

Young Accountant's Skills on 4.0: Ready or Not?

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ABSTRACT

Technological advances have had many positive impacts as well as negative impacts on various professions in the world. No exception for the accountant profession which is threatened by technological disruption. This study aims to analyse the current market needs related to what skills are needed by the accounting profession in the world of work, during the era of disruption 4.0. Data regarding the skill specifications for accountant positions are taken from trusted job vacancy sites. The accounting profession skill data needed in the world of work will be juxtaposed with lecture and non-lecture material given to students, through interviews and documentation studies. So that it can be seen how the preparation of Undiksha Bachelor of Accounting Study Program in forming future accountants to face the world of work. Do they have the skills required according to the specifications desired by the market, or not. So it is hoped that the results of this research will be able to contribute to the Undergraduate Accounting Study Program in particular, and the Bachelor of Accounting Study Program at other universities in general, in preparing young accountants who have adequate skills according to the needs of the job market in the era of disruption 4.0.

Keywords: *Accounting, Disruption, Profession, Skills*

1. INTRODUCTION

In this disruptive era, Indonesian digital development isn't left far away from other countries. Majority of Indonesian's lifestyle, nowadays, are inseparable from the role of digital technology. For example, there are *Grab* and *Gojek* applications that help public in providing phenomenal online motorcycle taxi services. Named it *Shopee*, *Bukalapak*, *Tokopedia* or *blibli.com*, the marketplace application that brings together sellers and buyers digitally. Even now, the *Halodokter* application has facilitate access for patient consultations with trusted doctors. Even in the field of education, *Ruang Guru* is here to provide a new breakthrough as an online tutoring solution at a relatively affordable price.

In addition to bringing about positive aspects that make daily life activities easier, digital development also has a negative impact if people do not have the insight and readiness to face it. Like the phenomenon of the lonely *Tanah Abang* market in Jakarta during the 2019 *Eid* season, one of the factors causing it is the online market competition where currently people tend to choose to shop online rather than shop directly at stores or markets [1]. It's not just markets like *Tanah*

Abang that have been eroded by technological advances. Since 2018, big players in the modern market sector (Mall) have been eroded by the online market which is the first destination for shopping. Meanwhile, the function of the Mall has shifted to become a place to hang out [2]. Facing this phenomenon, modern retail stores such as *Indomaret* have started to develop online shopping sites since November 2016. As fast as that is the development of gadgets and technology that occurred in the current era of disruption 4.0, and that is the share of the digital market in Indonesia. Apart from this phenomenon, digital developments also have an impact on future professions or careers. Mail delivery began to decline as it became easier to send letters with digital technology called e-mail. It is predicted that the position of tellers at the bank will be replaced by ATM machines with sophisticated features that make customers no longer need to queue at the bank to simply withdraw money, deposit money or simply print a savings book.

Reveals that the jobs most at risk by the existence of technology are jobs that tend to be routine, repetitive and predictable, such as telemarketing, accountants, cashiers, bank tellers, and those related to the legal

sector [3]. Likewise, [4] revealed that not only accountants, other professions could be affected by technological disruption. The accountant profession is not just a public accountant. The accounting profession can be divided into several broad outlines, namely public accountants, internal accountants, government accountants and educational accountants (www.jurnal.id). In the future the accounting profession can be displaced by the presence of artificial intelligence, therefore an accountant must learn new skills and competencies to maintain its relevance to world developments. Artificial intelligence itself is a system that has the characteristics of being able to adapt and learn on its own to understand repetitive patterns and predict future events.

To face uncertainty in the future, the human resources of prospective accountants who are educated from an early age at the University level must have the courage to follow market needs. Herein lies the responsibility of the study program in providing knowledge and practicum that follows the times and market needs. Like family, which is the first place for a person to get character education, so is the campus which is the first place for a student to explore knowledge and professional experience before entering the world of work. Based on the description above, the researcher feels the need to carry out an analysis related to the professional skills needs of accountants in the era of disruption 4.0. This needs analysis will be carried out to find out what are the skills specifications required as a professional accountant in the world of work, and what are the readiness of the study program in meeting these specifications. So that the University has a forward view in the educational process in order to make students as students have sufficient quality to carry out their profession as accountants.

