian universities

Heri Yanto, Joseph M. Mula and Marie H. Kavanagh

*School of Accounting, Economics and Finance, University of Southern Queensland  
Toowoomba, 4350, Australia*

---

## Abstract

Accounting education in Indonesian universities has to be adapted with the changes of business environment and international accounting standards. One strategy is to harmonise accounting education with international standard of competencies. The study will validate a model of building international competencies of accounting graduates (ICAG) by employing Input-Process-Output (I-P-O) approach developed by System Theory and I-E-O theory as underpinning theories. The inputs are student characteristics, teacher characteristics, and learning facilities. The processes are student engagement (SE) and Student-Faculty Engagement (SFE) in respective university while the outputs are ICAG and student achievement (SA) in term of commutative grade point average.

*Key words:* Accounting education; Accounting competency; Educational system

---

## 1. Introduction

There are three issues that accounting education in Indonesia should adapted with i.e. economic globalisation, foreign investment, and the implementation of new accounting standards. Globalisation enables the movement of labour, technologies, capital, goods, and services across the country's boundaries. A specific issue on labour movement is the change of international labour market entailing the possibility of Indonesian graduates to work in foreign countries and vice versa. Moreover, growing foreign investment (BKPM, 2009) and receiving financial assistance from major financing institutions made accounting practices Indonesia have to comply with international standards (Yapa, 2004) are very important issues. In addition, the Indonesian Institute of Accountants (IAI) have been converging Indonesian Accounting Standards (SAK) with International Financial Reporting Standards (IFRS) that will be in effect by 2010.

The above background indicates that business environments as well as financial reporting standards have changed very significantly. On the other hand, accounting education reform in Indonesia in terms of harmonising accounting practices with the west (Mula, 2007) has been difficult to achieve. However, change is critical to economic and social development if Indonesia is to continue to attract foreign direct investment.

In view with above, accounting education in Indonesian universities has to be adapted to changes in business environmental and international accounting standards. One strategy is to harmonise accounting education with the international standard of competencies. The purpose of harmonisation is to equip Indonesian graduates with competencies to ensure they are able to compete in a global labour force, to support multi-national investors, and to implement new accounting standards. Unfortunately, the number of research studies into graduate competencies in Indonesia is very limited. Moreover, research into international accounting competencies is also new to Indonesia.

## **2. Accounting education context in Indonesia**

There are 37 state and approximately 222 private universities in Indonesia that offer undergraduate accounting program. For the purpose of quality assurance, the Ministry of National Education established a National Accreditation Body for Higher Education (BAN-PT) to assess the quality of all study programs in both state and private universities. In total there are 46 state universities, but nine universities have yet to offer an accounting program (BAN-PT, 2009).

Degrees offered by Indonesian Universities are D3 (Vocational), S1 (BA/B.Com), S2 (Master's), S3 (PhD). A D3 degree is three-year vocational education program after high school graduation, S1 degree is four-year program after high school graduation, S2 degree is two-year program after S1 graduation, and S3 is at least three-year education after S2

graduation. The Directorate of Higher Education (DIKTI) will issue a permission letter to a university to offer a certain study program upon the completion of requirements.

In relation to teacher qualification, there are three kinds of teacher or faculty members i.e. teachers with undergraduate, Master's, and Doctorate degree. DIKTI have already issued a regulation that, all Indonesian university teachers have to have at least (S2) Master's degree by 2015. This office also provides facilitation to all university teachers to continue their study both in their country and overseas.

Generally, all state university teachers are government officials whose salaries are paid by the central government based on ranks and appointments—assistant, lecturer, senior lecturer, and professor. In addition, almost all teachers tend to stay in the same university from the beginning of their career until retirement.

### **3. Literature review and proposition development**

#### *3.1. Conceptual foundation*

Building accounting competencies in higher education could be viewed using a broader perspective, since there are many interdependent factors affecting accounting competencies. There are at least three potential theories to be applied in this study. First, Argyris and Schön's theory on congruence and learning (Anderson, 1997) that consists of governing variables, action strategy, and consequence. Second, Input-Environment-Output (I-E-O) model where Astin (1971, 1991, 1993) contended that student outcomes are functions of two factors i.e. inputs and environment in college. I-E-O theory was equipped by involvement theory (Astin, 1987). Third, system theory (ST) developed by Bertalanffy (1968) that has three main elements i.e. inputs, processes, and outputs (I-P-O) (Heylighen, 1998; Huitt, 1994; Sauter, 2008).

Generally, I-E-O theory and ST are almost similar. The main difference is in the process stage. ST uses transformation process while I-E-O uses environment. ST is a general theory,

but some academics (Bertalanffy, 1968; Deming, 1995) contended that this theory is applicable for education sector. On the other hand, I-E-O theory built based on higher education research, has three elements inputs, environment, and outputs. Other theory developed by Astin (1987) was involvement theory to explain more detail about environment of his previous theory, I-EO. The theory asserts that students learn by becoming involved. As a matter of fact, involvement theory was in line with guidance developed by Chickering and Gamson (1999), the seven principles for good practices in undergraduate education.

This study will take merits from I-E-O, ST, and Involvement theories as underpinning theories by employing the three constructs i.e. inputs, process, and outputs. As indicated by Lewis and Smith cited in Mizikaci (2006) that the inputs of an education system are students, teachers, facilities, financial resources, curriculum, and support services. The transformation process consists of design, delivery, measurement of outputs, and evaluation of a program. They also explained that outputs are academic achievement, graduation, and employment achievement.

Students and teachers, as the most important inputs of an education system, would have characteristics such as psychological (Credé & Kuncel, 2008), demographic, and academic achievements (Duff, 2004). Even though, the impact of demographic characteristics is minimal (Duff, 2004; Norwani, 2005), data on demographic characteristics (possibly demographic variables) will be collected to support the other two characteristics.

In view with above, to handle psychological dimension the study will use motivation measured by Expectancy Theory (ET). Even though, there are many other dimensions, for the study, student characteristics are divided into motivation, previous academic achievements, and demographic characteristics.

As an important input, a teacher also has almost the same characteristics as a student's. There are at least three dimensions of a teacher's characteristics i.e. psychological, academic,

and demographic dimensions. To measure the psychological dimension, the study will use Faculty Members' Job Satisfaction (FMJS) using Herzberg Motivation Theory (HMT).

Second stage of I-P-O approach is transformation processes as the "interaction" among inputs, resources, and outputs. Likewise, I-E-O theory views this stage as an environment where students can interact with. There are some proxies for measuring transformation process such as student engagement (AUSSE, 2010; Kuh, 2006), student involvement by adapting seven principles for good practices in undergraduate education (Braxton, Olsen, & Simmons, 1998; Chickering & Gamson, 1999; Codde, 2006), and student's approach to learning (Biggs, Kember, & Leung, 2001). This study will employ student engagement and student-faculty engagement as proxies of transformation process in a university. Lastly, the outputs are international competencies of accounting graduates (ICAG) and student achievement (SA).

