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A Review on Sample Population, Sample Size and Region selected for research on Academic Buoyancy

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***ABSTRACT**-- This review article has been developed on the basis of earlier studies about academic buoyancy. This article consists of summarised view of sample size and sample population and countries where the researches of buoyancy have been administered. Number of research gaps are discussed in the conclusion. There is a need of deep study of buoyancy in late adolescent age in under-developed countries. The sample population in most of the earlier studies is primary and secondary school students (male and female). Only few researches include college students and adults.*

***Key words*—**Population, Academic Buoyancy, Sample Size

I. INTRODUCTION

The strength of a pupil to face the routine problems of school, college and university like poor marks, pressure of work and home assignments and negative feedback etc. is known as academic buoyancy. It was found to be more important than academic resilience. This is due to the reason that academic resilience deal with extreme cases of underachievement, on the other hand buoyancy deals with poor marks and poor performance in routine school life. The population of academic resilient students is found to be small, whereas the population for buoyancy is very large. Academic resilience involves extreme cases of anxiety, stress and depression, but buoyancy involves stress of school work and home assignments. In the last but not the least, academic resilience is related to persistent failure, but buoyancy deals with confidence of the students (Martin & Marsh, 2008). The aim of this review article is to a) summarize the information about sample population and the region where the research has been conducted b) discuss the research gaps in the previous studies.

II. SAMPLE POPULATION AND SAMPLE SIZE

A sample may be defined as a small and manageable part of the target population which displays all the characteristics of the target population. At the point when we direct research, we are commonly keen on making some determination about a population of people that have some normal trademark. In any case, populations are commonly too enormous to even consider allowing perceptions on all people, and we resort to choosing a sample. So as to make derivations about the population, the sample must be representative.

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A research had been administered to develop a better understanding and a model of academic buoyancy. For this research 598 students were selected. In this sample, the percentage of students of age 8 years was 58% and of age 10 years was 42%. In the sample the percentage of male and female students was 59% and 41% respectively. The average age of the students was 14.3 years (Martin & Marsh, 2008). A research had been conducted to obtained a vivid observation about the various predictors of the "academic buoyancy" based on motivation theory. In this investigation the researcher decided to collect the data from the students of six high school students. The students that were taken under consideration were from 7th to 12th standard. Sample size for the research was 1866 students. In the sample the percentage of male students was sixty nine and of female students was thirty nine (Martin, Colmar, Davey, & Marsh, 2010). A model of "academic buoyancy" was developed by Bowen. In this study 236 participants were involved. The data was collected by snowball sampling method. In this sample number of male and female participants was 70 and 166 respectively. The mean age of the candidates was 25.61 years and the standard deviation was 8.88 (Bowen, 2010). A very effective research was conducted on achievement, motivation, engagement and academic buoyancy of the aboriginal and non-aboriginal students. A sample of 985 aboriginal students was selected. In this sample the percentage of male and female participants was 55% and 45% respectively with mean age of 14 and standard deviation of 1.5 years. To made the analysis more authentic, researcher selected another sample of 985 non-aboriginal students, in which female participants were 45% and male participants were 51%. In this sample mean age and standard deviation of the students was 14 years and 1.6 years respectively (Martin, Ginns, Papworth, & Nejad, 2013). The anxiety of test and buoyancy was studied to find their effect on academic achievement. In this research 469 students were taken as participants. In this sample the number of male and female students was 234 and 235 respectively with mean age of 15 with SD of 0.73 (Putwain & Daly, 2013). A study had been supervised to find the inverse relationship academic buoyancy and psychological risks. Data was collected from 2971 students from different schools. Out of the sample the percentage of male and female participants was 52% and 48% respectively. The data was collected in two pulses. In the first pulse the participants were with mean age of 13.84 years, while in the second pulse 14.88 years was the mean age. The percentage of 7th grade students in first grade that were in 8th grade in second pulse was 16%, of 8thgrade students in first pulse that were in 9th grade in second pulse was 24%, of 9th grade students in first pulse that were in 10th grade in second pulse was 27%, of 10th grade students in first pulse that were in 11th grade in second pulse was 19% and of students in 11th grade during first pulse that were in 12th grade in second pulse was 14% (Martin, Ginns, Brackett, Malmberg, & Hall, 2013). In another research "academic buoyancy" was studied for different subjects. The sample for the research consisted of 260 students. Out of the total sample the number of male and female students was 117 and 143 respectively. The age of the students ranged from 11 to 16 years and the average of the students was 13.2 years. The number of students from 7th standard was 80, from 8th standard was 85, from 9th standard was 50, from 10th standard was 31 and from 11th standard was 14 (Malmberg, Hall, & Martin, 2013). In another study academic buoyancy had been studied with well-being and academic achievement. 1081 students were included in sample in which 510 were girls and 571 were boys. 9.34 years was the average age and 1.55 years was the standard deviation. The students were belonged to different areas based on degree of deprivation (Miller, Connolly, & Maguire, 2013).. Academic achievement and engagement of the ADHD was studied in relation to academic buoyancy. Sample for the research was selected from junior and senior high schools. The students with ADHD was 87 in number. The age of the students from junior high school and senior high school was 11-14 years and 15-19 years respectively.