The data in this study were taken from trusted job vacancy websites www.jobstreet.co.id. Jobstreet website is one of the leading job vacancies information providers in Asia, such as Indonesia, Malaysia, the Philippines, Singapore and Vietnam. This website is part of a company that is listed on the Australian Stock Exchange on behalf of Seek Limited. The data that has been collected from this website will be analyzed and linked to the lecture or non-lecture programs provided by the Undiksha Undergraduate Accounting Study Program. Data related to study program readiness will be extracted through interviews with related parties such as coordinators and students, and documentation studies with RPS documents, RPPs, and other supporting documents. Through this process, it is hoped that it can be seen whether the accounting students who graduated from Undiksha's undergraduate accounting study program have the skills needed as accountants in this era of disruption.

The purpose of this research is to find out what skills are needed to work as a young accountant, in accordance with the needs of the job market as disclosed on the website www.jobstreet.co.id. And to find out what has been prepared by the Undiksha Bachelor of Accounting Study Program in forming a young professional accountant from the academic/non-academic side given. Researchers hope that this will provide benefits to various parties, such as: (1) providing views to Undiksha Undergraduate Accounting study program students in deciding to have a career as a young accountant. (2) Providing references for Undiksha's undergraduate accounting study program in developing curricula, courses, or syllabus, and (3) As an empirical reference for research on the accounting profession.

2. LITERATURE REVIEW

2.1. Accounting Profession

People who do accounting work are called accountants. Broadly speaking, accountants can be classified as follows [5]:

2.1.1. External Accountants

External Accountants or also known as public accountants, namely Independent Accountants who provide their services on a certain payment basis. They work freely, and generally work in accounting firms, including the founders of the accounting firm. The services provided by a public accountant include (a) auditing financial statements; (b) Tax accounting; (c) Management consultation.

2.1.2. Internal Accountants

Internal Accountants or also known as management accountants, namely accountants who work at a company where this accountant only works for the interests of the company where he works. The areas of accounting undertaken by a management accountant include: (a) cost accounting; (b) Budgeting; (c) Designing information systems; (d) Internal examination; (e) General accounting.

2.1.3. Government Accountants

Government Accountants, namely accountants who work for government agencies such as BPKP.

2.1.4. Educator Accountants

Educator Accountants, namely lecturers, teachers, other teaching staff.

2.2. Accountants in the Digital World

Chief of the Center for Financial Professional Development at the General Secretariat of the Ministry of Finance of the Republic of Indonesia, Langgeng Subur Ak., M.B.A, CA. CPA., FRICS. The news at www.kompasiana.com informed that the high probability that the accounting profession will be replaced by robots is 95 percent. This percentage was due to the development of Robotics and Data Analytics (Big Data) which took over the basic work performed by accountants (recording transactions, processing transactions, sorting transactions). Therefore, Briven Asia's Chief Executive Officer (CEO) Data, Muhammad Imran, advised accountants to start learning programming and algorithms and must develop competencies that are important for an accountant, namely data analysis, information technology development and leadership skills.

The potential for technology to replace the role of the accounting profession is only a matter of time. The accountant's role will be strategic and consultative. Therefore accountants need to have certification, for example fluent in technology, so they can survive in competition. An accountant must also have a strategy, including mastery of soft skills both interpersonal skills and intra-personal skills, business understanding skills and technical skills to be able to answer the challenges of this digital era. An accountant must be sensitive to the development of the industrial revolution 4.0 by looking at the opportunities that exist. According to Eko Suwandi M.sc., PhD, Dean of FEB UGM, something can become extinct due to the inability to adapt to change. Companies can lose their competitive edge if they ignore these changes in their business strategy and leadership strategy.

