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No doubt, education can be strengthened through the research activities conducted either by the teachers or students. Oxford College of Engineering and Management has proved its academic excellence in the results of Pokhara University examinations. However, the gap of research journal publication had not been fulfilled yet. Now, this gap is also going to be filled. It is true that the thin bright edge of the dark cloud is enough for the successful journey of the light. As an example OCEM journal which is in your hands now. It was a dream but now is an achievement of the College, faculties and students. There are many grounds or sources of knowledge, among all these forms can be considered as worth for achieving outstanding academic performance. Whatever success we achieve in Business, science and technology, we can't ignore research work as well. Even if we fly in the sky, the final point of rest would be the land to be landed. So, whatsoever practices have been done in investigation of knowledge, it is not enough yet. It can bring breakthrough in our life.

Finally I would like to thank to the Prof. Er. Hari Prasad Bhandari, Dr. Basant Adhikari and to the entire team for their incessant efforts to deliver this piece of work.

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Acknowledgement of Engineering Department

Concept, capability and confidence help professionals in practicing with high morale and professional integrity. Oxford College of Engineering and Management is one of the leading technical institution, shares challenging opportunity through appropriate blending of nation's requirement with young generations' wildlings. Innovation and creativity are nurtured by reinventing and revitalizing engineering services for nation building when the ethical values and social services are the mile stone. It is only achievable if learning teaching environment is research evidence-based and outcome of study is directly applicable for infrastructure development through high-end technology, safety and glocalization. For this system, OCEM research department has taken a great initiation of publishing the research journal. We extend our appreciation and sincere to our research head, who is bringing peer reviewed journal in our hand. We believe that this journal will soon be one of the greatest journals in the world.

Challenges of today's engineering education are emergent, necessitating calls for its reformation to empower future engineers function optimally as innovative leaders, in both national and international contexts. These challenges: keeping pace with technological dynamism; high attrition; and most importantly, quality teaching/learning require multifaceted approaches. And this platform will open all the doors to faculties to leverage on quality evidence-based teaching. Nevertheless, linkages to equivalent global perspectives are presented from Nepal.

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The Consequences of Mother International Migration To The Left Behind Girls Under 16 For Their Education, Health & Psycho-Social Development in Chitwan District

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Abstract

The primary objective of this study was to examine the consequences of Mother International Migration (MIM) to the Left Behind Girls under the age of 16 on their Education, Health and Psychosocial Development in Nepal. A mixed methods approach was used where the survey study and qualitative interview were used as data collection methods. A five-point Likert scale survey questionnaire and the Semi-structured Interview were used as research instruments to collect data. The consent form was sent to immediate parents and the left behind girls for their acceptance to take part in this study. In the first stage, twenty different schools were selected randomly and later purposive sampling method was used to select the interviewees. Two hundred and fifty questionnaires were dispatched but two hundred and thirty-seven survey questionnaires were returned by the returnees which was more than 94.8 % response rate. Approximately, 45% of the sampled girls were under the age of 12 and 55% of them were between the age of 12 to 16 in this study. The results show that there was positive relationship between the MIM and feeling of loneliness, poor health suggestion, poor health condition, negative neighbour's attitudes, problem of relationship, and unsupportive house environment ($p < 0.05$). Again, there is significant negative association between MIM and social attachment, use of social media and outdoor activities, better health condition, positive psychosocial feeling, family support and availability of desired food ($p < 0.05$). About 80% interviewees realized that their overall development of education, health and psychosociology have been affected after their MIM. Approximately, 60% interviewees argued that the development of the education health and psychosocial development were negatively affected by their MIM. The qualitative results supported the quantitative results to foreground the phenomenon and to get additional information on something that wasn't expected on the impact of MIM to the LBGS

Recent increases in MIM to European, Arabic and other countries have invited an upwelling of interest in how the absence of mothers affect the left-behind girls in Nepal. This study has supported the previous findings on (MIM) that the LBGs had been negatively affected by the MIM for their education, health & psychological development. The implication of this study is to aware the policy makers and governmental administrators about the positive and negative consequences MIM on LBGs for their education, health and psychosocial development. The main contribution of this study is to add new knowledge on the consequences of MIM to the LBGs in the archive of foreign employment in the Nepalese context.

Keywords: *Mother international migration, left behind girls, education, health and psychosocial development, respondents, significant relationship.*

1. Introduction

Among various consequences of MIM, family constellation, a number of siblings, birth order of the siblings and the educational, health and psychosocial development of the left behind girls (LBGs) under the age of 16 have gained increasing attention from the migration and sociology scholars as well as the social science researchers in the Asian context (Adhikari, 2018). The primary objective of this study was to examine the consequences of MIM to the LBGs for their education, health and psychosocial development in the Asian countries based on the family constellation, birth order, gender, age differences and a number of siblings in mother migrant households (Cortes, 2015; Lahaie, Hayes, Peng & Wong, 2015; Piper, & Heymann, 2009; Thimothy & Sasikumar, 2012; Yeoh & Lam, 2016; Meyerhoefer & Chen, 2010; Bhadra, 2007). It is not yet known that both theoretically and practically, as to whether the LBGs are particularly vulnerable or not. It is also not known that how, when and under what circumstances, the LBGs are suffering after their MIM (Adhikari, 2018; Dhar, 2012; Torgler & Valev, 2016). The previous studies on MIM have largely been focused on macro determinants and economic and demographic changes, however; the special issues of educational, health and psychosocial development of the LBGs have been marginalized and less prioritized (Resurreccion, 2005; Adhikari, 2018; Battistella & Conaco, 1998; Rossi, 2009). Many LBGs have already turned on antisocial activities (for example, addiction of alcohol and drugs, unprotected sexual attempts, prostitution, criminal activities) which have been increased due to the lack of mother's physical attachment with them (Abramsky et al., 2018; Adhikari, 2018). As a result, the negative consequences have been increased on educational, health and psychosocial development of the LBGs in the Asian countries, like Nepal (Adhikari, 2018; Bouchoucha, 2013; Mazhuvanchery, 2015; Pescaru, 2015).

The next issues of consequences of MIM to the LBGs are embedded in the number of siblings in family, their age, gender, relationships with siblings, relationship with parents and their birth order which can inherently impact on the educational, health and psychosocial development of the LBGs. Based on the socialization and interaction perspectives, the experiences of the childhood with siblings are possible indicators to affect the individual's gender identity, intellectual development, and personality characteristics which can affect the outcomes of educational and career development (Recchia & Wainryb, 2014). Four major characteristics of sibling relations in early childhood are embedded in the sibling interactions; intimacy; large individual differences and the age difference between siblings. Resources and opportunities are embedded in different extent in the sibling structure in each child in the family which accompanies socialization practices among siblings, but the higher birth order is also closely related to large sibship size which is also negatively related to educational outcomes (Hauser & Sewell 1985; Black, Devereux & Salvanes, 2016). The number of siblings, age and the birth order of siblings are also directly embedded in girl's educational development. With additional siblings, each child's average share of parents' time, energy, and money which will be lowered or leading to lower educational attainment (Group of colleagues, 2012). Socially, boys are provided with more educational opportunities than girls because parents believe that they will be able to support financially to their elderly age. Conversely, girls are taught to cook and clean so that they will be able to take care of their own families after marriage. Again, the household responsibilities, together with play activities, are the only socialization areas in which both parents treat girls differently from boys (Lytton and Romney 1991; Quadlin, 2018; Alekseeva, Rzhanova, Fominykh & Zyryanova, 2016). The previous literature reveals that girls' time spent on domestic work increases in