### *3.2. Gap in the literature*

The utilisation of three elements of system—input, process, and output—for the framework approach in accounting education appears to be non-existent. The application of the framework needs other supporting theory, since input-process-output approach developed by ST was not exclusively designed for education. Moreover, current's literature relating to accounting education mainly describes influences of a certain input on a student's performance. In other words, most current's accounting studies are about identifying the influence of inputs on outputs. This study will include student engagement--proxy of teaching learning process--as an intervening variable. Even though Frederickson and Pratt (1995) conducted research into the accounting education process, that on which this study is based, but their model emphasized accounting education as a constrained optimization problem rather than a more complete input-process-output approach.

Research findings relating to accounting competencies in higher education are still limited, since the attention of academics is still focused on student achievement measured by Grade

Point Average (GPA) rather than competencies required by employers of graduates. This research employs Input-Process-Output (I-P-O) approach developed by System Theory I-E-O theory, and Involvement Theory. The study attempts to show the inter-relationship among variables in attaining accounting education outputs in terms of both ICAG and SA. In other words, the study will discover the roles of accounting learning process measured by student engagement and student-faculty engagement as an intervening construct.

In view with above, some academics have already conducted research on student engagement and student involvement and their influence on education outputs such as GPA, critical thinking, and writing skills. Research on the influence of student engagement or student involvement on ICAG seems to be non-existent. More generally, the research that builds framework of building ICAG by including inputs, processes, outputs is still very limited. Likewise, very little research has been undertaken in accounting education in Indonesia, particularly as it relates to international competencies and their correlates.

### *3.3. Research questions and conceptual model*

Based on the literature review and the gaps identified, the following questions are posed by this study.

*RQ1:* What student characteristics correlate with student engagement, international competencies of graduates, and student achievement?

*RQ2:* What teacher characteristics correlate with student-faculty engagement?

*RQ3:* What other inputs in terms of learning facilities correlate with student engagement, international competencies of accounting graduates, and student achievement?

*RQ4:* Does student engagement correlate with international competencies of accounting graduates and student achievement?

To answer the research questions, the study developed a conceptual model based on the literature (Figure 1). The inputs consist of student characteristics (SM, SPA, and SDC),

teacher characteristics (FMJS, TAC, TDC), and learning facilities (LF). The transforming processes is represented by student engagement (SE) and Student-faculty engagement (SFE), while the outputs are international competencies of accounting graduates (ICAG) and student achievements (SA). The model will be tested by the propositions justified in the next section.

### *3.4. Propositions*

#### *3.4.1. Inputs*

##### *Student characteristics*

As the most important input, a student will be transformed into an output through the accounting learning processes. A student has certain characteristics, the quality of which can affect outputs (achievements). The study classifies student characteristics into students' motivation (SM), students' previous academic achievement (SPA), and students' demographic characteristics (SDC). Even though demographic dimension is considered important, the focus appears to be on psychological and academic dimensions.

This study employs Expectancy Theory (ET) to deal with the psychological dimension. As Vroom cited in Geiger and Cooper (1996) explained, motivation to act is a combination of the perceived attractiveness of future outcomes and the likelihood that one's action will lead to these outcomes. Furthermore, Griffin and Harrel (1991) stated the valence model depends on a person's expectations of reward. People's motivation to achieve something depends on the product of their estimation of their chance of success and the value they place on success. In the context of the study, a student will put more effort on improving his or her performance in terms of competencies or achievement. Good competencies or achievements, in turn, will lead to rewards e.g. a good job that can satisfy his or her personal goal.

ET has been broadly utilized to measure student motivation. The theory was effective in predicting academic performance (Geiger & Cooper, 1996). Likewise, Harrel, Caldwell and Doty (1985) concluded that the force model of ET is a very useful conceptual framework for

understanding a student's motivation to strive for academic success. Lastly, Yining and Hoshower (1998) also used ET to assess student motivation to participate in teaching evaluation, they arrived at the same results.

In relation to motivation and student engagement, there are two main points of view about these concepts. Some academics believe that motivation and student engagement are the same concept, but the others contended that the concepts were different in nature. To understand the difference between the two concepts, the following definitions may be useful. Russel *et al.* (cited in Ainley, 2004) defined motivation as energy and direction, the reason for behaviour; why we do what we do. Student engagement, on the other hand, describes energy in action; the connection between person and activity.

The relationship between motivation and student engagement is causal, meaning that motivation will influence student engagement. As asserted by Walker, Greene, and Mansell (2006) that an important outcome of increased motivation is cognitive engagement in learning tasks. Moreover, Krause (2005) arrived at the same results that students lacking in motivation and connectedness, have a higher potential to deteriorate into despondency and disengagement from the university community. In summary, motivation has important role in determining both student engagement and student achievement. To measure motivation using ET, some factors and items have been developed by Chiang and Jang (2008). Based on the above research, ET may be useful in predicting student engagement as well as accounting students' competencies.

In addition to the psychological dimension, this study includes an academic dimension of inputs. To enter an accounting education system, inputs must have characteristics that are in line with accounting education to make sure the process will run as planned. Rohde and Kavanagh (1996) indicated that first year tertiary accounting results obtained by a student who studied accounting previously is between one and two grades higher than that of a student who



did not study accounting at high school. Moreover, Duff (2004) also found that some characteristics such as age, gender, and previous academic achievement are found to have a relationship with a student's performance, but the strongest predictor is previous academic achievements. Another finding shows that there was a significant but not particularly strong relationship between high school achievement (as measured by TER or Tertiary Entrance Rank) and academic achievement (Dickson & Fleet, 2000). Finally, Credé and Kuncel (2008) also contended that previous grades were predictors of academic performance.

The above findings discuss about the influence of previous academic achievement on student achievement. To see the influence of previous academic achievement on student engagement, this study considers the following propositions. The first proposition was contended by Alverman (2001) that the level of student engagement is the mediating factor through which classroom instruction influences student outcomes. The second proposition was asserted by researchers from University of Victoria, Canada that that student engagement can be a good proxy for overall educational quality (2006). These propositions imply that previous academic achievements have influence on student engagement. This leads to the following proposition:

*P<sub>1</sub>: Student characteristics (SM, SPA, and SDC) correlate with student engagement (SE), international competencies of accounting graduates (ICAG), and student achievement (SA).*

#### *Teacher characteristics*

Other very important inputs, in addition to student inputs, are teacher inputs. As Hoffmann and Oreopoulos (2009b) reported that college instructor influence student achievement. There are at least three dimensions of teacher characteristics i.e. psychological, academic, and demographic. Since the demographic dimension in term of gender plays a minor role in determining student achievement (Hoffmann & Oreopoulos, 2009a), the main focus of the

study is psychological and academic dimensions. Nevertheless, the data about demographic dimensions such as age and gender will be collected to support the other dimensions.