Therefore, it is hoped that everyone can be a part of these changes. This is also a pressure for educational institutions to create relevant curricula for accounting students to adapt to digital connectivity so that it is hoped that graduates who will become accountants will be able to adapt to the current digital era. Changes in the era are inevitable, therefore, you must always be able to control your reactions and attitudes to these changes so you can move forward with the times. In the accounting sector, the various challenges that come with the arrival of the digital era cannot be ignored, must be studied properly in order to determine the attitude to overcome them. Being fluent in technology is one of the keys to facing challenges in this era. According to [6] there are several tips for accountants in responding to the future, namely:

- 1) investing in digital skills development,
- 2) implementing new technology prototypes, while learn by doing,
- 3) education based on international certification and digital skills,

- 4) responsive to changes in industry, business and technological developments,
- 5) curriculum and learning based on human-digital skills

According to [6] to face the industrial revolution 4.0, accountants need to prepare steps:

- 1) Awareness, namely, accountants must be aware of the development of the industrial revolution by seeing the opportunities and changes that will occur. The Industrial Revolution 4.0 will not only cause job loss, but will also create new workspaces that may not exist today.
- 2) Education, namely 1) putting pressure on educational institutions to adjust the relevant curriculum for accounting study programs following digital connectivity, 2) providing certain training, such as coding training, information management on shared platforms, and real-time accounting needs for stakeholders.
- 3) Professional Development, which is to improve the performance of the accounting professional organization and its professional development programs to make online and face-to-face presentations on the development of the industrial revolution 4.0.
- 4) Reaching Out, which is where the accountant's control over financial data is getting less, so it is very important to understand the environment by conducting a trans disciplinary mix of advisers.

2.3. Previous Research

In this study, there were several previous studies that revealed problems with similar variables or topics. The results of these studies can be described as below:

2.3.1. Research by [7]

The results showed that (1) the use of professional accountants was still quite high, namely 80% of them were Bachelor of Accounting. (2) The use of the Internet of things (IoT) at work completion is 60%. Accounting services firm uses 70-100% of the total working time using computers and the internet. (3) Soft skills in terms of critical and analytical thinking skills are the highest soft skills required by accounting services firms. In his research, [7] stated that skill changes are needed so that human resources remain relevant to future technological developments. The accounting profession is required to improve skills to keep us in the vortex of digital economic activity in the future.

2.3.2. *Research by [4]*

The results of this study indicate that there is a significant impact of Artificial Intelligence (AI) on the accounting profession, such as: (1) the accountant profession must increase competence in information technology so that the use of AI in companies can be optimized. (2) Demands on the accounting profession to master information technology related to accounting, financial management and auditing. (3) There will be a reduction in the need for accounting professional services in the technical field, because this can be replaced by cloud accounting-based accounting software and case ware-based audit software. According to [4], the steps that must be taken by the Accountant Profession in dealing with Artificial Intelligence are: (1) Becoming aware of the development of AI. (2) Educational institutions are expected to make relevant curricula for accounting students that are compatible with digital connectivity, hold coding training or create cloud computing for real time accounting purposes. (3) Improve the performance of professional organizations and their professional development programs related to the development of AI and how this can impact members of professional organizations. (4) The younger generation of accountants need to understand and be ready to work together with AI. The accounting profession is not immune to new technological phenomena that disrupt the workforce. AI in the world of accounting will not replace accountants, it will only change the focus from manual to digital accounting activities.

2.3.3. *Research by [8]*

The results of this study indicate that Industry 4.0 gives birth too many new things that will later affect the accounting profession and students who are currently studying accounting. Industrial digitization and real-time transactions are able to accurately and quickly monitor the performance of an organization or company in the manufacturing, supply chain and consumer sectors. The accountant profession is expected to adapt to this and more importantly, universities and colleges must change and revolutionize the learning process in order to keep up with the fast rhythm of information technology developments.