the presence of brothers, but not in the presence of sisters; boys' housework time increases more in the presence of brothers and less in the presence of sisters in 16 developing countries. The role of first-born girl of mother migrant households is compulsorily responsible to take care for her younger siblings in the Nepalese societies because they are regarded as the second mothers to take care for their younger siblings and to support for their health educational and psychosocial development (Mechoulan & Wolff, 2015). On the other hand, there are some serious issues of sibling's conflicts for the purpose of holding the leadership role in the mother migrant households and individual disagreement among siblings. The consequences of age difference between siblings often makes the issues of power and control, sources of contention for children, rivalry and jealousy which can affect psychosocial development of the LBGs. Additionally, the conflict of siblings frequent, poorly resolved and sometimes highly aggressive, violent or even abusive which breaks the peaceful house environment and eventually girls are negatively affected for their psychosocial development because of their patient nature and high tolerance capacity (Kolak & Volling, 2011). The number of siblings, age and the birth order of siblings are also directly embedded to girl's health and psychosocial development in the Asian context because children are socialized into appropriate gender roles according to their age where parents expect older siblings to undertake more responsibility and become role models for their younger siblings in multi-child families which only applies for the girls not for boys (Adhikari, 2018; Edmonds, 2006). It is consistently found an inverse relationship between sibship size and educational outcomes (Booth & Kee 2008; Lu & Treiman 2008). The primary objective of the study was to examine the consequences of MIM to the LBGs under the age of 16 on education, health and psychosocial development between the mother migrant and non-migrant households. The secondary objective was to compare the education, health and psychosocial development of the LBGs between migrant and non-migrant households.

2. Literature Review of the Study

The word migration signifies both male and female migrants, but it does not specify directly for male or female migrants. When the motivations, outcomes, and obstacles to international migration are studied, there is a growing awareness in social science research that consideration of gender is critical phenomenon (Rossi, 2009; Nguyen Yeoh, & Toyota, 2006). A little effort has been done to model explicitly for the differences between male and female migrants with respect to determinants of international migration and their changes overtime. This misunderstanding is a serious shortcoming in the international female migration history because there is not any clear definition of male and female migrants (Bank, 2007). It is argued that theoretical model and empirical findings focusing on male migration cannot adequately describe female migration. More importantly, the studies that do not differentiate between males and female migrants can state wrongly the effects of independent variables on migration for both genders (Morrison, Schiff & Sjöblom, 2007; Moore, 2016; Rossi, 2009). MIM is defined as a form of family transition which breaks the inherent relationship between both mothers and children (Mberu & Pongou, 2012; Wimalaratana, 2017).

2.1. Theoretical Framework of the Study

MIM and overall development of the LBGs are interconnected to education, health and psychosocial development of the LBGs because mothers had undoubtedly played the primary role for overall

development of the LBGs all over the world. The LBGs who lived in incomplete family environment were easily neglected, received inadequate care and suffered from the worse school performance; physical health/physical well-being; higher risk of injury, higher proportion of poor behaviour and lower nutrition (Adhikari, 2018; Cohen, 1996). The LBGs who were cared by younger caretakers had been suffered from behaviour of excessive alcohol drinking; smoking; internet addiction and the problem of mental health in the mother-migrant households (Pescaru, 2015). They were also found of lower socioeconomic status and had more psychological problems in mother-migrant households than father-migrant households (Lam & Yeoh, 2016). More psychosocial problem was found in adolescence LBGs older than the age of 14 (Adhikari, 2018).

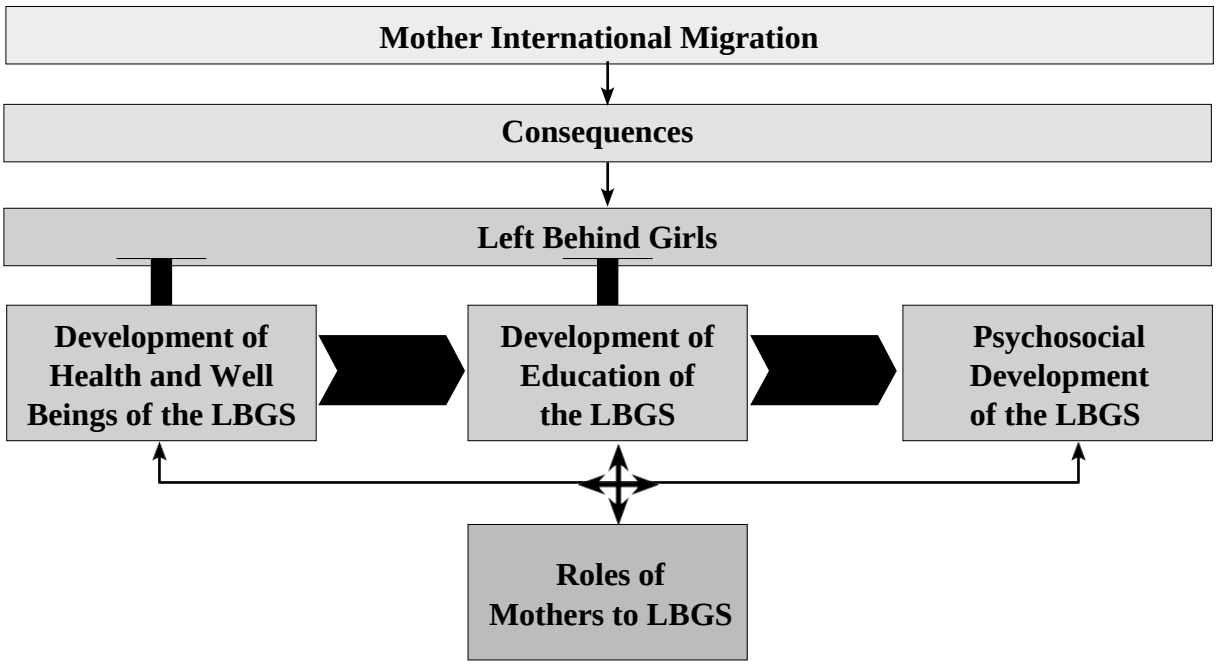

Figure 1. Theoretical Framework of the Proposed Study (c.f. Cortes, 2015)

2.2 Empirical literature on mother roles for LBGs

Cortes (2015) found that there was larger negative consequence to LBGs in mother-migrant households than the father-migration households. The same study further summarized that school enrolment of the younger girls had been less likely affected by household economic resources, but they had been negatively affected by their MIM in Philippines. Again, Moran-Taylor (2008) noted that the larger negative consequence of MIM was found in girls than in boys for their educational, health and psychosocial development in Guatemala. The same study further disclosed that immediate parents of LBGs were unable to maintain a watchful eye and strong parental control over them which resulted lower level of child development. Many LBGs were found promiscuous in mother-migration households which had led to an increase in single motherhood between the age of 12 and 13 (c.f., Gajos & Beaver, 2015). Similarly, Grimes (1998) noted that the increase in the number of single mother was one of the most negative consequences of MIM in Putla for the overall development of the LBGs. Cortes (2015) disclosed that the LBGs were found more likely to involve in unprotected sex and excessive alcoholic habit and sometimes involved in prostitution for the pocket money and foods in mother-migrant households which had resulted unwanted social practice and directly affected for their educational outcomes (Pfeiffer Tailor,

2007). Adhikari (2018) and Tong, Luo & Piotrowski (2015) concluded that MIM had greater negative consequences to the LBGs than the father international migration. The same study further argued that mothers were found naturally, culturally and maternally able to motivate their daughters better than their fathers and also found usually skilful in nurturing and caring for the children in the comparison of father migration households.