This study will measure a psychological dimension by using Herzberg's Motivation Theory (HMT). The theory has been broadly used by academics to predict teaching performance, teacher attrition, and organizational performance. The application of such a theory to measure teacher job satisfaction and its influence on teaching performance was conducted in the River State of Nigeria. The finding shows that a teacher's job satisfaction seems to have a greater impact on teaching performance (Ololube, 2006). In relation to faculty members' job satisfaction (FMJS), Sudiro (2008) arrived at more specific results that FMJS influences both working commitment and job performance of faculty members. To measure FMJS, this study will use items and factors developed Coklin, and Desselle (2007) that have satisfied performance in measuring pharmacy faculty work satisfaction.

Besides considering the psychological dimension, this study will also include an academic dimension as a characteristic of teachers. De Paola (2009) found that the effects of teacher characteristics, in terms of experience and research productivity, impact both on a student's performance, measured in term of grades obtained at subsequent examinations, and on courses chosen. The results also suggest that teacher quality has a statistically significant effect on a student's grades in subsequent courses.

Even though, the characteristics of teaching in higher education are different from teaching in elementary school, Buddin and Zamarro (2009) found striking results that teacher' licensure test scores and advanced degrees had no impact on student achievement. They found that student achievement increases with teacher experience, but the linkage is weak. In relation to a teacher's certification, Harris and Sass (2009) found that certification provides a positive signal of a teacher's contribution to a student 's achievement in a few isolated cases.

Some studies conducted in Indonesian universities arrived at more specific results. Riduwan (2006) found that there was a significant correlation between education attainment with a lecturer's performance. Even though, Yusuf (2006) conducted research in a different university, the results are very similar. He found that education attainment had a direct and significant influence towards lecturers' performances. Moreover, education attainment also influences research productivity (Mahmudah, 2005; Salim, 2004).

In relation to teaching performance, this study will use student-faculty engagement that developed mainly from student engagement items and factors. Student-faculty engagement is self-reported engagement of faculty members. In other word, this engagement will be measured based on faculty members' perspective. The roles of faculty members in improving student engagement are very critical. By employing Hierarchical Linear Analysis (HLM) Umbah and Wawrzynski (2005) reported that faculty members played very important role in student learning and engagement both in and out the classroom. Therefore, this leads to the second proposition as follows:

*P<sub>2</sub>: Teacher characteristics (FMJS, TAC,TDC) correlate with student-faculty engagement.*

### *Learning facilities*

Learning facilities are also considered as important inputs, since they will enhance the quality of learning processes. Dolan, Jung, and Schmidt (1985) concluded that the quality of students and faculty, buttressed by academic support in the form of libraries, laboratories, and computers, appear to be the major cogs driving the educational process. Furthermore, Marchionini and Maurer (1995) concluded that there were three roles of digital libraries in the educational setting i.e. a practical role, a cultural role, and a social and intellectual role.

The availability of computer technology will enhance the accounting learning process in higher education. Boyce cited in Herring III and Bryans (2001) identified four advantages of computer technology for assisting teaching and learning in accounting i.e. more efficient and

productive learning, more expansion of topic and subject, more effective learning, and more contribution to students' skills. Likewise, Mohamed & Lashine (2003) asserted that the use of technology for teaching accounting becomes necessary, since accountants should master some computer technology. Khan (2009) arrived at the same findings that computers helped student in enhancing their learning and interaction with both fellow students and instructors.

An accounting laboratory plays an important role in facilitating students to apply their accounting knowledge into the real world. In addition, accounting students can improve their skills both theoretical and practical knowledge in an accounting laboratory. Unfortunately, there are very few research relating to the effectiveness of accounting laboratory facilities in improving student engagement and student achievements.

Another important learning facility is class size. In smaller classes, all types of students can learn better than in a larger classes Konstantopoulos (2007) and Guy (2002) indicated that in small classes students scored significantly higher on their final exams than did students in large classes. Dillon and Kokkelenberg (2002) found that class size had a negative logarithmic relationship to grades and that the effect of class size on grades differs across different category of students.

Hypothetically, the function of learning facilities is very critical in enhancing the teaching-learning process in higher education. As asserted by Mohamed and Lashine (2003) that a good education facilities may not guarantee a good output from education system, but poor facilities certainly affect the quality of output from an educational system. Since student engagement is the proxy of teaching-learning process in a university, this leads to the following proposition:

*P3: Learning facilities (LF) correlate with Student Engagement (SE), ICAG, and SA.*

#### *3.4.2. Processes*

The above literature review described some inputs to the educational system. The interactions among those inputs take place in the process or transformation stage. This study

will utilise student engagement and student-faculty engagement for measuring transformation process or accounting learning process. Student engagement was developed based on involvement theory contended by Astin (1987) that students learn by involving or engaging themselves in the community of an education institution. The theory also implies that student engagement and student involvement are not different in nature. The following definitions also indicate the same viewpoints. AUSSE (2010) defines student engagement as students' involvement in activities and conditions that are linked with high-quality learning. In addition, concise definition was contended by ERS (1998) that student engagement means active involvement in, and commitment to learning process.

Student engagement has been broadly used to measure the process of teaching and learning in higher education such as AUSSE (Australia) and NSSE (USA). There are many scope of student engagement starting from micro level of student engagement, e.g. reading task engagement to a macro level such as engagement in undergraduate education. This study will use student engagement in undergraduate education as a proxy of teaching-learning process. Since the process of teaching and learning includes faculty members and students, consequently there will be two types of engagement, engagement based on student perspective and student-faculty engagement reported by faculty members.

In relation to student engagement, Chickering and Gamson (1987) proposed more practical approaches, seven principles for good practice in undergraduate education. The principles are students-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectation, and respect diverse talent and way of learning. Even though, some academics and research institutions used different factors for student engagement, but basically they use these seven principles. For example, NSSE used four factors to measure student engagement i.e. faculty-student interaction, peer cooperation, academic effort, and exposure to diverse view (Kuh, 2006). Likewise, AUSSE (2010) used academic challenge,

active learning, student and staff interactions, enriching educational experience, supportive learning environment, and work integrated learning. Finally, some academics used and modified some factors that have already utilised by NSSE (Koljatic & Kuh, 2001; LaNasa, Cabrera, & Trangsrud, 2009).