2.3.4. *Research by [9]*

The results of this study indicate that to seize opportunities and answer challenges in the era of big data, action plans that can be done are as follows: (1) Accountants do not only act as users but also as managers, designers, guarantee providers and information systems evaluators. In addition, accountants must also be able to provide management support, provide training, investigate capital projects, implement internal controls and risk management, detect fraud and

increase accountability. (2) Accountants must have basic competences in the field of information technology, namely programming, software, hardware, and networking and communication; also master the skills of spreadsheets, database management systems, telecommunications, accounting systems, and systems development. (3) The accountant professional association must make policies that encourage the improvement of accountants' digital skills and competencies through the obligation to attend seminars, workshops and training for their members. (4) Higher education collaborates with professional accounting associations to develop a curriculum that is in line with the opportunities and challenges of the accounting profession in the big data era, simultaneously providing training in big data analysis and integrated reporting for the academic community, as well as holding various discussion forums to find solutions to the problems of the accounting profession in the big data era. (5) The government must ensure the creation of stable political conditions, active stock exchange trading, high levels of public share ownership, and suppress bribery and corruption rates so that the accounting profession can develop optimally in the era of big data.

2.3.4. *Research by [10]*

The results of this study indicate that the Industrial Revolution 4.0 not only disrupts technological pieces, but also other fields such as law, economy and society. To deal with this disruption, it is necessary to revitalize the role of the Social Sciences and Humanities as a reference for technological development. This is intended so that human values are not uprooted from technological developments.

2.3.5. *Research by [11]*

The results of this study indicate that there are 18 key words of communication skills that are relevant in job advertisements. Verbal and written communication skills are the types of communication skills that most often appear as a prerequisite for job advertisements in accounting. Based on the main group in business communication skills, interpersonal communication skills that most often appear as requirements in job vacancies are followed by organizational communication skills and leadership communication skills. In connection with the findings of this study, in preparing graduates to have communication skills that are relevant to the needs of the world of work, it is necessary to consider the various types of communication skills that often appear in job advertisements. It is recommended to revitalize the curriculum and business communication learning programs to suit the needs of today's workforce.

2.3.6. *Research by [12]*

The results of this study indicate that (1) there are six aspects of soft skills in the UMS trade accounting and service accounting courses, namely aspects of honesty, thoroughness, discipline, neatness, skills, and cooperation. (2) The learning model used by the lecturer is lecture learning and PBL and the learning method by giving assignments and new cases so that students can discuss. Through the learning process, students are trained to develop soft skills, which include honesty, thoroughness, discipline, neatness, skills, and cooperation. (3) There are two obstacles to cultivating student soft skills, namely: a) the allocation of time which is inconsistent with the amount of material; b) lack of facilities from the university.

2.3.7. *Research by [13]*

The results of this study indicate that the use of Robotics and data analytics (big data) is currently growing rapidly and is now starting to take over the basic work done by accountants (recording transactions, processing transactions, sorting transactions). This use increases cost efficiency and also work effectiveness in terms of working time. Many large companies currently have met the prerequisites for the development of this technology, because it is supported by standardization of financial management processes, standardization of system and information architecture (standardization of financial processes, systems, and information architecture). Competencies that are important for the accounting profession, such as data analysis, information technology development, and leadership skills, must be developed before it's too late.

3. METHOD

The research method used is a descriptive quantitative method. According to [14] the descriptive method is a method used to describe or analyse a research result but is not used to make broader conclusions. In this research, quantitative descriptive analysis is what is meant by the skills an accountant needs in the job market, and how the Bachelor of Accounting Study Program prepares him to face the required specifications. It is hoped that from this analysis, evaluation results will be obtained that will benefit the BACHELOR Accounting study program.