Similarly, Hugo and Ukwatta (2010) and Peng and Wong (2015) disclosed that the separation between mother and child had created feelings of loneliness, helplessness, regretfulness and guiltiness which had created the feeling of vulnerability and insecurity for girls from their male counterparts. The same study further found that 60 out of the 400 mother-migrant households reported that LBGs had suffered by mental and physical health problems due to the lack of mother's primary care. It was concluded that teenage daughters of mother-migrant households were forced to do extra household duties, for example, cooking, washing, cleaning, cattle rearing that had diminished the level of educational performance (Bank, 2007; Cortes, 2015; Jampaklay, 2006; Jaupart, 2018). The same studies also reported that mothers had a bigger spiritual role in family formation than fathers to support the LBGs and also concluded that the extended family members who helped the fathers did not involve in the spiritual development of the children. It was importantly noted that a long-term absence of fathers did not have any serious consequences for the child's educational achievements compared with mother long-term absenteeism. It was also concluded that boys culturally were found involved in less household works and spent more time for outdoor games compared with girls in SAARC countries (Adhikari, 2018). Conversely, the LBGs were negatively affected for their educational, health and psychosocial development in mother-migrant households because they have to do extra household duties (Hugo & Ukwatta, 2010). Research study of Cortes (2015) and Adhikari (2018) found that the gender roles are still very rigid in many Asian countries for example, Nepal, India, Pakistan, Shri Lanka where the mother's main role is to support for the development of children and the father main role is to be the breadwinner (Sijapati, 2015). The same study disclosed that MIM had been perceived as a much larger disruption in a child life than father international migration. The repeated news of Kathmandu Post reported by Mahata (2018) found that many LBGs were even raped by their fathers after the MIM and sometimes found sexual relationship between father and daughter. Meyerhoefer and Chen (2010) found that MIM was associated with a significant holdup in the educational degradation of the left behind girls in China. The same study further argued that the level of education was negatively affected due to shifting the time allocation of LBGs toward household duties. Cortes (2015) and Battistella and Conaco (1998) concluded that MIM was found more detrimental than father international migration in the Philippines. The role of mother seemed more attentive; skilful and more professional on how to care their children than the roles of fathers (Gunduz, Karbeyaz & Ayranci, 2011). Thus, children without their mothers seemed more problematic in mother-migrant households compared with father-migrant households (Fletcher et al., 2007; Gajos & Beaver, 2015). Yeoh and Lam (2016) found that fathers were scared to care their matured and teenaged daughters in mother-migrant households. The same research further disclosed that the left behind teenaged and matured girls had expressed their strong preference for mothers' support for their proper care and development of health, education and psychosocial issues during the age of 13-16 in the Asian countries (c.f., Cortes, 2015).

3. Research Task, Data Collection & Analysis

This research study had used a mixed method design that is both hypothesis testing and hypothesis generating. Girls aged, 10-16 years as the secondary schoolers were identified by visiting local government offices in Chitwan District of Nepal. The key informants and immediate parents of the LBGs were contacted for the collection of data of both quantitative and qualitative approaches Moreover, the sample population was selected from both private and public institutions (for example, Schools, Hospitals, Police Departments, Local Child Clubs, Nongovernment Organizations (Cohen et al., 2007). Two hundred and thirty seven left behind girls (LBGs) were selectated randomly. All the sample population were contacted by the field visits, email, and personal contact, telephone conversation, via local government and regional authorities and other means of communication. Data analysis tools of this study were content analysis and descriptive statistics analysis (Cohen et al, 2007; Lichtman, 2006; Thomas, 2009). The Factors Reduction Method was applied to reduce the number of variables. After that, the Logistic Regression Model via Principal Component Analysis Method was used to find the relationship between dependent and independent variables. The descriptive statistics analysis was also computed to calculate subscales, grand mean values, and standard deviation. Again, the values of Cronbach's Alpha were computed to examine the reliability and internal consistency of the subscales of this study (Creswell & Plano Clark, 2018; Cohen et al, 2011). This research project had followed the UN Convention on the Rights of the Child (UNCRC) which became useful to recap the main principles here. The UNCRC to children research was fully followed to minimize the ethical dilemmas for the LBGs. Again, all the principles of child ethic were fully followed during the period of the data collection and analysis. A consent form was sent in advance, follow-up was continued until the consent forms returned. Personal data of each participant and interviewee were guaranteed not to publish (Gibb, 2007). A short interview with six interviewees was conducted with six left behind girls to deepen the consequences of MIM to the LBGs for their health, education & psychosocial development.

4. Results

The results of the 237 survey respondents were involved in this study where approximately, 45% of the sampled girls were under the age of 12 and 55% of them were between the ages of 12 to16. Thirteen respondents did not return the survey questionnaires. The response rate was approximately 95% which was excellent response rate. The analysis was based on Factor Reduction Model via Principal Component to find the new Principal Components. The new PCs were named based on the grouped variable decided by the Factor Reduction Model. In the second phase, subscales were identified based on descriptive statistics where the values of grand mean and Standard Deviation (SD) were calculated. The analysis further applied the Binary Logistic Regression (BLR) Analysis which examined the relationship between the independent and dependent variables. The BLR model examined the positive and negative consequences of MIM to the LBGS for their education, health and psychosocial development. The results have also presented the summary of the vales of mean, SD, Cronbach's Alpha and p values. The Wholesome Model for the significant indicators was computed to examine the consequences of MIM to the LBGs. (Jampaklay, Richter, Tangchonlatip & Nanthamongkolchai, 2018). The mean values of the subscales less than 3.00 signify that the LBGS were not adequately supported by their immediate parents for their education, health and psychosocial development after their MIM.

4.1 Summary of mean, standard deviation and Cronbach's Alpha of the Subscales (n = 237).

Descriptive statistics was computed to find the mean and SD. Similarly, the scale reliability was computed to calculate Cronbach's Alpha and an independent t-test was computed to calculate p values.

Table 1. Values of the mean, SD and Cronbach's Alpha of the subscales

Subscales	Mean	SD	Cronbach's Alpha	Number od variables
Unmet needs of parental affection	3.05	1.13	.81	8
Health stress	3.05	1.26	.70	7
Unsupportive roles of immediate parents	3.10	1.25	.75	9
Poor neighbouring behaviour	3.10	1.28	.73	7
Lack of family support	3.10	1.21	.71	10
Communication activities	3.19	1.22	.71	9
Poor health condition	3.25	1.12	.82	8
Social isolation	3.29	1.22	.71	10
House environment	3.32	1.02	.70	10
Adverse psychosocial thinking	3.33	1.31	.87	9
Depressive symptoms	2.20	1.26	.72	8
Neighbour's attitude to neighbours	2.45	.924	.71	7
Feeling of loneliness	2.57	0.99	.70	8
Use of social media and outdoor activities	2.92	1.05	.75	10
Social injustice to LBGs	2.97	0.987	.74	9

The survey respondents were approximately undecided on the statements that unmet needs of parental affection, health stress issues, unsupportive roles of immediate parents of the LBGs, poor neighbour behaviour, and the lack of family support signifying that the mean values of these subscales were noticed around 3.00-3.10. But, respondents were approximately agreed with the statements that communication activities with their parents, poor health condition, social isolation, house environment, and adverse psychosocial thinking signifying that the LBGs had been affected on education, health, and psychosocial social development by their MIM. Most of the subscales were found having a bit lower and average mean values signifying that the LBGs were not adequately supported by their immediate parents for their education, health and psychosocial development. One of the interviewees note that:

"I am lacking my mother's support so that I could not improve my educational performance which made me so frustrated and depressive" (Interviewee-3).

*"I am so much frustrated that my family members never understand my problems, specially, health and educational issues. My mother was so concerned about my demands, support to my education and social involvement but I missed now in the absence of my mother" (*Interviewee-6).

"I am now feeling how my mother could understand what I really preferred eating as my best food, what I really wearing as my best cloths and what I really visiting as my best place and relatives but now it is my dream to get my best food, best dress and best places to visit (Interviewee-4).