The effectiveness of student engagement in predicting students' learning outcome is convincing. Handelsman *et al.* (2005) considered student engagement as an important predictor of student achievement. Other research provides more accurate information about the impact of student engagement on student achievement, even though the impact varies among universities. Zimmer-Gambeck *et al.* (2006) found that 20% of student achievement was determined by student engagement. Likewise, Agronow (2008) contended that student engagement influence GPA of students at University of California by 28.9%. Surprisingly, when he put students' critical thinking and communication as dependent variables, the influence of student engagement to dependent variables was 48.9%. Similarly, Institutional Planning and Analysis, University of Victoria, Canada (2006) arrived at the same results that student engagement is a very crucial predictor of student learning and success. This institution also asserted that student engagement can be a good proxy for overall educational quality.

In summary, student engagement is a very important predictor of educational output such as student achievements and student skills. Based on the above, student engagement as a proxy of accounting learning process may correlate with international competency of accounting graduates and student achievements. This leads to the following proposition:

*P4: Student engagement correlates with ICAG and SA.*

#### *3.4.3. Outputs: international competencies of accounting graduates*

Universities should equip their graduates with skills and knowledge that are in line with demands of consumers. Kavanagh and Drennan (2008) found that employers are expecting graduates entering the profession to have as the top seven skills analytical/problem solving

skills, a level of business awareness, oral communication skills, ethical awareness and professional skills, teamwork, written communication and an understanding of the interdisciplinary nature of business. In relation to generic competencies, Harden (1995) also suggested that educational institutions should pay attention to the importance of developing personal, communications, and social skills in their students.

Some developed countries have already established skills and competencies of accounting graduates. To provide a clearer picture of competency, John (1995) defined competency as a relational notion--the way in which individual attributes (knowledge, skills, attitudes) are drawn on in performing tasks in particular work contexts. The Accounting Education Change Commission (AECC) requires that accounting education should provide students with the requisite set of skills that future employers seek, including strong communication, quantitative analysis, interpersonal, and intellectual skills (Reinstein & Bayou, 1997). Likewise, an Australian-base organisation, Business, Industry and Higher Education Collaboration Council (BIHECC, (2007) also established a set of business employability skills consisting of eight skills, namely communication skills, teamwork skills, problem solving skills, self-management skills, planning and organising skills, technology skills, life-long learning skills, and initiative and enterprise skills. In comparison, the American Institute for Public Accountant (AICPA) created a set of competencies that graduates should have i.e. functional, personal, and broad business perspectives (Foster, Bolt-Lee, & Colson, 2002). Each category has six, seven, and six indicators respectively.

More technically, AICPA has released a series of competencies consisting of three domains. AICPA defines each domain as follows; functional competencies focus on specific capabilities used by accountants; personal competencies relate to interpersonal skills; and broad-business perspective competencies deal with today's accounting environment (Bolt-Lee & Foster, 2003). Since AICPA core competencies have been broadly used to measure

accounting graduate competencies (Beard, 2007; DeLaune, 2004; McVay, Murphy, & Yoon, 2008; Mula, 2007), this study will employ this three-dimension competency as learning outputs. Moreover, the study also uses AICPA core competency indicators developed by Wolcot (2006). To ensure that all indicators are applicable with Indonesian university setting, this study also will take advantages of AICPA competency indicators modified by Mula (2007).

### *3.5. Scope and delimitation*

The study will investigate state universities in Indonesia that have an accounting department. Private and religious universities will not be covered by this study. The study will use indicators of ICAG released by the American Institute of Certified Public Accountant (AICPA) (Foster, *et al.*, 2002). Final-year students as respondents will be asked to do self-assessment on their international competencies of accounting. However, self-assessment on competencies is still considered effective. As Hansson (2001) indicated that self-estimates of job-specific competencies of employees are well executed.

Even though, this study employs input-process-output approach, but it will only include the most important inputs. Because of inconsistent correlation between school funding and student achievement, the study will exclude funding variable. Some research found that there were three kinds of correlation between school funding and student achievement i.e. positive correlation (Barrow & Rouse, 2005; Ellinger & Wright, 1995), weak correlation (Tow, 2006), inconsistent correlation (Cook, 2001; Klick, 2000; Neymotin, 2008).

There are two engagements i.e. student engagement based on students' perspectives and student-faculty engagement based on faculty members. Even though, the questionnaires of both variables have the same indicators, but clear correlation between two variables cannot be drawn explicitly. Data aggregation for both variables based on university level will provide data for non-parametric analysis. King as cited in (Umbach & Wawrzynski, 2005) contended



that this analysis has a flaw, since individual differences, teachers' and students' perspectives on engagement, are masked. On the other hand, the number of universities in this study doesn't meet requirement for conducting multi-level analysis such as Hierarchical Linear Modelling, since the number of groups, in this case university, should be at least 50 groups (Porter, 2005).

#### **4. Research methodology**

##### *4.1. Population and sampling*

There are 46 state universities in Indonesia spreading from eastern to western areas. The number does not include colleges and religious universities that are spread throughout Indonesia. Out of 46 state universities, there are 37 universities that have an accounting program. The data on universities was downloaded from Directorate of Higher Education database (DIKTI, 2009). In addition, the National Accreditation Body for Higher Education (BAN-PT) assesses the quality of accounting departments in every university. Ten universities or 28% earned level A (Very Good), 21 or 58% universities earned level B (Good), and five (14%) universities earned level C (Fair). The population of this study is all final-year-accounting students which are approximately 7,500 students.

There are at least three strategies for determining sample size i.e. using a sample size of a similar study, published tables, and using formulas (Israel, 1992). The sample size required for using use SEM should be at least 200 respondents (Barrett, 2007; Chou & Bentler, 1996). Since the population of this study is approximately 7500 students, Israel (1992) suggested a sample size of 378 with precision ( $e$ ) of 5%. Nine state universities or approximately 20% of state universities will be selected randomly by considering the proportion of accreditation and location. University's location is taken into consideration, since there is a perceived difference in the quality of graduate coming from Java-located universities and the rest located on other Indonesian islands.

Faculty members in respective university are other respondents in this study. DIKTI (2009) database shows that the number of faculty members in sampled universities is approximately 244 teachers. The study will collect data from all faculty members who have experience teaching the class of sampled students. Table 1 shows the distributions of the sample of both students and teachers.

#### *4.2. Data collection methods and instrumentation*

This study use questionnaires for collecting data from faculty members and students, therefore, there are two kinds of questionnaire i.e. questionnaire for final-year students (QS) and questionnaire for accounting lecturer (QL). The first questionnaire was designed to collect data from students that consist of four latent variables and seven observed variables. The second questionnaire (QL) was devised to collect data from accounting faculty members who have experience teaching students completing QS. In addition, QL consists of two latent variables and eight observed variables. Five-scale Likert types are utilised for all latent variables in QS and QL.