3.1. *Population and Sample*

The population in this study were vacancies with a specialization in fresh graduate Accounting registered on the Jobstreet website (<https://www.jobstreet.co.id>). These vacancies can come from Indonesia or abroad. Given that Undiksha's goal is to become a global

university in Asia, job vacancies that are placed abroad are still considered in the population. Then the details of the number of research populations obtained are presented in the Table 1.

In this study, purposive sampling was used to determine the number of samples, namely selecting samples with certain considerations or conditions. The requirements and considerations are fresh graduate job vacancies that specifically require Bachelor of Accounting graduates, not vacancies that allow graduates from all majors, or high school/Diploma graduates. This is because the focus on this research is expected to provide direct benefits to students in the Bachelor of Accounting Study Program. So based on the above considerations, all accounting vacancies listed on www.jobstreet.co.id for the period March 2020 are 419 vacancies. There are 292 vacancies that do not need a Bachelor of Accounting graduate's qualification. So that it can be seen that the number of samples that can be used in this study is only 127 samples that show vacancies with Bachelor of accounting qualification specifications.

In this study, the data collection method used documents and interviews. The document data in this study is the skill specification data disclosed in the accounting job vacancies available on the job market www.jobstreet.co.id. In addition, documentation is also needed in the form of a syllabus, and other documents related to learning and non-learning. Meanwhile, the interview in this study will discuss what steps have been taken or will be undertaken in facing the needs of accountants' skills in the job market. Those involved in the interview are related parties within the Bachelor of Accounting study program, as the Accounting Department and students. In addition, a descriptive analysis was also carried out with literacy studies through articles on related topics to provide a scientific view regarding the skills of accountants in this study.

3.2. *Data Analysis Techniques*

The data that has been collected is then analyzed using descriptive analysis techniques. Based on the problems mentioned in the previous chapter, the stages of this study are:

- 1) Tabulating and analyzing the data that has been obtained on job vacancies on the <https://www.jobstreet.co.id> site so as to form information about the accounting skills needed in the era of disruption 4.0.
- 2) Interviews were conducted to discuss the results of the analysis of professional skills needed by the labor market, and how the tips of the Bachelor of Accounting Study Program in meeting market demands.

- 3) Descriptive analysis with literacy studies through articles on related topics to provide a scientific view of accountants' skills in this study.

Table 1. Research population

No	Job Vacancies Specialization	Quantity
1	Audit and Tax	51
2	Banking/Finance	216
3	Finance/Investment	14
4	General Accounting/Financing	139
	Total	419

4. RESULTS AND DISCUSSIONS

In this study, the sample used was 127 job vacancies which specifically mentioned the criteria for Bachelor of Accounting graduates as the target for job vacancies. This aims to ensure the accuracy of the accounting skills needed for job vacancies for Bachelor of Accounting graduates, so that the information generated from this research can be utilized properly by students who are currently studying at Bachelor of Accounting. Especially for those who wish to continue their career as a young accountant.

Based on the observations of 127 company vacancies data, 18 criteria were disclosed, such as: Having work experience; Have Brevet A and B certificates; Have an understanding of tax regulations; Having skill in operating computer programs; Having communication skills; Having skill in a foreign language; Having an independent attitude; Has high initiative; Having a disciplined attitude; Skills in teamwork/organization; Have a willingness to work overtime; Have a thorough and detailed attitude; Having an honest attitude; Having a responsible attitude; Have an understanding of accounting; Having analytical skills; Having skills in preparing and presenting reports; Have a GPA above 2.75.

By considering the vision of the Undiksha University to become a global university based on the *Tri Hita Karana* philosophy in Asia in 2045, and considering one of the objectives of the Bachelor of Accounting Study Program, namely to produce graduates who are able to compete at the local and national levels, the data on the skill criteria obtained above need to be categorized into the IFAC International Education Standards. So that the results of this research can later make a real contribution that can be applied by institutions and students of the Bachelor

of Accounting Study Program. International Education Standards (IES) published by IFAC regarding Professional Skills Contents, are professional skill standards and general education for professional accountants. IES consists of 8 parts that regulate the education of the accountant profession. In the 3rd part of IES it was revealed that every individual who wants to develop a career as a professional accountant is expected to have skills such as Intellectual skills; Interpersonal and communication skills; Personal skills; and Organizational skills [15].