"I now realized that my mother understood my choices, demands when she was with me. I really prefer eating as my best food with mother, what I really wearing as my best cloths and visiting as my best place

and relatives but now it is my dream to get my best food, best dress and best places to visit (Interviewee-1).

"*My mother always cared me about my food and health. Similarly, my immediate parents also did high care for my health and my best food. I do not need to wait for my mother's return to get my best food because my immediate parents always ask me what food I prefer*" (Interviewee-5).

"I am really missing my mother's supporting roles because my immediate parents never tried to know what I really want"(Interviewer-2).

The qualitative results show that there were both negative and positive consequences of MIM to the LBGs for their education, health and psychosocial development because most of the statements quoted by the interviewees were found negative signifying that the LBGs were not supported as their requirement (see in the Table 1) after their mother international migration. Five interviewees out of six disclosed that they were not adequately supported by their immediate parents in the mother migrant households. But one interviewee positively perceived the roles of immediate parents for her education, health and psychosocial development.

4.2 Summary of the significant indicators of the Wholesome Logistic Regression Model (WLRM)

There were four research problems in the analysis section. Each research question was answered by the survey research instrument. Factor Reduction Method had had extracted twelve significant indicators for the consequences of MIM to LBGs on their education, health and psychosocial development. The results identified twelve significant indicators in the quantitative analysis (see in the Appendix 1 at Table 3). All the twelve significant indicators were entered the Wholesome Binary Logistic Regression Model to examine the consequence of MIM to LBGs. But the results of WLRM show that only three indicators were found significant to the LBGs on their education, health and psychosocial development (the use of social media and outdoor activities, sound psychosocial feeling, and the family support).

Table 3. Wholesome Model of the Binary Logistic Regression Model (N = 237)

Independent variables	B	S. E	Wald	df	Sig	Exp(B)	95% C.I.for EXP (B)	
							Lower	Upper
Social attachment	-.103	.202	.260	1	.610	.902	.608	1.340
Use of social media andoutdoor activities	.576	.260	4.897	1	.027	1.780	1.068	2.965
Better health condition	-.580	.527	1.208	1	.272	.560	.199	1.575
Feeling of loneliness	-525	.294	3.187	1	.074	.591	.332	1.053
Poor health condition	.175	.256	.465	1	.495	1.191	.721	1.967
Lack of health suggestion	-.349	.271	1.658	1	.198	.705	.414	1,200
Negative neighbour's attitude to LBGs	-.540	.411	1.726	1	.189	.583	.261	1.304
Sound psychosocial feeling	.900	.298	9.132	1	.003	2.459	1.372	4.408
Problems of relationship and connection	.864	.502	2.965	1	.085	2.374	.887	6.349
Unsupportive house environment	.457	.240	3.619	1	.057	1.580	.986	2.532
Family support	.679	.264	6.619	1	.010	1.972	1.176	3.309
Availability of desirable food	-.498	.256	3.771	1	.052	.608	.368	1.005
Constant	-.010	.165	.004	1	.949	.990	-	-

The Omnibus Tests (Chi-Square = 63.043, df = 12, p = .001) and associated significance level less than 0.05, the present model shows a decrease in deviance in prediction from the base model. The model

summary Table shows the values of -2Log Likehood (232.205), Cox and Snell R^2 and Nagelkerke R^2 [25.60 % (Cox and Snell) and 35.20 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that $p = 0.280 > 0.05$ is insignificant which was good to support for the regression model fit. The classification Table shows that out of 104 LBGs who chose the first option they were affected by their MIM, this model predicts 29 LBGs were not affected for their education, health and psychosocial development after their MIM. Again, out of 109 LBGs who chose the second option that they were not affected by their mother out migration, 30 of them were found affected by their MIM. Thus, this model predicts the impact of MIM to the LBGs on education, health and psychosocial development with 71.4 percent accuracy for those who said they were affected and also predicts 73.1 percent of accuracy of prediction for the LBGs who chose the second option that they were not affected by their MIM.

The results further confirmed that the overall percentage of correctness of observed data was 72.3 %. The results also show that there was significant association between the use of social media and outdoor activities, sound psychosocial feeling and family support to LBGs and MIM ($p < 0.05$ with odds ratio 1.780, 2.459, 1.972) (see in the Table 3). Again, when the independent variable the use of social media and outdoor activities increases one unit, the impact of MIM can be predicated to increase around 1.780 times if other variables are controlled signifying that the use of social media and outdoor activities has positive impact on education, health and psychosocial development of the LBGs after their MIM (Odd ratio = 1.780 > 1, B = 0.576 > 0). The current study has supported the previous finding of Dhar (2012) because the previous and the current studies have found that there was positive correlation between using social media and the education, health and psychosocial development of the LBGs.

Similarly, when the independent variable sound psychosocial feeling increases one unit, the impact of MIM can be predicated to increase around 1.972 times if other variables are controlled signifying that psychosocial feeling has positive impact on education, health and psychosocial development of LBGs after their MIM (Odd ratio = 2.459 > 1, B=.0.900 > 0). Again, when the independent variable family support increases one unit, the impact of MIM can be predicated to increase around 2.459 times if other variables are controlled signifying that family support has positive impact on education, health and psychosocial development after MIM (Odd ratio = 1.972, B = 0.679 > 0). This study has also supported the study of Jensen, Giorguli Saucedo & Hernández Padilla (2018) because the previous and the current studies have found that family support to the LBGs has positively correlated for the education, health and psychosocial development of the LBGs.

4.3 Results on categorical variables of the Linear Regression Model

The categorical variables on the ages of the LBGs and their mothers' feeling were entered the Linear Regression Model of the SPSS to find the correlation between them.

Table 4. The correlation between categorical variables and the remembrance of mothers by the LBGs

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.173[a]	.030	.021	.435	2.036

a. Predictors: (Constant), Fifteen to sixteen years, fourteen to fifteen years
b. Dependent Variable: QNo15 Do you remember your mum now?

The outputs of the first Table show the model summary and overall fit statistics. The results indicate that the R value is .173. Therefore, remembrance of mothers is positively correlated with the ages of the LBGs, signifying a weak relationship between the remembrance of mothers by the LBGs and the ages of the LBGs. Again, the R^2 value is .0.030 signifying that the independent variables (ages of the left behind girls) have explained total variances of 3 % on dependent variable (remembrance of mothers by the LBGs) which is a very small variation between the remembrance of mothers by the LBGs and different ages of them. Again, the adjusted R^2 of the model is 0.021 with the R^2 = .030 that means the linear regression explains 2.10 % of the variance in the data which is very small difference so that the regression equation does not appear to be useful for making predictions for the different ages of the LBGS since the value of R^2 is very lower than 1. The Durbin-Watson d = 2.036, which is between the two critical values of $1.5 < d < 2.5$ and therefore we can assume that there is no first order linear auto-correlation in the data**.**

Table 5. Results of ANNOVA

Model	Sum of squares	df		F	Sig
Regression	1.157	2	.629	3.329	038[b]
Residual	40.975	217	.189		
Total	42.232	219			

a. Predictors: (Constant), Fifteen to sixteen years, fourteen to fifteen years b. Dependent Variable: QNo15 Do you remember your mum now?

The results of the Table 5 show that the regression model was the statistical significance that was run. Here, $p < 0.038$, which is less than 0.05, indicating that, overall, the regression model statistically significantly predicts the level of mothers' remembrance by the LBGs which a good fit for the data is.