##### *Questionnaire for final-year students (QS)*

Latent variables measured by this questionnaire are international competency of accounting graduates (ICAG), student engagement (SE), and student motivation (SM) measured by ET, and learning facilities (LF). Moreover, observed variables of this questionnaire are related to demographic data and previous academic achievement of students.

Variable of ICAG falls into three domains of competencies—functional, personal, and broad business perspective competencies—established by AICPA. In addition, the variable consists of 20 aspects of competencies (Bolt-Lee & Foster, 2003; Mula, 2007; Wolcot, 2006). Each competency has some indicators that have been used by Mula (2007) to conduct similar research in Indonesia. This study also considers competency indicators developed by Wolcot (2006). To ensure sure student respondent can understand them easily and provide appropriate responds, some indicators were simplified.

Second latent variable in this questionnaire is student engagement (SE) as a proxy of accounting learning processes. Measures of this questionnaire were academic challenge, active learning, and student-staff-interaction that adapted from (AUSSE, 2010). Original questionnaires were developed by NSSE (2010) with very good performance in terms of validity and reliability (Kuh, 2006).

The third latent variable is student motivation measured by expectancy theory. The constructs (expectancy, instrumentality, and valence) and items of this questionnaire were adapted and modified from Chiang and Jang (2008) that have convincing validity and reliability.

The last latent variable is learning facility (LF). The constructs of learning facility are utilisation of library, computer, accounting laboratory by students and students' perception of class size. This questionnaire is a new questionnaire that needs testing. This testing will provide information about its coefficients of alpha and loading factor to determine its reliability and validity. The rest questions are related to observed variables i.e. demographic dimension, previous academic achievement, and cumulative grade point average.

#### *Questionnaire for Accounting Lecturer (QL)*

As mentioned earlier, QL comprises two latent variables and eight observed variables. The first latent variable is Staff-Student Engagement. The measures of this questionnaires are adopted from AUSSE (2010) that originally developed by NSSE (2010).

The second latent variable is faculty member job satisfaction (FMJS). This questionnaire was adapted from Conklin, and Desselle (2007). The questionnaire has six factors with 24 questions. The reliability of questionnaire is satisfying indicated by  $\alpha$  coefficient ranging from 0.67 to 0.83. Moreover, factor analysis shows that the lowest and the highest coefficients are 0.44 and 0.86. The rest of questions are related to demographic information and academic characteristics of faculty members.

#### *4.3. Data analysis techniques*

The study will use students and faculty members as units of analysis. Structural Equation Modelling (SEM) type Confirmatory Factor Analysis (CFA) will be employed to analyse relationships among variables in model. The SEM approach is a comprehensive and flexible

approach to research design and data analysis (Hoyle, 1996). Since the study will identify the relationships among inputs, processes, and outputs, SEM is one of the most appropriate data analysis techniques. Before conducting SEM analysis the model will be tested using Goodness of Fit with some indices i.e. Chi Square, RMSEA, Goodness of Fit Index, Adjusted GFI, Tucker-Lewis Index, Comparative Fit Index, and Data Normality Test (Byrne, 2001). Possibly, the study will use single composite indicator model due to many latent and manifest variables in this research model.

Due to limited number of groups, the study could not use multi-level analysis. Therefore, the correlation between SFE and SE will be identified by correlating data aggregation of both variables. Since the data come from independent sample, the appropriate non-parametric analysis will be Wilcoxon rank Sum Test or Mann-Whitney *U* Test (Ferguson & Takane, 1989).

#### **4. Expected Contribution and Outcome(s)**

I-P-O and I-E-O approaches have been to implemented into education, but research relating to the adoption of these approaches to accounting education appears to be non-existent. Moreover, current accounting education literature focuses on the correlation of certain inputs with outputs in term of student achievement without involving learning processes measured by student engagement and student-faculty engagement as intervening constructs.

In addition, the study will contribute to the literature relating to accounting education within broader perspectives by showing relationships among variables resulting in ICAG and SA. Practically, the research will provide more information about the extent of internationalisation of students' competencies and harmonisation with international standards of education. The information can also be used as a benchmark by accounting program in a university. The study will build a theoretical model to test the relationships among inputs, process, and output variables. The tested model will provide information about the key

variables that Indonesian universities should address in their attempts to meet globalisation pressures.

The study is expected to provide information about the extent of ICAG in Indonesia to institutions that offer professional accounting program. Therefore, necessary strategies to provide better professional education programs for graduates entering the accounting profession can be accurately formulated.

## **5. Conclusion**

Accounting education in Indonesian universities has undergone modifications and adaptation with changes in local and international environments. One strategy is to harmonise accounting programs with international standards of competence. Based on I-P-O approach developed by ST and I-E-O theory, accounting graduates' competencies as outputs are influenced by inputs and process.

This paper discusses the conceptual underpinnings for understanding the most important inputs to accounting educational systems i.e. student characteristics, teacher characteristics, and learning facilities. In addition, the paper also postulates that the accounting learning process measured by student engagement and student-faculty engagement are intervening constructs between inputs and outputs. Future work will collect and analyse data to test the model and propositions to identify which measures influence accounting graduate competencies and outputs.