4.1. Intellectual Skills

Intellectual skills are skills related to the ability of professional accountants to solve problems, make decisions, and perform professional services [15]. The results of this study which can be categorized as intellectual skills are:

4.1.1. Skill in operating computer programs

77% of vacancies require prospective employees who have skills in operating computer programs such as Microsoft Word, Microsoft Excel, MYOB and Accurate. Bachelor of Accounting study program coordinator states that the preparation of the study program in meeting these needs from an academic side is by the course "Computer Accounting Applications". In this course students are given material about the use of the MYOB application in trading companies and service companies. However, for the Accurate accounting program, the Bachelor of Accounting Study Program has not provided facilities directly in academics, or non-academics. Mastery of Microsoft Word and Microsoft Excel has been given through the course "Introduction to Computers" which in this course provides material on how to prepare simple financial statements through excel and word applications. Evaluation of midterm and final semester tests accompanied by structured assignments can be used as a comprehensive evaluation of the extent to which students understand the material given.

Based on the descriptive analysis above, it can be concluded that Undiksha's Undergraduate Accounting Study Program has prepared its graduates to have skills in operating computer programs, namely mastery of Microsoft Word, Microsoft Excel and MYOB. However, there is no curriculum for the use of other financial applications such as Accurate or other applications. Reveals that educational institutions are expected to make relevant curricula for accounting students that are compatible with digital connectivity, hold coding training or create cloud computing for real time accounting purposes [4]. Reference [8] in their research suggest that universities and colleges must

change and revolutionize the learning process to be able to follow the fast rhythm of the development of information technology.

4.1.2. Have a meticulous and detailed attitude

The profession as an accountant has a relatively large risk because it relates directly and indirectly to money or company financial figures. 61% of jobs require a prospective employee who has a meticulous and detailed attitude. Based on the results of interviews indirectly, the Bachelor of Accounting Study Program has trained its students to form a detailed and thorough attitude. This can be seen when compiling the thesis preparation process. Students are not only required to be able to be accountable for what they have written, but also required to be detailed and thorough in compiling and adapting to the format of writing scientific papers made. The process of writing this thesis is a good experience to train students later in the world of work. Attitude to detail and thoroughness is one of one's intellectual abilities.

4.1.3. Have an understanding of accounting

Someone who wants to enter the financial industry, of course, must have an understanding of accounting. In previous research by [4] states that there is a demand for the accounting profession to master information technology related to accounting, financial management and auditing. 54% of vacancies require prospective employees who have understanding in basic accounting, cost accounting, service accounting. Preparation for the Bachelor of Accounting Study Program to meet this need is by providing related courses such as Introduction to Accounting 1, Introduction to Accounting 2, and Cost Accounting, and others. The materials taught have been adjusted to the latest curriculum and also provide cases to be resolved as an effort to strengthen student knowledge in these subjects.

4.1.3. Have an understanding of accounting

Someone who wants to enter the financial industry, of course, must have an understanding of accounting. In previous research by [4] states that there is a demand for the accounting profession to master information technology related to accounting, financial management and auditing. 54% of vacancies require prospective employees who have understanding in basic accounting, cost accounting, service accounting. Preparation for the Bachelor of Accounting Study Program to meet this need is by providing related courses such as Introduction to Accounting 1, Introduction to Accounting 2, and Cost Accounting, and others. The materials taught have been adjusted to the latest curriculum and also provide cases to be resolved as an effort to strengthen student knowledge in these subjects.