Table 6. Results of coefficients

Coefficients[a]

Model 1	Unstandardized Coefficients		Standardized Coefficients		Sig	95.0% Confidence interval for B	
	B Error	Std.	Beta	t		Upper	Lower
Constant	1.205	.046		26.004	.000	1.113	1.296
Fourteen to fifteen years	-.008	.076	-.008	-.111	.912	-.159	.142
Age of the LBGs (15 and 16 Years	.153	.067	.169	2.294	.023	.022	.285

We are 95% confident that the slope of the true regression line is somewhere between –0.159 and 0.142. In other words, we are 95% confident that for the LBGs whose ages lie between 14 to 15, the level of mothers' remembrance by the BGs decreases somewhere between –0.159 to 0.142. It is concluded that on average, for the LBGs whose ages lie between 14 to 15 years, the level of mothers' remembrance will decrease -.008 times. Again, we are 95% confident that for the LBGs whose ages lie between 15 to 16, the level of mothers' remembrance by the BGs increases somewhere between .022 to 0.285. It is concluded that on average, for the LBGs whose ages lie between 15 to 16 years, the level of mothers' remembrance will increase by 0.153 times.

6. Discussion & Conclusion

This study was conducted at Chitwan District to examine both positive and negative consequences of MIM to the LBGs for their education, health and psychosocial development among the mother migrant households. The MIM and its consequences on the LBGs is a very debatable issue for the women and gender study in the Asian context. The empirical research reveals that there was both negative and positive consequences of MIM to the LBGs for their education, health and psychosocial development in MIM households. A mixed method research approach was applied to collect data. Two hundred and thirty-seven LBGs were involved in the survey study and six LGBs as interviewees were involved in the qualitative study. There were twenty-two subscales with the values of mean, SD and Cronbach's Alpha (see in the Table 1) and also twenty-two independent variables in this study. The results indicate that there were twelve significant indicators for the consequences of MIM ($p < 0.05$) [see in the table 23]. The results show that there was significant association between the consequences of MIM and the use of social media and outdoor activities, positive psychosocial feeling and family support ($p< 0.05$ with odds ratio 1.780, 2.459, 1.972) in the Wholesome Model of Binary Logistic Regression Analysis. The implication of the study is to support local government to formulate the child friendly policy and make aware the local government to protect child rights in Chitwan District. The findings of the current study can be generalized in the same context of larger population because of the larger quantitative sample population involvement in this study. The results further conclude that the linear regression model was the statistical significance where, $p < 0.038$, which is less than 0.05, indicating that, overall, the regression model statistically significantly predicts the outcome variables which is a good fit for the data. The development of the left behind girls under the age of 16 on education, health and psychosocial development is a globally debatable issue so that researchers, academicians, police officers, policy makers and the government have to focus on their future research for the children rights, security, safety and their overall development. The universe is based on variation on mankind, geographical structure, population, resources, political system, form and nature of governments so that there are the variations in the condition of the LBGS among each country. Nepal is an underdeveloped country where the condition of the LBGs is adverse and unfavourable for their overall development. The issue of the MIM and its negative consequences have to be addressed in the future research of the international researchers and academic institutions. This study is the ongoing research phenomenon to collect he larger scale of and analyzing holistically in future. It is estimated that two thousand respondents for the survey study, fifty-one interviews for the qualitative study and five Focus Group Discussion have been targeted to complete the study in future. The doctors, police officers, immediate parents, the LBGs between the aged of 10 to 16 years, compounders, doctors and social workers will be focused to collect qualitative data and quantitative data to enlarge this study.

References

Adhikari, B. (2018). The negative impacts of MIM to the left behind girls to the left behind girls under 16 years old on education, health and psychosocial development in Chitwan District. Retrieved from https://www.researchgate.net/search.

Adhikari, J. (2006). Nepali women and foreign labour migration (1st Ed.). Kathmandu: UNIFEM. Agbola, F., & Acupan, A. (2010). An empirical analysis of international labour migration in the Philippines. *Economic Systems, 34*(4), 386-396.

Antman, F. (2012). Gender, educational attainment, and the impact of parental migration on girls left behind. *Journal of Population Economics*, 25(4), 1187-1214.

Bank, W. (2007). *The International Migration of Women*. Washington: World Bank.

Basnet, A. (2013). Impact of Increased Migration Opportunity on Human Capital Accumulation of Young International Migrants: A Case of Nepal. Retrieved from https://www.eur.nl/

Battistella, G., & Conaco, M. (1998). The Impact of Labour Migration on the Children Left Behind: A Study of Elementary School Children in the Philippines. *Journal of Social Issues in Southeast Asia*, *13*(2), 220-241.

Bhadra, G. (2007). Twins in the shadow of a dead baby. *Infant Observation*, *10*(2), 195-202.

Botezat, A., & Pfeiffer, F. (2014). The Impact of Parents Migration on the Well-Being of Girls Left Behind Initial Evidence from Romania. *SSRN Electronic Journal*. http://dx.doi.org/10.2139.

Bouchoucha, I. (2013). The impact of parental migration on children left behind: The case of Tunisia. *Qscience Proceedings*, *2013*(1), 14. doi: 10.5339/qproc.2013.fmd.19.

Cebotari, V., Siegel, M., & Mazzucato, V. (2016). Migration and the education of girls who stay behind in Moldova and Georgia. *International Journal of Educational Development*, 51, 96-107.

Chandra, B. (2007). International Labour Migration of Nepalese Women: Impact of their Remittances on Poverty Reduction. Retrieved from https://www.econstor.eu/bitstream/10419/17.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education*. London, Routledge Publication.

Cohen, R. (1996). *Theories of migration*. Cheltenham, UK: E. Elgar.

Cortes, P. (2015). The Feminization of International Migration and its Effects on the Left Behind children: Evidence from the Philippines. *World Development*, 65, 62-78.

Dhar, R. (2012). Women and International Migration: A Cross-cultural Analysis. *Social Change*, 42(1), 93102.

Gao, Y., Li, L., Chan, E., Lau, J., & Griffiths, S. (2013). Parental Migration, Self-Efficacy and Cigarette Smoking among Rural Adolescents in South China. *Plos ONE*, *8*(3), e57569. doi: 10.1371/journal.pone.0057569.

Giannelli, G., & Mangiavacchi, L. (2010). Girls Schooling and Parental Migration: Empirical Evidence on the 'Left-behind' Generation in Albania. *LABOUR*, 24, 76-92.

Gibson, J., McKenzie, D., & Stillman, S. (2011). The Impacts of International Migration on Remaining Household Members: Omnibus Results from a Migration Lottery Program. *Review of Economics and Statistics*, *93*(4), 1297-1318. doi: 10.1162/rest_a_00129

Gunduz, T., Karbeyaz, K., & Ayranci, U. (2011). Evaluation of the Adjudicated Incest Cases in Turkey: Difficulties in Notification of Incestuous Relationships. *Journal of Forensic Sciences*, *56*(2), 438-443.

Guo, Q., Sun, W., & Wang, Y. (2016). Effect of Parental Migration on Women Health in Rural China. *Review of Development Economics*. http://dx.doi.org/10.1111/rode.12289

Hoang, L., Lam, T., Yeoh, B., & Graham, E. (2014). Transnational migration, changing care arrangements and left-behind girls' responses in South-east Asia. *Girls Geographies*, 13(3), 263277.

Hujo, K., & Piper, N. (2007). South South Migration: Challenges for development and social policy. *Development*, 50(4), 19-25.

Hysing, M., Petrie, K., Bøe, T., & Sivertsen, B. (2017). Parental work absenteeism is associated with increased symptom complaints and school absence in adolescent children. *BMC Public Health*, *17*(1). doi: 10.1186/s12889-017-4368-7

Jampaklay, A., Richter, K., Tangchonlatip, K., & Nanthamongkolchai, S. (2018). The impact of parental absence on early childhood development in the context of Thailand. *Asian and Pacific Migration Journal*, *27*(2), 209-230.