In parallel, a sample of non-ADHD students was also selected. The number of participants in the sample was 87 randomly selected from 3374 general students. The average of non-ADHD students was 14.15 years (Martin, 2014). In another approach, buoyancy was studied in relation anxiety and performance in examination. In this research secondary school students were taken under the consideration. The average age of the students was 15.03 with standard deviation of 0.58. this sample was also consisted of students from low income families. For this research, 705 participants were considered. Out of these participants, the number of female students was 336 whereas the number of male participants was 363 and 6 participants were absent (Putwain, Daly, Chamberlain, & Sadreddini, 2015). To find the impact of "academic buoyancy" on academic achievement and how control effects, a study was conducted on students of senior secondary schools. The age (average) of the students for first time and second time was 13.8 and 14.9 years respectively from 7^{th} to 11^{th} standard. the sample was consisted of 2971 participants. The data were collected from twenty-one schools in which the percentage of male students was 52% and rest were the females (Collie, Martin, Malmberg, Hall, & Ginns, 2015). The relation of "academic buoyancy" and fear of examination was efficiently studied. The number of participants for this research was 770 from the secondary schools which were coeducational. Out of 770 participants 46% were male and 54% were female. Number of students of year 10 and 11 was 321 and 449 respectively. The age (average) of the students was 15.3 years (SD= 0.59 years)(Symes, Putwain, & Remedios, 2015). Another study of academic buoyancy consisted of 325 participants from different secondary schools. In the sample 142 were the male participants and 183 were the female participants. The percentage of students of participating schools with low income were from 4.5 to 33.2%, students whose mother tongue was not English was from 0.8 to 65.1% and students with 5 GCSE passes was from 46.6 to 76.0% (Putwain, Daly, Chamberlain, & Sadreddini, 2016). In the research where academic buoyancy was studied in relation to adaptability, a desired sample was obtained from different countries. This sample was consisted of very large no of participants. From china 3617 students were participated. The range of age of participants was from twelve to sixteen years. The average age of the participants was 13.79 years with standard deviation of 0.87 years. Out of this sample 51% participants were female. From north America 989 participants were selected. In this sample average age =15.15 years and SD = 0.94 years. In this number of participants 47% was females. From United Kingdom 1181 students were involved. The participants of the sample had the mean age of 14.14 years (Martin et al., 2016). A very interesting study was conducted to know that how academic buoyancy effected by cooperative learning. In this research boys of primary school were involved. The number of students taken for research was 24. The sample was chosen on the account of abstract thinking and physical development (Salimi, 2016). Academic buoyancy was also studied in relation to system of cultural belief. The participants of the study were postgraduate and undergraduate students from different nations. The age of the respondents was from 25 to 45 and few respondents were less than 25 years. This research was consisted of 102 respondents. This sample was comprised of 84 male respondents and 18 female respondents (Dahal, Prasad, & Maag, 2017). One of the prominent researches about academic buoyancy was the impact of it on outcomes of students. Other variables in this research were Academic adversity and social support. Sample of the research was consisted of 249 individuals. The age of the individuals was ranged from 16 to 20 years. The individuals of the sample had mean age of 16.5 years and SD of 0.84. Those schools were considered where number of students who belonged to the educational, correctional and mental, community, and other health services by Central Education Office, was very large. The sample was also collected from youth centres belonged to at-risk youth program

(Collie, Martin, et al., 2017). A very important result had been administered to find the mediating role of "academic buoyancy" between learning strategies and anxiety. For this purpose, a sample of 380 students was collected. This sample of students was obtained from a bigger sample of another research. In the original sample the percentage of the students who speak English was 90% and of students who speak Chinese was 3.8%. By using SPSS a balanced sample of 380 students was obtained, in which students who speak English and who speak Chinese were in equal proportion. Almost half participants were boys. The participants had the average age of 14.41 years (Collie, Ginns, et al., 2017). A study had been supervised to understand the association between "academic buoyancy" and cognitive emotions. In the research 323 students were involved from different schools (Bahrami, 2017). The students from ninth class were taken as participants in a study which was carried out to find the relationship between career adaptability and academic buoyancy. The range of age of the students was from 14 years to 17 years. The average age of the students in this research was found to be 14.69 years. Total students taken in the research was 557. The number of male and female students was 232 and 265 respectively (Rachmayanti & Suharso, 2018). The sample of 243 adolescents was considered in the study where the effect of web based instructions on academic buoyancy was studied. The average age of the students was 15.27 years. The sample was selected in two stages. In the first stage, a large number of students was selected (approximately 800). From this population 125 students with poor academic performance were selected. Parallel to this group, another similar sized group (124 students) of students with normal academic performance was selected. In the second stage, these students were randomly selected for three groups; 1) students who received face-to-face and online instruction, 2) students who received online instructions and 3) control group with no online instructions. Thus in the final sample of the students, 161 students were in investigational group (two groups) and control group consisted of 82 students (Puolakanaho et al., 2018). In another research stress related to school was studied in relation to academic buoyancy. For this longitudinal research students from different primary schools were taken. The sample consisted of students with average age of 12.3 (SD = 0.4). The percentage of the Finnish-speaking, different language speaking and bilingual students was 96%, 2% and 2% respectively. Similarly, the percentage of the students from nuclear family, blended family, single parent with father and mother (alternately) and from foster home was 75%, 5%, 8%, 12% and 0.4% respectively. The total number of the students taken for the research was 845 (Hirvonen, Yli-kivistö, Putwain, Ahonen, & Kiuru, 2019).