4.1.4. Having analytical skills

Analytical skills are skills that can develop when a person is trained to solve a problem with the knowledge they have. 44% of vacancies require a candidate employee who is skilled in analysis. Preparation for the Bachelor of Accounting Study Program in fulfilling these needs is through a structured learning process and assignments. The process of analyzing already occurs when students solve cases given by lecturers who teach the course. Especially for final semester students, they are faced with a thesis in which students must analyze the problems that occur in the research object and how to solve these problems.

4.1.5. Having analytical skills

Every business entity running in Indonesia is required to report and pay taxes. Understanding taxes is very important when someone wants to apply for a job related to finance. 36% of vacancies require a candidate employee who has an understanding of tax regulations. Preparation for the Bachelor of Accounting Study Program in fulfilling this need is by providing taxation courses. Students get tax material in theory and practice with simple cases adjusting conditions in the world of work.

4.1.6. Have a GPA above 2.75.

23% of vacancies require prospective employees who have a GPA above 2.75 on a scale of 4. The academic achievement index is one measure of a student's ability to absorb lecture material during the study period. So far, the manager of the study program through the Academic Advisor has made efforts to provide enthusiasm, encouragement, and direction to students, so that complaints or obstacles experienced by students during the study period can be resolved and do not become a barrier for students in the learning process. So that students can be more motivated and enthusiastic in the learning process, able to complete their studies on time so that they can get good academic scores.

4.1.7. Have a Brevet A and B certificate

22% of vacancies require prospective employees who have Brevet A and B certificates. Until this article is written, the S1 Accounting Study Program has not had any special preparation in fulfilling the need for brevet A and Brevet B. For now, if deemed necessary, students are advised to take outside training institutions. Both online and in person.

4.2. Interpersonal and Communication Skills

Interpersonal and communication skills (Interpersonal and communication skills) are skills related to the ability of a professional accountant to

work and interact effectively with others; [15]. The results of this study which can be categorized as Interpersonal and communication skills are:

4.2.1. Have good communication skills

Communication according to KBBI is the sending and receiving of messages or news between two or more people so that the message in question can be understood. A person's ability to communicate well is needed in a work environment. In previous research by [11], Verbal and written communication skills are the types of communication skills that most often appear as prerequisites in job advertisements in accounting. 49% of job vacancies require prospective employees with good communication skills. Bachelor of Accounting Study Program through learning methods that encourage active communication of students in the classroom. Apart from academic activities, students are also encouraged to participate in debate competitions between universities, or host events at certain events, so that students will learn how to communicate in formal situations and be able to argue with good sentence structure.

4.2.2. Have skills in compiling and presenting reports

Preparing and presenting reports is one of the skills that individuals working in the financial sector need to have, because financial problems cannot be separated from the recording, presentation and reporting. 34% of vacancies require a prospective employee who has the ability to compile and present reports. Preparations that have been made by the manager of the Bachelor of Accounting Study Program in meeting these needs are to familiarize students with preparing supporting material for lectures; compiling activity reports or financial reports, both in student organizations and in the lecture process (case assignments); Students have also been accustomed to learning to present the results of their work /assignments in class forums or student organization forums.

4.2.3. Have skill in foreign languages

In the era of the industrial revolution 4.0, in which the flow of digital connections simplifies individual communication with individuals in various countries, understanding and mastering international languages is very much needed, especially for work needs, where an employee is required to be able to master foreign languages related to company partners. A total of 30% need prospective employees who can speak foreign languages, especially English and Mandarin. Bachelor of Accounting Study Program provides English language courses. However, until now, the study program has not provided Mandarin language courses.

If deemed necessary, students can take foreign language courses according to their interests and needs.

4.3. Interpersonal and Communication Skills

Personal skills are skills related to personal attitudes and behavior of a professional accountant; then the results of this study which can be categorized as personal skills are:

4.3.1. Has high initiative

54% of vacancies require high-initiative candidates. Based on the results of interviews with the Head of BACHELOR accounting, indirectly the Bachelor of Accounting Study Program has trained students to form high initiatives. In group discussions, lecturers generally direct students to be able to think critically in discussing the cases discussed and provide activeness if students take the initiative to obtain these grades, so that they will enthusiastically participate in the discussion.