Jensen, B., Giorguli Saucedo, S., & Hernández Padilla, E. (2018). International Migration and the Academic Performance of Mexican Adolescents. *International Migration Review*, *52*(2), 559-596

Lahaie, C., Hayes, J., Piper, T., & Heymann, J. (2009). Work and family divided across borders: the impact of parental migration on Mexican girls in transnational families. Community. *Work & Family*, 12(3), 299312.

Lu, Y. (2012). Education of Girls Left Behind in Rural China. *Journal of Marriage and Family*, 74(2), 328341.

Lu, Y. (2015). Internal migration, international migration, and physical growth of left-behind children: A study of two settings. *Health & Place*, *36*, 118-126

Man, Y., Mengmeng, L., Lezhi, L., Ting, M., & Jingping, Z. (2017). The psychological problems and related influential factors of left-behind adolescents (LBA) in Hunan, China: a cross sectional study. *International Journal for Equity in Health*, *16*(1). doi: 10.1186/s12939-017-0639-2

Mazhuvanchery, S. (2015). 6. International Labour Organization (ILO). *Yearbook of International Environmental Law*, *26*, 583-587.

Meyerhoefer, C., & Chen, C. (2010). The effect of parental labour migration on children's educational progress in rural china. *Review of Economics of the Household*, *9*(3), 379-396.

Peng, Y., & Wong, O. (2015). Who Takes Care of My Left-Behind Girls? Migrant Mothers and Caregivers in Transnational Child Care. *Journal of Family Issues*, 37(14), 2021-2044.

Pescaru, M. (2015). Consequences of Parents' Migration on Children Rearing and Education. *Procedia - Social and Behavioural Sciences*, *180*, 674-681.

Resurreccion, B. (2005). International Workshop on the Impacts of Migration on 'Left-Behind' in Asia. *Gender, Technology and Development*, *9*(3), 437-440.

Rossi, A. (2009). The Impact of Migration on Children Left Behind in Developing Countries: Outcomes Analysis and Data Requirements. *SSRN Electronic Journal*. doi: 10.2139/ssrn.2490380

Sijapati, B, (2015). Women Labour Migration from Asia to the Pacific; Opportunity and Challenges; *International Organization for Migration*, 12, 1-16.

Tong, Y., Luo, W., & Piotrowski, M. (2015). The Association between Parental Migration and Childhood Illness in Rural China. *European Journal of Population*, *31*(5), 561-586.

Torgler, B., & Valev, N. (2016). Women and Illegal Activities: Gender Differences and Women's Willingness to Comply Over Time. *SSRN Electronic Journal*. http://dx.doi.org/10.2139/ssrn.

Urias, D. (2012). The immigration & education nexus (1st ed.). Rotterdam: Sense Publishers. Vandevivere,

E., Braet, C., Bosmans, G., Mueller, S., & De Raedt, R. (2014). Attachment and Children's Biased Attentional Processing: Evidence for the Exclusion of Attachment-Related Information. *Plos ONE*, *9*(7), e103476. doi: 10.1371/journal.pone.0103476

Viet Nguyen, C. (2016). Does parental migration really benefit left-behind girls? Comparative evidence from Ethiopia, India, Peru and Vietnam. *Social Science & Medicine*, 153, 230-239. Wise, P., & Blair, M. (2007). The UNICEF Report on Child Well-Being. Ambulatory Pediatrics, 7(4), 265-266.

Wickramage, K., Siriwardhana, C., Vidanapathirana, P., Weerawarna, S., Jayasekara, B., & Pannala, G. et al. (2015). Risk of mental health and nutritional problems for left-behind children of international labour migrants. *BMC Psychiatry*, *15*(1). doi: 10.1186/s12888-015-0412-2

Yeoh, B., & Lam, T. (2016). Immigration and Its (Dis) Contents. *American Behavioural Scientist*, *60*(5-6), 637-658.

Zhao, C., Wang, F., Li, L., Zhou, X., & Hesketh, T. (2017). Long-term impacts of parental migration on Chinese children's psychosocial well-being: mitigating and exacerbating factors. Social Psychiatry and Psychiatric Epidemiology, 52(6), 669-675.

Literature review of the most cited articles in selected 5 educational technology journals during 2013 to 2017 – Identifying the champions

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Abstract

The aim of the current review study was to examine the characteristics of the most cited articles, derived from five selected journals in the field of educational technology between 2013 to 2017. The research method of this study was the review of the most cited published articles. Total forty one (n=41) articles were reviewed first and later only seven most cited articles were selected for the father analysis. The results indicate that the most cited published article from the five selected per journal and the years between 2013 to 2017 was entitled "The gamifying learning experiences" (Citation count = 801 times). The results further highlight that three articles were derived from the journal of Computer and Education. The results also show that the five most cited articles were published in 2013 and other two articles were published in 2014 and 2015. A mixed methods approach, review of the empirical articles and quantitative approach were used as research methods in the most cited five selected journals. The results confirm that the journal of Computer and Education was found the most dominating in the field of educational technology research in all years. The results also show that the year 2013 was the most dominating years for the published articles reviewed in this study. The primary implication of findings will be beneficial for the novice researchers, Master Degree students and academicians to know the current issues of the educational technology and its future improvement. The limitation of this study is the issue of generalization because of the limited number of reviewed most cited published articles in the current study.

Keyword: *Characteristics, educational technology, most cited articles, computer and education.*

1. Introduction

Reviewing published most cited articles is one of the primary tasks for the novice researchers. The reviewer of this research study will be named as the current researcher in the following texts. The research findings of the reviewed articles can be not only recognized in the academic community but also be beneficial for applying tenure, promotion, grants and scholar awards by the publications to advance their professional careers. Similarly, education researchers often view the publications of research findings in academic journals as a significant work for their professional development (Tsai & Lydia Wen, 2005). More importantly, reviewing most cited published educational technology journals help the novice researchers to understand the required field in greater depth. Educators can be supported by the systematic analysis of the most cited published articles in academic journals to discover the current status and future trends of educational technology research (Lee, Wu & Tsai, 2009). Various methods have been used to review different empirical published most cited articles. Reviewing journal articles is also regarded a key effort to find the most debatable and emergent issue of educational technology research in

the current educational context. Review of journal articles is also connected for selecting a new research topic for further investigation.

In the current study, the aim of the analysis was to identify the most cited articles in educational technology between 2013 to 2017. The five selected journals were entitled "British Journal of Educational Technology (BJET), the Journal of Computer and Education (JCE), the Journal of Computer Assisted Learning (JCAL), the Journal of IEEE Transactions on Learning Technologies (IEEE TLT) and the Journal of Educational Technology Research and Development (JETRD). The method of reviewing the most cited published articles was content analysis method where selected most cited published articles were compared and summarized on the basis of the citation counts, published years, titles of the published articles and existing theories. The current era of education is connected with worldwide educational systems which demands for the holistic research in the educational technology to support the learners and teachers (Pathek & Chaudhay, 2012). Many changes have been globally taken place in the political, economic and demographical sectors which also demand the systematic research on the emergence of educational technologies in teaching and learning activities. Furthermore, the research on educational technology has covered, for example, the issues of social media, serious games, and adaptive software to improve the outcomes of education. Similarly, the emerging practices on openness and user modelling have to be focused in future research because global education has demanded the innovations and new practices in digital learning contexts which have been facing complexities and unavailable technological resources in teaching and learning activities (Pathek & Chaudhay, 2012). The roles of educational technology have been increasing day by day in the educational sector for the improvement of the students' achievements and educational quality. So, the review of most cited published articles is emerging to focus on the current demands of educational technology and its integration in educational institutions (Aksnes, 2003; Tondeur, van Braak, Siddiq & Scherer, 2016). The outcomes of education will be fruitful for all nations if computer and Technological tools are integrated in their educational system. More importantly, this is the era of Information and Communication Technology (ICT) where all official and none-official works, private and public activities have been made so convenient. So, current educational leaders and practitioners have to at least understand the importance of ICT for effective and efficient teaching and learning activities (Onifade, 2011; Picatoste, Pérez-Ortiz & Ruesga-Benito, 2018).