III. REGION SELECTED FOR RESEARCH

In this section, intensive review of earlier researches has been done to develop a clear picture about regions of the world where the researches of academic buoyancy have been supervised. To develop better understanding and model of buoyancy a research was administered in Australia (Martin & Marsh, 2008). Academic buoyancy model for undergraduates was developed in Australia (Bowen, 2010). Academic buoyancy, motivation, engagement and achievement was studied among aboriginal participants in Australia (Martin et al., 2013). The study of "academic buoyancy" and its effect on academic performance was conducted in England (Putwain & Daly, 2013). In another study of academic buoyancy for different subjects was supervised in England (Malmberg et al., 2013). The study of academic buoyancy and psychological risks was conducted in Australia (Martin et al., 2013). The study of well-being, academic performance and academic buoyancy was supervised in Ireland (Miller et al., 2013). The impact

of buoyancy on educational achievement of students with "ADHD" was carried out in Australia (Martin, 2014). The effect of buoyancy on the anxiety and performance was studied in United Kingdom (Putwain et al., 2015). A research was supervised on relation of academic buoyancy with fear of examination in England (Symes et al., 2015). Another study to find the impact of "academic buoyancy" on the academic performance was supervised in England (Putwain et al., 2016). The research of "academic buoyancy" in relation to adaptability was supervised in China, United Kingdom and North America (Martin et al., 2016). The study to find the effect of cooperative learning on "academic buoyancy" was conducted in Iran (Salimi, 2016). The data for the research was collected from different high schools (Martin et al., 2010), secondary schools that were situated in urban areas (Collie et al., 2015) and students of Sydney University (Dahal et al., 2017) in Australia. A very prominent research was conducted about effect of academic buoyancy on academic outcomes in Australian students (Collie, Martin, et al., 2017). One of the researches of academic buoyancy in which the impact of web based instructions on buoyancy was conducted in Finland (Puolakanaho et al., 2018). Another research about how academic buoyancy effects the career adaptability was conducted in Indonesia (Rachmayanti & Suharso, 2018). The study of academic buoyancy in relation to stress related to school was carried out in Finland (Hirvonen et al., 2019).

IV. DISCUSSION AND CONCLUSION

From the above intensive review of various researches of academic buoyancy, it is very much clear that it is a burgeoning concept. This concept is very vast and has very large future value. The whole review of the buoyancy revealed that there is many of research gaps. The motive of this review article is to find out that what kind of individuals are involved in different researches and the countries where these researches has been conducted. Maximum research involved students of the primary and secondary level. As we know adolescence is a very fluctuating phase in the development of a child. It includes many changes in moral, social, spiritual, emotional and intellectual aspects (Poole & Peyton, 2013). So more intensive research of academic buoyancy should be conducted in late adolescent period. Another point has been highlighted in the review that population belonging to different subjects was not considered. A very effective research might be supervised to find the difference in academic buoyancy in students of different stream like science, humanities and commerce. There is a great need to find difference in degree of academic buoyancy in students from different disciplines and try to find out the factors that might be responsible for the difference in degree of buoyancy. Moreover, there is a room for further study of academic buoyancy in college and university students. Comparison of academic buoyancy of male and female participants is common in every research, but comparison of transgender with male and female students is not conducted by any researcher. As the academic buoyancy is a developing concept, majority of its studies has been conducted in western countries. In Under developing countries like India where the education system is stressful and overburdened, there are some great opportunities for the researchers to understand the concept of buoyancy. In the rural areas of India, where there is inadequate infrastructure, no teacher support and no teaching aids and because of these factors students do not perform up to the mark (Dey & Bandyopadhyay, 2019), academic buoyancy can be studied. In India the education system is very stressful. In this education system more stress is given on rote memorisation. The routine of the students is so hectic that they have no time for recreation and socialisation. Under such condition students suffer from high degree of stress, various psychological disorders and

poor academic performance (Sibnath, Strodl, & Sun, 2015). In such condition variations in academic buoyancy can be studied effectively. Study of academic buoyancy in under developing countries and involving students of universities and colleges is the demand of the time. Intervention based on new researches of academic buoyancy can help the schools, colleges and universities to improve the academic performance of the students.

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