## References

- Agronow, S. J. (2008). *Demographic, pre-college and engagement variables that effect UC GPA and student learning outcomes as assessed by UCUES*. Paper presented at the SERU Research Symposium on the University of California-Berkeley campus. Retrieved March 19, 2010, from <http://cshe.berkeley.edu/events/serusymposium2007/docs/SERU.Agronow%20Demographics.pdf>
- Ainley, M. (2004). *What do we know about student motivation and engagement?* Paper presented at the The annual meeting of the Australian Association for research in Education. Retrieved March 13, 2010, from <http://www.aare.edu.au/04pap/ain04760.pdf>
- Alvermann, D. E. (2001). *Effective literacy instruction for adolescents*. Paper presented at the National Reading Conference. Retrieved March 13, 2010, from <http://www.nrconline.org/publications/alverwhite2.pdf>
- Anderson, L. (1997). Argyris and Schön's theory on congruence and learning. Retrieved December 3, 2009, from [http://www.scu.edu.au/schools/gcm/ar/arp/argyris.html#a\\_arg\\_models](http://www.scu.edu.au/schools/gcm/ar/arp/argyris.html#a_arg_models)
- Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology, 44*(5), 427-445.
- Astin, A. W. (1971). *Predicting Academic Performance in College*. New York: The Free Press.
- Astin, A. W. (1987). *Achieving Educational Excellence*. San Francisco: Jossey - Bass Publishers.
- Astin, A. W. (1991). *Assessment for Excellence: the philosophy and practice of assessment and evaluation in higher education*. New York: ORIX PRESS.
- Astin, A. W. (1993). *What matter in college?* San Francisco: Jossey-Bass Publishers.
- AUSSE (2010). Australian Survey of Student Engagement. Retrieved March 8, 2010, from <http://ausse.acer.edu.au/>
- BAN-PT (2009). Accreditation of Accounting Study Program. Retrieved November 15: <http://ban-pt.depdiknas.go.id>
- Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual Differences, 42*, 815-824.
- Barrow, L., & Rouse, C. E. (2005). Casualty, casuality, casuality: the view of educational input and output from economics. *The Consortium for Policy Research in Education*. Retrieved October 16, 2009, from [www.chicagofed.org/publications/workingpapers/wp2005\\_15.pdf](http://www.chicagofed.org/publications/workingpapers/wp2005_15.pdf)
- Beard, D. F. (2007). Assessment of Internship Experiences and Accounting Core Competencies. *Accounting Education, 16*, 207-220.
- Bertalanffy, L. v. (1968). *General System Theory: Foundation, Development, Applications*. New York: George Braziller.
- Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor Study Process Questionnaire: R-SPQ- 2F. *British Journal of Educational Psychology, 71*(1), 133.
- BIHECC (2007). Graduate employability skill. Retrieved January 11, 2010, from <http://www.dest.gov.au/NR/rdonlyres/E58EFDBE-BA83-430E-A541-2E91BCB59DF1/20214/GraduateEmployabilitySkillsFINALREPORT1.pdf>
- BKPM (2009). Statistic of direct investment realization, 1990 - February 28, 2009. Retrieved January 19, 2010, from [http://www.bkpm.go.id/file\\_uploaded/Tabel-1\\_FEB09.pdf](http://www.bkpm.go.id/file_uploaded/Tabel-1_FEB09.pdf)
- Bolt-Lee, C., & Foster, S. D. (2003). The core competency framework: a new element in the continuing call for accounting education change in the United States. *Accounting Education, 12*, 33-47.
- Braxton, J. M., Olsen, D., & Simmons, A. (1998). Affinity disciplines and the use of principles of good practices for undergraduate education. [Article]. *Research in Higher Education, 39*, 299-318.
- Buddin, R., & Zamarro, G. (2009). Teacher qualifications and student achievement in urban elementary schools. *Journal of Urban Economics, 66*, 103-115.
- Byrne, B. M. (2001). *Structural Equation Modeling With AMOS: Basic Concept, Applications, and Programming*. New Jersey: Lawrence Erlbaum Associates Publishers.
- Chiang, C.-F., & Jang, S. (2008). An expectancy theory model for hotel employee motivation. *International Journal of Hospitality Management, 27*(2), 313-322.

- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. Retrieved February 10, 2010, from <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm>
- Chickering, A. W., & Gamson, Z. F. (1999). Development and Adaptations of the Seven Principles for Good Practice in Undergraduate Education. *New Directions for Teaching & Learning*(80), 75.
- Chou, C.-P., & Bentler, P. M. (1996). Estimate and test in structural equation modeling. In R. H. Hoyle (Ed.), *Structural Equation Modeling: Concepts, Issues, and Applications* (pp. 37-54). London: Sage Publications.
- Codde, J. R. (2006). Applying the seven principles for good practice in undergraduate education. Retrieved January 10, 2010, from <https://www.msu.edu/user/coddejos/seven.htm>
- Conklin, M. H., & Deselle, S. P. (2007). Developing of a multidimensional scale to measure work satisfaction among pharmacy faculty members. *American Journal of Pharmaceutical Education*, 17(4).
- Cook, S. (2001). *Money and student performance in Rhode Island elementary schools*. Brown University.
- Credé, M., & Kuncel, N. (2008). Study habits, skills, and attitudes: the third pillar supporting collegiate academic performance. *Perspective on Psychological Science*, 3(6), 425-453.
- De Paola, M. (2009). Does teacher quality affect student performance? evidence from an Italian university. *Bulletin of Economic Research*, 61, 353-377.
- DeLaune, L. D. (2004). *An investigation of the 150-hour requirement in developing personal competencies in accounting education*. Louisiana State University and Agricultural and Mechanical College.
- Deming, W. E. (1995). *The New Economics for Industry, Government, Education* (2nd ed.). Cambridge: Massachusetts Institute of Technology Center for Advances Engineering Study.
- Dickson, J., & Fleet, A. (2000). Success of failure in core university unit: what makes the difference? *Higher Education Research & Development.*, 19(1), 59-73.
- DIKTI (2009). Study program evaluation based on self-evaluation (EPSBED). Retrieved November 9, 2009, from <http://evaluasi.or.id>
- Dillon, M., & Kokkelenberg, E. C. (2002). The effect of class size on student achievement in higher education: applying an earning function. *Annual AIR Forum*. Retrieved December 15, 2009, from [http://buoir.binghamton.edu/papers/Class\\_Size\\_md2002.pdf](http://buoir.binghamton.edu/papers/Class_Size_md2002.pdf)
- Dolan, R. C., Jung Jr., C. R., & Schmidt, R. M. (1985). Evaluating educational inputs in undergraduate education. *Review of Economics & Statistics*, 67, 514-520.
- Duff, A. (2004). Understanding academic performance and progression of first-year accounting and business economics undergraduates: the role of approaches to learning and prior academic achievement. *Accounting Education*, 13, 409-430.
- Ellinger, K., & Wright, D. E. (1995). Brain for the bucks? School revenue and student achievement in Oklahoma. *Social Science Journal*, 32(3).
- ERS (1998). *Enhancing Student Engagement in Learning*. Arlington, VA: ERS Informed Educator.
- Ferguson, G. A., & Takane, Y. (1989). *Statistical Analysis in Psychology and Education*. New York: McGraw-Hill Book Company.
- Foster, S., Bolt-Lee, C., & Colson, R. H. (2002). New competencies for accounting students. *CPA Journal*, 72(1), 68.
- Frederickson, J. R., & Pratt, J. (1995). A model of the accounting education process. *Issues in Accounting Education*, 10, 229-246.
- Geiger, M. A., & Cooper, E. (1996). Cross-cultural comparison using Expectancy Theory to assess student motivation. *Issues in Accounting Education*, 11(1), 114-129.
- Griffin, L., & Harrell, A. (1991). An empirical examination of managers' motivation to implement just in time procedures. *Journal of Management Accounting Research*, 3, 98-112.
- Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A Measure of College Student Course Engagement. *Journal of Educational Research*, 98, 184-191.
- Hansson, B. (2001). Competency models: are self-perceptions accurate enough? *Journal of European Industrial Training*, 25(9), 428-441.
- Hardern, G. (1995). The development of standards of competence in accounting. *Accounting Education*, 4, 17.

