


Statistical Data Analysis Skills Needs Among Creative Arts Students

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ABSTRACT

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Knowledge of data analysis skills is an important knowledge for every student, especially for those who conduct research scientifically. However, is there a need for systematic statistical data analysis skills in the scope of their study among creative arts students? Therefore, this study examines the need for quantitative data analysis skills among creative arts students in the perspective of Alumni, Academician and Industry. This study interviewed 12 alumni, 13 academicians and 10 representatives from the Creative Arts Industry to analyse their perspective. Qualitative analysis method is used to analyze the results of interviews with former students, academicians and the industry. As result, all sample of informants interviewed agreed that Creative Arts Students need data analysis skill using quantitative method.

Contribution/Originality: This study is one of very few studies which have investigated in creative Arts Industry. Some of the previous empirical studies just focused on creative arts industry as a whole while this study focus on the needs of statistical data analysis used among creative arts students.

1. Introduction

Statistical data analysis skills are very useful to students to cultivate their intellectual development in handling information, processing and predicting data. As such, each instructional content will be directly related to statistical skills and most countries have

implemented this in their curriculum plans (Gerardo Pérez López et al., 2006). The teaching of statistics at the university level needs to be given exposure even if only partially in the framed academic structure. This is because with the knowledge of statistics, they can apply it even if it is only basic in the field of employment after graduation. This increasingly challenging world of work, requires them to acquire additional skills and showcase them while in the world of work (Harraway & Barker, 2005). Graduates who have entered the world of work play an important role in the current academic structuring. Their experience in the employment industry is able to provide feedback on the need for statistical skills in the workplace.

Batanero (2000) states that if the teaching of statistics begins in higher education, students will have difficulty learning all the content, and they will memorize facts in addition to understanding them. Such learning cannot be applied in the world of professional work. Among the weaknesses of students when they use statistical skills are inability to understand the meaning of concepts (Batanero, 1998), difficulties in interpreting and understanding charts and graphics (Batanero, Godino, Green, Holmes, and Vallecillos, 1994). Apart from that, the scope of teaching and learning in the field of creative arts only encourages students to use qualitative methods as opposed to quantitative methods. This is because, the academic structuring of creative arts students is more likely in the production of an art product, understanding and observation of the process of an art product and appreciation of the aesthetic value of an art product. This situation tends to encourage students in using qualitative methods as opposed to quantitative methods which mostly apply statistical analysis data skills. Therefore, creative arts students are usually less skilled in quantitative analysis. So, is there a need for creative arts students to deepen the skills of statistical data analysis?

This study is to examine the need for statistical data analysis skills for students in the field of creative arts. The needs taken into account in this study are from various perspectives, namely the perspective of former students or alumni, the perspective of academics and the perspective of organizations in the creative arts industry. This aims to get a comprehensive view from various angles and perspectives so that the needs of the study can be more significant.

2. Literature Review

With the importance of statistics and the diversity of its uses in various fields of theoretical knowledge and application, statistics is included as a compulsory subject for most faculty students as part of their program of study (Schmit, 2010). In order to enable students to analyze data sources using appropriate statistical methods or techniques. Therefore, students at the postgraduate level should have knowledge in the program and be able to relate it to statistical aspects in the classroom as well as outside the classroom (Rian, 2008).

A total of 913 sets of questionnaires were posted to graduates with PhD and Master's degrees in biological sciences, psychology, business, economics, and statistics to obtain feedback on the use of statistical techniques, research methods and software used in the workplace. The study aimed to identify gaps between topics and techniques learned in university and those used in the workplace as well as showing deficiencies in the preparation of statistical skills in employment. This study proposes to further develop statistical skills courses to bridge the existing gaps, develop intensive workshops for

postgraduate students and on-the-job training, or involve staff from other departments for the preparation of statistical teaching contexts (Harraway & Barker, 2005).

According to the study Ali, Qasem, Govil, and Gupta (2015) which assesses the level of statistical skill proficiency of postgraduate students of the Faculty of Education at the University of Yemen and India. Uniformity tests were used to assess the level of statistical competence of students. This study shows that the level of statistical efficiency of postgraduate students owned by the Faculty of Education at the University of Yemen is average while the level of statistical efficiency of postgraduate students owned by the Faculty of Education at the University of India is less than average.