1.1 Importance of technology in classroom teaching and learning activities

The current era of education is more likely emerging to connect with educational technology research because teacher educators are still struggling with how to create positive, interactive, open learning environment in educational institutions. Creating a powerful learning experiences is one step ahead to transform teachers' efforts into classroom practice (Putnam & Borko, 2000). The roles of technology in education has been emerged since two decades ago to now because the use of education technology can identify the demands of students, enriches teachers how to apply technology in instructions and tracking the their performance (Onifade, 2011). Additionally, educational technology can enhance students' performance, keep students engage effectively in learning activities, improve students' performance and make student response to adapt the new learning environment (Spector, 2017). Van Thiel (2018) States that "Technology integration in schools involves implementation of computers for effective and efficient use in meaningful curriculum-driven ways that enhance student learning by allowing for flexibility, creativity and collaboration, while making real-world connections" (p.2). Educational technology is

important for teaching and learning activities because it integrates computer and teaching activities. It also enhances teachers' teaching skills and makes them easy to manage their classroom (Onifade, 2011). The use of technology in classroom teaching can support teachers for effective and efficient use of curriculum contents which can increase student achievements. The use of technology also enhances teachers' beliefs for external commands and opportunities and permits them to access for resources (Christensen et al., 2018). "Technology in education is an integral part of effective teaching and learning. It is crucial to prepare learning leaders who can guide and support innovative and effective technology enhanced learning in the classroom" (Christensen et al., 2018, p.458). Educational technology also supports students and teachers to be more innovatives to improve their performance, & how to get good results effectively and efficiently (Alexander, 2018).

Gupta (2015) states that; "The field of education has been affected by the penetrating influence of information and communication technology. Undoubtedly, ICT has impacted on the quality and quantity of teaching, learning, and research in traditional and distance education institutions" (p.316). It is noted that current educational systems and teaching and learning practices have been positively influenced for delivering actual chances for individualized instruction in classroom teaching by the educational technology through its dynamic, interactive, and engaging contents (Cuny, 2011). It also enhances the capability of accelerating, inspiring, and deepening skills; motivating and engaging students in teaching and learning activities. Technology is also useful tool to teachers for helping to relate school experiences to work practices; creating economic viability for tomorrow's workforces; underwriting to fundamental changes in school; strengthening teaching and providing opportunities for connection between the school and the society (Onifade, 2011).

1.2 Research Problems and Questions

The current chapter has focused on the main research questions of the current study where one main research question and 3 sub-questions were designed to facilitate the analysis section. The primary research questions are rooted in the differences of citation counts; published years of journal and the differences of the contents. The firstly, forty-one highly cited articles were selected & secondly, only seven articles were selected. The next issue of the research question is deeply rooted in the variations of per five selection journals and the published papers based on their characteristics. The primary research question is related to identifying and analyzing the most cited of the five selected journals in the field of educational technology during the year 2013 to 2017. The primary research question has been divided into three sub-questions.

1. What are the characteristics/differences between the most cited published articles per five selected journals?
2. What are the characteristics differences between the most cited published articles per year among the five selected journals between 2013 to 2017?
3. What are the differences between the most cited published articles per five selected journals and per year among the seven selected journals between 2013 to 2017?

At first, the most cited five journal articles were derived from Publish and Perish Tool. The first journal BJET was the main source of academic journal articles for researchers and academicians in the arena of digital educational and training technology throughout the universe. The publications of BJET are deeply

rooted in theoretical outlooks, methodological developments and high quality observed studies that signify whether and how applications of educational systems, tools, and resources guide to developments in both formal and informal education at all sectors (Dalby & Swan, 2018). The second journal was JCE that is helpful to increase knowledge and understanding of different ways by using computer technologies in teaching and learning activities. More importantly, the journal of JCE was also the main source of educational technology research. Additionally, it primarily focuses on digital technology in order to enhance educational practices through the publication of high quality research materials which eventually increases the level of the theory and practice of education. It is significantly noted that JCE has highly demanded articles because it has revolutionary increased the importance of research on Computer and Education all over the world (Robins, 2015).

The third journal was JCAL which is connected for using of computers to support the education of people, to describe the application of computers and also includes the instructions for computer-based learning activities. Moreover, the meaning of JCAL is defined as an interactive instructional technique where a computer can remarkably present the instructional materials for teaching and learning activities (Arteaga Sánchez, Cortijo & Javed, 2014: De Witte, Haelermans & Rogge, 2014).

The fourth journal was IEEE TLT which is connected for using technology in teaching and learning activities to improve the outcomes of education. In more details, learning technologies have been deeply rooted in computer-based learning method which is supported by the application of technology for the improvement of teaching methods (Buckley & Doyle, 2017). Furthermore, computer-based learning is directly linked in using the multimedia materials and also using of different networks and communication systems to assist learning activities (Innovation in Technologies for Educational Computing, 2016). The words equality**,** future**,** mobile**,** motivation**,** social**,** updates**,** assessments**,** global**,** and convenience have been used for the importance of learning technologies in educational sectors. The fifth journal was the JETRD. The meaning of educational technology research and development is understood by a single scholarly journal focusing entirely on research and development in educational technology. The next origin of education technology has been anticipated among working professionals, for example, technology coordinators, instructional designers, school library media specialists, training directors, and technology teachers (Januszewski,2001).

2. Research Method

The purpose of the current study is to compare and contrast the seven most cited published articles among the forty-one highly cited articles per five selected journals and per year among the five selected journals (See in Appendix 1). The current research method has mainly focused on the topics of per five selected journals and per year among the five selected journals of the forty-one published papers between 2013 to 2017 in the current study. The main research method is embedded in the content analysis of the seven most cited published papers. The seven most cited articles among 41 articles are presented in pie-chart mentioning their citation counts, published year of the articles and the percentage of each article in the given pie-chart. Furthermore, forty-one articles are also mentioned in the Table 1 to make analysis section clear. Chapter two introduces the research design of the current study where the content analysis focuses on analyzing the data. It also explores the methods of data analysis and key contents for the further analysis.

The research design also focuses on different issues of data analysis. Chapter three introduces the results of the current study and further identifies and analyzes the key characteristics of the highly cited articles

based on per five selected journals and per year among the five selected journals. The results section further explores the details analysis of 7 highly cited articles based on the publication years, citation counts and the percentage covered by each article in each Pie-chart. The fourth part of the current dissertation introduces the summary and conclusion of the whole part of this study which also compares, contrasts and synthesizes the key findings of the results section. The purpose of the current research design was to analyze the most cited seven articles per five selected journals and per year among the five selected journals between 2013 to 2017. The contents for the analysis are years of publication and citation counts of the most cited seven published articles among forty one published papers. First of all, five journals entitled the CE, CAL, BJET, IEEE TLT and JETRD were selected. The number of citation counts might be more in the forthcoming day, but the current researcher does not consider the citation counts after 20th May 2018. In the current study, the research topics of each published article have been embedded in different subjects and different areas of the educational and technology research (see in the Appendix 1 and 2). Twenty-five most cited published papers were derived from per five selected journals. Similarly, another twenty-five most cited published papers per year among five selected journals between 2013 to 2017 were selected. The selected articles mentioned in the Table 1 and 2 are embedded in the total citation counts of each published article, published years and the name of five selected journals. There are five rows and five columns in the Table 1 and 2 where forty-one published articles are mentioned as well. Only the fortyone published articles are mentioned in the Table 1 and 2.