4.3.2. Have a disciplined attitude

50% of vacancies require a prospective employee who has a disciplined attitude at work. Discipline is formed from the character and culture of students. The study program's efforts to instill a culture of self-discipline since they started to become Undiksha students to follow campus rules.

4.3.3. Have a responsible attitude

50% of vacancies require prospective employees who have a responsible attitude at work. Preparation for the Bachelor of Accounting Study Program to meet these needs is to familiarize students with applying this attitude in the learning process. Lecturers as subject managers provide examples of responsible attitudes towards work, so that students also have direct examples. Students are directed to be able to complete their assigned assignments on time, have the courage to be accountable for the results if they are found to have indicated plagiarism fraud.

4.3.4. Have an independent attitude

45% of vacancies require prospective employees who have an independent attitude. Preparation for the Bachelor of Accounting Study Program in meeting these needs can be seen in the academic process and in non-academic activities. One of the materials in the course of behavioral accounting or business and professional ethics, trains them.

4.4. Organizational skills

Organizational skills are skills related to the ability of professional accountants to work effectively with or within an organization to obtain optimal results. Then

the results of this study which can be categorized as Organizational skills are:

4.4.1. Skills in teamwork/organization

In the world of work, team/organization cooperation is needed. The ability to work in teams or organizations is the skill that most often appears as a requirement in job vacancies according to research from [11]. This can be seen from the fresh graduate job vacancies in Accounting/Finance on the website www.jobstreet.co.id which reveal that 56% of the employees are required to have the ability to work in teams or organizations. Based on the results of interviews with the Head of BACHELOR Accounting, the Bachelor of Accounting Study Program indirectly has trained its students to have skills in teamwork/organization. Based on the results of observations of documentation, syllabus, RPS and RTM have shown learning patterns and assignments that build collaboration with students in groups. This lecture pattern has accustomed students to work together in teams. Apart from academic activities, students also participate in UKM activities or other student

years of work experience. Some students in the Bachelor of Accounting Study Program study side jobs, but many of them only focus on lectures and do not take part in side jobs. Preparation for the Bachelor of Accounting Study Program in fulfilling this need is by holding street vendors for students as specified in the 2019 curriculum there are PKL courses implemented for students in semester 6 for 4 months. In addition, the Undiksha Tax Center also opens opportunities for students who are interested in joining as tax volunteers.

5. CONCLUSION

The results of observations from 127 company data recorded on www.jobstreet.co.id, there were 18 skill criteria that were disclosed. The amount of frequency of disclosure, percentage of disclosure, and classification of criteria into IES-3 can be seen in the Table 2.

Table 2. Results summary

No.	Skills Based on IES-3	Skills on vacancies	Conclusion
1	Intellectual Skills	a. Skill in operating computer programs.	Not Ready
		b. Have a meticulous and detailed attitude.	Ready
		c. Have an understanding of accounting	Ready
		d. Having analytical skills.	Ready
		e. Have an understanding of tax regulations	Ready
		f. Have a GPA above 2.75.	Ready
		g. Have a Brevet A and B certificate	Not Ready
2	Interpersonal and Communication Skills	a. Have good communication skills.	Ready
		b. Have skills in compiling and presenting reports.	Ready
		c. Have skill in foreign languages.	Not Ready
		d. Has high initiative.	Ready
3	Personal Skills	a. Have a disciplined attitude.	Ready
		b. Have a responsible attitude.	Ready
		c. Have an independent attitude.	Ready
		d. Skills in teamwork/organization	Ready
4	Organizational Skills	a. Have work experience.	Not Ready
		b. Skill in operating computer programs.	Not Ready

organization activities.

4.4.2. Have work experience

A total of 48% of fresh graduate vacancies in Accounting/Finance on the website www.jobstreet.co.id reveal that it takes prospective employees with $\leq 1-2$

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