There are also several studies related to the creative arts industry that use statistical analysis methods and skills. Amaran and Lau (2018) study use the method of factor analysis in obtaining research findings related to the factors of youth involvement in the creative arts industry. Hence, some of the study also used a statistical approach in analyzing the involvement of creative arts graduates in the field of entrepreneurship (Amaran et al., 2020; Mohd Fahmi et al., 2018). This shows that although not many studies have conducted studies related to the use of statistical analysis skills among creative arts graduates, but there are few researchers in the field of creative arts apply statistical analysis as tools in their research methodology (R. Keith, 2018).

In Amaran (2016) book stated that the use of statistical knowledge is very important among creative arts graduates to produce more quality graduates with diverse skills. This is also stated in the Amaran (2018) book, in the context of understanding the knowledge of marketing in the creative arts industry, graduates need basic statistical skills.

3. Methodology

This study involved 12 alumni from Creative Arts field, 13 Academicians who teach the Creative Arts Skill and 10 representatives from the Creative Arts Industry. All sample of informants were interviewed and qualitative method is used to analyze the results of interviews with former students, academics and the industry. Interviewed method was used in this study to obtain a clearer and more reliable response (Mohd Tobi, 2016). According to Chua (2016) qualitative method is very significant in analyzing the findings accurately, therefore this study uses a qualitative approach in producing research findings.

4. Findings

4.1. Informants Background

4.1.1. Creative Arts Alumni Background

Table 1 shows the background of the former creative arts students interviewed. A total of 12 former students were interviewed and most of them were female students, namely 8 compared to 4 male students. A total of 6 Malay students, 2 Bidayuh students while other races such as Bajau, Chinese, Iban and Melanau each have only one.

Table 1: Demographics of Creative Arts Alumni

Creative Arts Alumni Background		Frequency	Percentage (%)
Gender	Man	4	33.3
	Women	8	66.7
Nation	Bajau	1	8.3
	Bidayuh	2	16.7
	China	1	8.3
	Iban	1	8.3
	Melanau	1	8.3
	Malay	6	50
	Private sector employee	1	8.3
Employment Status	Graphic designer	1	8.3
	Temporary teachers	1	8.3
	Not working	9	75
	Number of Informants interviewed	12	100

4.1.2. Academicians Background.

Table 2 shows the backgrounds of the academics interviewed. A total of 13 academics were interviewed and most of them were females i.e. 8 people compared to 5 males. A total of 4 academics from the teaching field of Art Management, while others such as Fine Arts, Cinematography and Design Art Technology each with 3 academics. A total of 6 academics have experience in the industry before entering the academic field. Among the jobs they are involved in is working in Bridal Clothing Boutique, self-employed, museum operation and management, Animation Company, Event Management Company, and Local Film Company. Meanwhile, 7 academics interviewed did not have experience in the industry but continued to venture into the academic field upon graduation.

Table 2: Academicians Background

Academicians Background		Frequency	Percentage (%)
Gender	Man	5	38.5
	Women	8	61.5
Field of Teaching	Art Management	4	30.8
	Fine Arts	3	23.1
	Cinematography	3	23.1
	Design Art Technology	3	23.1
Ever served the industry or not	Yes	6	46.2
	No.	7	53.8
Number of Respondents		13	100

4.1.3. Industry Party Background.

Table 3 shows the background of the industry parties interviewed. A total of 10 people from various fields of creative arts were interviewed and most of them were male i.e. 2 people and 2 female people. A total of 3 people from the field of Photography while the rest are from the field of Printing Design, Event Management, Art Gallery, Graphic Design, National Arts and Culture Department (JKKN), Music Production and Museums. A total of 6 people are Bachelor's Degree graduates while 4 people are Diploma graduates.

Table 3: Creative Arts Industry Background

Creative Arts Industry Background		Frequency	Percentage (%)
Gender	Man	8	80
	Women	2	20
Job industry	Printing Design	1	10
	Event management	1	10
	Photography	3	30
	Art Gallery	1	10
	Graphic design	1	10
	JKKM	1	10
	Music Production	1	10
	Museum	1	10
	Highest Level of Education	Bachelor	6
	Diploma	4	40
Number of Respondents		10	100

4.2. Data analysis skills requirements

To answer the questions and objectives of the study, the need for statistical data skills is seen using the perspectives of creative arts students, former students, academicians and the industry. This is to ensure that the objectives of the study can be achieved comprehensively.

4.2.1. Creative Arts Alumni Perspective

As a result of interviews with 12 former students in the field of creative arts, all of them expressed the need for statistical analysis data skills in their studies. A total of 8 former students stated that with the skills of statistical analysis data is able to help analyze the findings of the study in the Final Year Project. Data analysis skills are very necessary to be mastered to facilitate students to get accurate and authentic research results. This is because, every conclusion or decision for a matter or problem must be proven with valid statistical data. With these skills as well, students can identify errors that occur when analyzing the results of research findings in the Final Year Project.