- Harrel, A., Caldwell, C., & Doty, E. (1985). Within-person Expectancy Theory predictions of accounting students' motivation to achieve academic success. *The Accounting Review*, 60(4), 724-735.
- Harris, D. N., & Sass, T. R. (2009). The effects of NBPTS-certified teachers on student achievement. *Journal of Policy Analysis & Management*, 28(1), 55-80.
- Herring III, H. C., & Bryans, B. J. (2001). Curriculum development research: a literature guide. *Accounting Education*, 10, 315-323.
- Heylighen, F. (1998). Basic concepts of the System Theory. Retrieved December 3, 2009, from <http://pespmc1.vub.ac.be/sysappr.html>
- Hoffmann, F., & Oreopoulos, P. (2009a). A professor like me. *Journal of Human Resources*, 44, 479-494.
- Hoffmann, F., & Oreopoulos, P. (2009b). Professor qualities and student achievement. *Review of Economics & Statistics*, 91, 83-92.
- Hoyle, R. H. (1996). The structural equation modelling approach: basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *The Structural Equation Modelling: Concepts, Issues, and Applications*. London: Sage Publication.
- Huitt, W. (1994, May 2003). A transaction model of the teaching learning process. Retrieved December 4, 2009, from <http://chiron.valdosta.edu/whuitt/materials/mdltlp.html>
- Israel, G. D. (1992, 2009). Determining sample size. Retrieved November 16, 2009, from <http://edis.ifas.ufl.edu/pdf/files/PD/PD00600.pdf>
- Johns, A. (1995). Competency standards for professional accountants in Australia and New Zealand. *Accounting Education*, 4(1), 37.
- Kavanagh, M. H., & Drennan, L. (2008). What skills and attributes does accounting graduates need? Evidence from student perception and employer expectation. *Accounting and Finance*, 48, 279-300.
- Khan, M. B. (2009). Effects of Information Technology Usage on Student Learning - An Empirical Study in the United States. *International Journal of Management*, 26, 354-364.
- Klick, J. (2000). Do dollar make a difference? The relationship between expenditure and test scores in Pensilvania's public schools. *American Economist*, 44, 81.
- Koljatic, M., & Kuh, G. D. (2001). A longitudinal assessment of college student engagement in good practices in undergraduate education. *Higher Education*, 42, 351-371.
- Konstantopoulos, S. (2007). Do small classes reduce the achievement gap between low and high achievers? Evidence from project STAR. *Discussion Paper Series*. Retrieved December 12, 2009, from <http://ftp.iza.org/dp2904.pdf>
- Krause, K.-L. (2005). *Understanding and promoting student engagement in university learning communities*. Paper presented at the Sharing Scholarship in Learning and Teaching: Engaging Students. Retrieved March 15, 2010, from [http://www.cshe.unimelb.edu.au/pdfs/Stud\\_eng.pdf](http://www.cshe.unimelb.edu.au/pdfs/Stud_eng.pdf)
- Kuh, G. D. (2006). The national survey of student engagement: conceptual framework and overview of psychometric properties. Retrieved February, 10, 2010, from [http://nsse.iub.edu/2004\\_annual\\_report/pdf/2004\\_Conceptual\\_Framework.pdf](http://nsse.iub.edu/2004_annual_report/pdf/2004_Conceptual_Framework.pdf)
- LaNasa, S. M., Cabrera, A. F., & Trangsrud, H. (2009). The construct validity of student engagement: A confirmatory factor analysis approach. *Research in Higher Education*, 50.
- Mahmudah (2005). Lecturers' qualifications of Airlangga University conducting research under the management of Airlangga University's research center in the year of 2003. Retrieved November 10, 2009, from <http://adln.lib.unair.ac.id/go.php>
- Marchionini, G., & Maurer, H. (1995). The roles of digital libraries in teaching and learning. *Communications of the ACM*, 38(4), 67-75.
- McVay, G. J., Murphy, P. R., & Yoon, S. W. (2008). Good Practices in Accounting Education: Classroom Configuration and Technological Tools for Enhancing the Learning Environment. *Accounting Education*, 17, 41-63.
- Mizikaci, F. (2006). A system approach to program evaluation model for quality in higher education. *Quality Assurance in Education*, 14(1), 37-53.
- Mohamed, E. K. A., & Lashine, S. H. (2003). Accounting knowledge and skills and the challenges of a global business environment. *Managerial Finance*, 29(7), 3-16.



- Mula, J. M. (2007). *Can competency skills for accounting students be internationally-harmonised? An Indonesian application*. Paper presented at the Accounting and Finance Association of Australia and New Zealand (AFAANZ) Conference.
- Murdoch, B., & Guy, P. W. (2002). Active learning in small and large classes. *Accounting Education, 11*, 271-282.
- Neymotin, F. (2008). *The relationship between school funding and student achievement in Kansas public schools*: School of Business Kansas University.
- Norwani, N. M. (2005). *Learning outcomes at higher learning institutions: do institutional environments matter?* Paper presented at the Forum of the Australasian Association for Institutional Research.
- NSSE (2010). National Survey of Student Engagement. Retrieved February, 10, 2010, from [http://nsse.iub.edu/html/survey\\_instruments\\_2009.cfm](http://nsse.iub.edu/html/survey_instruments_2009.cfm)
- Ololube, N. P. (2006). Teacher job satisfaction and motivation for school effectiveness: an assessment. Retrieved November, 10, 2009, from <http://www.usca.edu/essays/vol182006/ololube.pdf>
- Porter, S. R. (2005). Introduction to Multilevel Modeling. Retrieved February 10, 2010, from [www.airweb.org/institutedata-display.asp?id=44](http://www.airweb.org/institutedata-display.asp?id=44)
- Reinstein, A., & Bayou, M. E. (1997). Critical thinking in accounting education: processes, skills, and applications. *Managerial Auditing Journal, 12*(7), 336-342.
- Riduwan (2006). *Contribution of professional competencies and work motivation on lecturers' performance: a study at Jendral Ahmad Yani university Cimahi Municipality*. Universitas Pendidikan Indonesia, Bandung.
- Rohde, F. H., & Kavanagh, M. (1996). Performance in first year university accounting: quantifying the advantage of secondary school accounting. *Accounting & Finance, 36*, 275-285.
- Salim, L. A. (2004). Lecturers' qualifications of Airlangga University conducting research under the management of Airlangga University's research center in the year of 2002. Retrieved November 10, 2009, from <http://adln.lib.unair.ac.id/go.php>
- Sauter, V. L. (2008). System Theory. Retrieved December 3, 2009, from <http://www.umsl.edu/~sauterv/analysis/intro/system.htm>
- Sudiro, A. (2008). The reciprocal influence of job satisfaction with family satisfaction and job commitment and their impact on job achievement and lecturers' career. *Jurnal Manajemen dan Kewirausahaan, 10*(1), 38-49.
- Tow, C. (2006). The effect of school funding on student academic achievement: a study of California school district. Retrieved December 15, 2009, from [http://elsa.berkeley.edu/econ/ugrad/theses/charlene\\_tow\\_thesis.pdf](http://elsa.berkeley.edu/econ/ugrad/theses/charlene_tow_thesis.pdf)
- Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do Matter: The Role of College Faculty in Student Learning and Engagement. *Research in Higher Education, 46*, 153-184.
- UVic (2006). University of Victoria 2006 National Survey of Student Engagement. Retrieved February 10, 2010, from [http://www.inst.uvic.ca/surveys/2006NSSE\\_Analysis.pdf](http://www.inst.uvic.ca/surveys/2006NSSE_Analysis.pdf)
- Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences, 16*(1), 1-12.
- Wolcot, S. K. (2006). Overview of assessment methods for the classroom. Retrieved April 6, 2010, from [http://www.wolcottlynch.com/Downloadable\\_Files/ClassroomAssessmentOverview\\_060717.pdf](http://www.wolcottlynch.com/Downloadable_Files/ClassroomAssessmentOverview_060717.pdf)
- Yapa, P. (2004). ASEAN federation of accountants (AFA) regional harmonization accounting. *Fourth Asia Pacific Interdisciplinary Research in Accounting Conference*. Retrieved January 10, 2010, from <http://www.smu.edu.sg/events/apira/2004/Final%20Papers/1087-Yapa.pdf>
- Yining, C., & Hoshower, L. B. (1998). Assessing student motivation to participate in teaching evaluations: an application to Expectancy Theory. *Issues in Accounting Education, 13*, 531-549.
- Yusuf, A. R. (2006). The influence human resource development on lecturers' knowledge, skills, attitude, and performance in the area of teaching and education at the University of Haluoleo Kendari, South-East Sulawesi. Retrieved November 20, 2009, from <http://adln.lib.unair.ac.id/go.php>
- Zimmer-Gembeck, M. J., Chipuer, H. M., Hanisch, M., Creed, P. A., & McGregor, L. (2006). Relationships at school and stage-environment fit as resources for adolescent engagement and achievement. *Journal of Adolescence, 29*(6), 911-933.

**Figure and table**

Figure 1  
Conceptual model

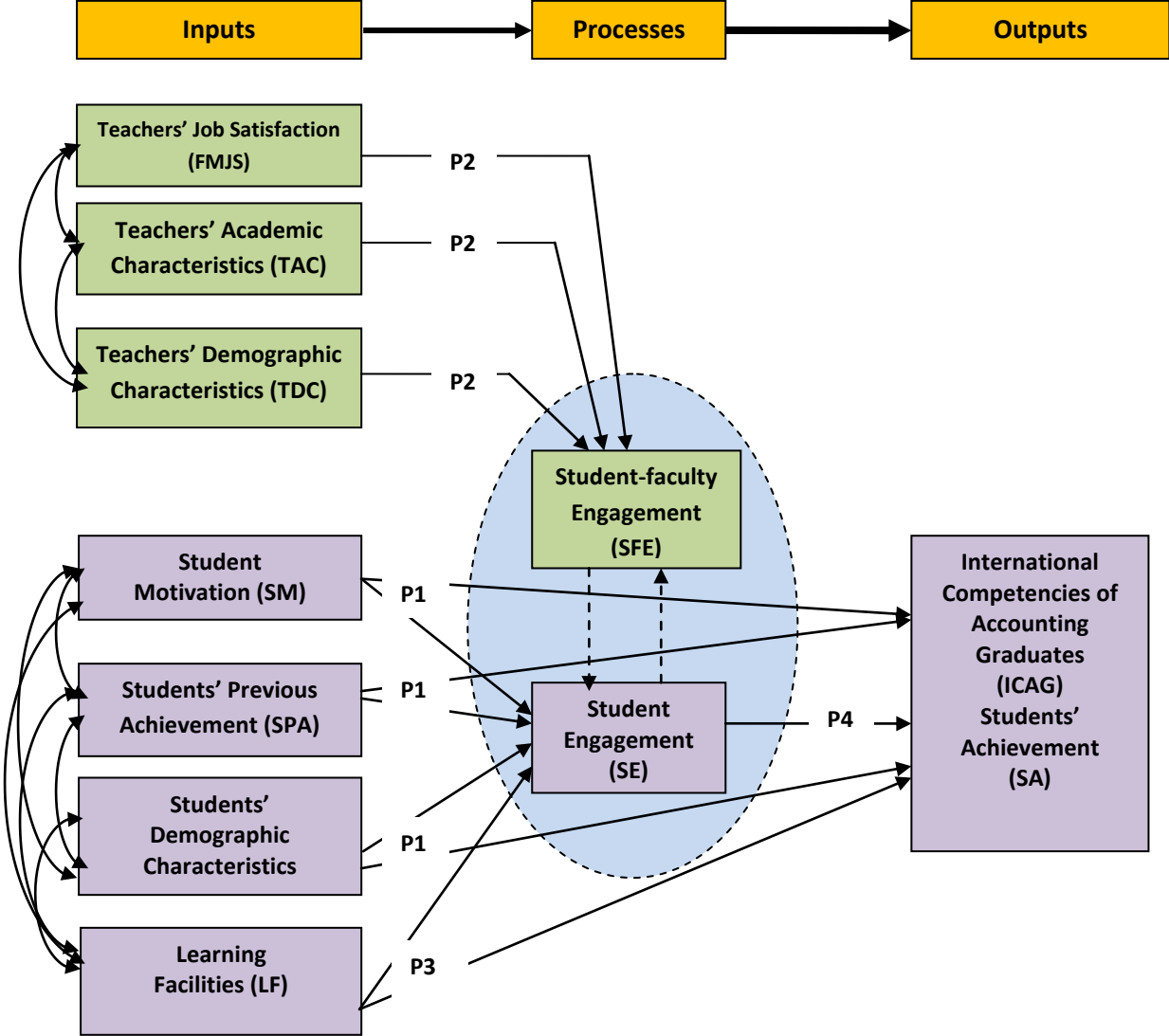


Table 1  
Distribution of sample by university

University	Accreditation level	Location	Number of final year Student	Number of Student Sample	Number of Teacher
Universitas Brawijaya	A	Java	389	80	30
Univesitas Sam Ratulangi	A	Non Java	307	63	45
Universitas Jendral Soedirman	B	Java	300	62	28
Universitas Sumatra Utara	B	Non Java	213	44	29
Universitas Negeri Medan	B	Non Java	93	19	18
Universitas Hasanuddin	B	Non Java	164	34	21
Universitas Mataram	B	Java	143	30	26
Univeritas Negeri Semarang	C	Java	134	28	17
Universitas Palangka Raya	C	Non Java	92	19	30
<b>Total</b>			1,834	378	244