A total of 3 former students stated that this skill can provide statistical knowledge to students to be applied in the study, especially using quantitative methods. Students are able to analyze and explain clearly the findings by using statistical analysis data methods. Although not many people will use this method, but if there are basic skills to some extent can help in applying it in academic writing.

A total of 3 former students also stated that they can provide initial exposure related to analytical data before being applied to the world of work. This is because upon graduation they realize that these skills are sorely needed in the increasingly challenging world of work. More and more graduates are being produced each year in pursuit of a limited number of jobs. Therefore, there is a need for these skills to highlight graduates in getting a job.

A total of 3 former students also stated that as art students we have a wide scope in the field studied. In addition students can acquire additional knowledge and skills. Not only is it dependent on existing skills, but we need additional skills as an added value. These

skills are able to improve students' skills in analyzing something that requires correct and professional calculations.

4.2.2. Academician Perspectives

As a result of interviews with 13 academics, 10 of them stated the need for statistical analysis data skills in the study structure in the faculty while 3 academics stated that there is no need for these skills in the study structure in the faculty.

A total of 4 out of 10 academics who stated the need for this skill stated that although there is a need but it should not be too difficult and it is enough just a basic exposure only as an initial exposure. This is because most art students do not have basic skills in quantitative knowledge compared to students from other fields. This skill is able to facilitate students if they want to carry out research later, because in research requires this skill even if it is just basic. In addition to students, these skills are also able to facilitate supervisors in supervising students of the Final Year Project later.

A total of 3 academics stated the need for these skills as a preparation for students who want to continue their studies to a higher level. Therefore, priority should be given to postgraduate students as these skills are very necessary for them in conducting studies that require a systematic process. Students will also be better prepared if they continue their studies to a higher level later.

A total of 2 academics stated that these skills are useful in the industry even if they are just basic. This is because there are some employers that require students' skills to use the basics of analyzing data in helping them. In addition to being a side skill so that they have an advantage that can be highlighted in the industry.

While a total of 3 academics who stated that this skill is not necessary stated that usually this skill is not used in the field of art. These academics also think that students in this field do not use statistical skills instead they will use existing fine arts skills. The field of art is not the same as other fields that may require these skills. Students in the arts do not use statistical skills instead they will use cinematographic skills available in the industry.

4.2.3. Creative Arts Industry Perspectives

As a result of interviews with 10 people from the creative arts industry, all of them expressed the need for statistical analysis data skills in meeting the needs of the industry. This is because it can help them record documents based on the aesthetic value of the artifacts of a material on display. Able to sell ideas for cash. In addition to helping to analyze from the aspect of asset management, the current needs of an event held.

These skills are able to help analyze an event held and expect profits in the future. Can help them know how to record a document as well as analyze current asset needs, losses and profits as well as sales expectations. Students who have these skills are an added value or additional skill to help employers. Although only basic disclosure, but these skills can make it easier for employers to record the number of customers, profit and loss and asset handling can be documented neatly.

5. Conclusion

Overall, former students think this skill is necessary to learn the accuracy and validity of information and data obtained. For them too, statistical knowledge is needed in carrying out research activities and as an additional skill to them. From the perspective of academics stated that most students do not have a foundation in these skills and it is quite difficult for them if they want to conduct research later. Therefore, these skills are very necessary to provide early exposure to students either at the undergraduate level or at a higher level. These skills needs are also supported by the perspective of the industry which states that their need in getting employees with additional skills such as these skills. In addition to helping them record a document and analyze company data.

As such, it is clear that these skills provide more benefits than the other way around. The results of the feedback received from the alumni, academics and the industry stated that statistical data analysis skills are very necessary among creative arts students. Apart from only providing exposure in qualitative analysis skills, quantitative analysis is also very important in ensuring that students gain knowledge of data analysis skills as a whole.

It is hoped that with the results of this research, the faculty to implement structuring in the academic structure can hold a course that is based on statistical data analysis skills. At the same time can encourage research activities that use instruments and quantitative research among academics and creative arts students.

While the proposal for future researchers may be able to increase the number of respondents for former students, academics and the industry to get a more comprehensive perspective either in the form of questionnaires or interviews. Due to time constraints, the researcher was only able to take a few people from the sample in addition to the limited amount of feedback received.

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Conflict of Interests

The authors declare no conflict of interest in this study.

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