3. Results

3.1 Analysis of Seven the Most Cited Articles among Horty one highly Cited articles

The seven the most cited articles among the forty-one the most cited published articles according to per five selected journals and per year five selected journals were selected for the further analysis but other most cited articles were excluded in the analysis The analysis has mainly focused on the citation counts, published years and the five selected journals among fourty one most cited published articles.

Detailed analysis of the seven most cited published articles per journal and per year

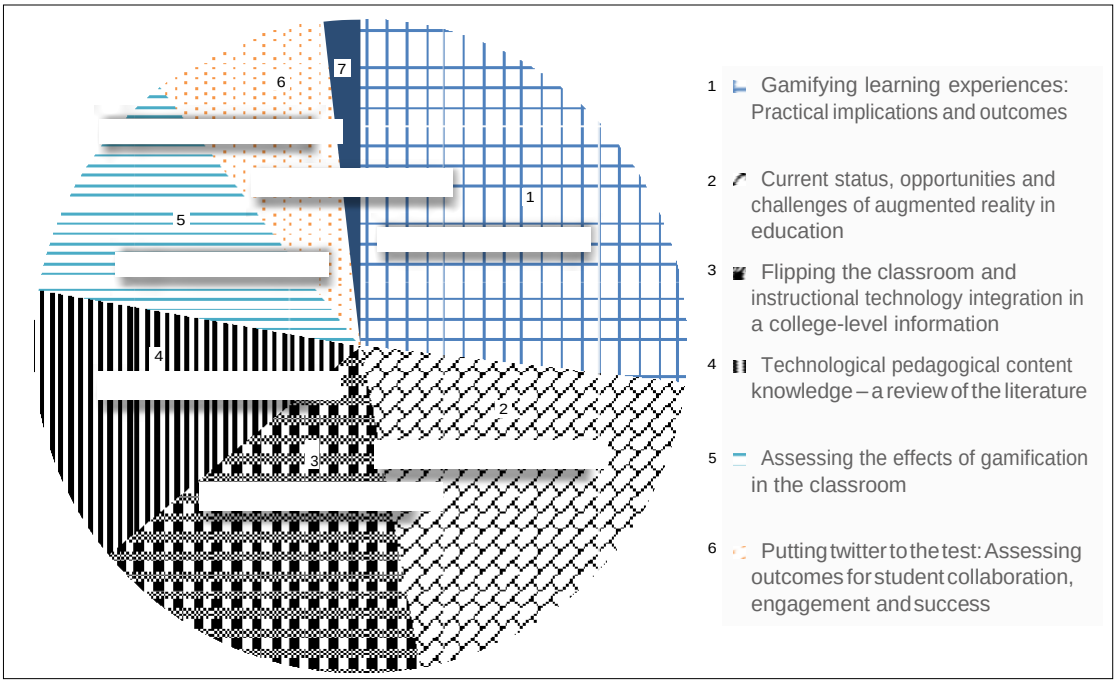

Figure 1. Seven most cited published articles among five selected journals

The Pie Chart in the Figure 1 has presented the number of citation counts, percentage covered by each article and title of each most cited article. The first most cited article was derived from JCE which was "Gamifying learning experience: Practical implications and outcomes" published in 2013 cited 801 times (27%). The second most cited published article was derived from JCE which was entitled "Current status, opportunities and challenges of augmented reality in education" published in 2013 cited by 606 times (20%). The third most cited article was derived from JETRD which was "Flipping the classroom and instructional technology integration in a college-level information system spreadsheet course" published in 2013 cited by 506 times and has covered 17%. (Davies, Dean & Ball, 2013). The fourth most cited article was derived from JCAL which was "Technological pedagogical content knowledge (TPACK)" and published in 2013, published in 2015 cited by 410 times (14%). The fifth most cited article was derived from JCE which was "Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance" published in 2014 which was cited 352 times (12%).

The sixth most cited article was derived from BJET which was "Putting twitter to the test: Assessing outcomes for student collaboration, engagement and success" published in 2013 which was cited 259 times (8%) (Junco, Elavsky & Heiberger, 2013). The seventh most cited article was entitled "Delving into Participants' Profiles and Use of Social Tools in MOOCs" which was derived from IEEE TLT, published in 2013 cited 54 times (2%). The research theme of the seven most cited articles was the massive open online courses and educational technology. The article had cover the participants' profiles on MOOCs, social tools on MOOCs and digital education of the future. Here, the observations of the current researcher also conclude that JCE has been seen as demonizing journal according to per selected journals and per year among the five selected journals. It was also noted that different types of research methods were used in the most cited seven articles, for example, a mixed methods design, review method, longitudinal survey method, the cross sectional survey method, qualitative interview method, and quantitative method. The results further indicate that a reviewed method was used in many of the reviewed articles and research objects mentioned in the most cited articles had given the same message that ICT has to be interconnected in teaching and learning activities in our classroom for the quality education. Meanwhile reviewed method was the first and the mixed method was seemed the next second dominating research approach among the seven most cited published articles. In all seven most cited articles, different research approaches, for example, quantitative method, a mixed methods research, review method and the qualitative research method. Similarly, different research instruments were used in the seven most cited articles, for example, the survey questionnaire, the qualitative interview question and focus group discussion. There were many similarities and contrasts among the seven most cited articles, for example, the research method and research instrument and key words used in the articles (Creswell, 2017).

The review of seven most cited articles according to per five selected journals and per year among the five selected journals between 2013 to 2017 has highlighted the key results in the field of educational technology research. The current study has supported the empirical studies of Abramovich, Schunn and Higashi (2013) because the study of Abramovich et al. (2013) had also concluded that the articles published in the former years had greater number of citation counts than articles published in the later

years as the current study concluded. The current study has also identified that the current trends in education technology is highly connected with the computer and education in teaching activities because most of the published most cited published articles were derived from the journal of Computer and Education (n=21). The result importantly conclude that the key words used in different articles were varied in seven published articles, but the mostly repeated keywords from seven published articles were identified as learning, technology, collaboration, game, mobile and education. Furthermore, the current study signifies that the trends of current educational technology research has focused on computer and education technology research. Finally, the current study also confirmed that most of the repeated published articles were also derived from the JCE (Sun & Shen, 2014).

The current researcher had faced many difficulties during this study, for example, finding the most cited articles because there was variation in the citation counts among different online sources. Some online sites showed greater number of citation counts and some online resources showed lesser number of citation counts. The next limitation of the current study is the analysis of the limited number of most cited articles because the current study had reviewed only seven most cited articles. So, the findings cannot be generalized for the larger sample size in the similar context. The next limitation of the this study was the limited analysis of characteristics of the only seven most cited articles because the current study has analyzed articles based on per year among the five selected journals and per five selected journals. The current researcher has also realized that the findings would be more valid and reliable if the greater number of the most cited articles had been selected and added in the analysis section. Again, it was further noticed that reviewing most cited articles can give more depth knowledge to select future research topics and also helpful to know the current trends of educational technology research. The most crucial findings for the current researcher was embedded in knowing the emerging issues of educational technology to integrate in teaching and learning activities for improving the quality of education and students' performance (Margaryan, Bianco & Littlejohn, 2015). It is obvious that the educational technology research of JCE is emerging in educational institutions so the researchers have to focus on reviewing the most cited articles on the journal of JCE.

Recommendations

The future research has also to focus on reviewing the most cited articles of longitudinal studies which would give more citation counts and reflect more advanced knowledge of educational technology for the novice researchers. This study recommends that the future researchers need to focus on reviewing the greater number of the most cited journals of CE separately to foreground the specific knowledge of educational technology to enhance educational quality by which an innovative and contemporary knowledge of educational technology and computer education can be generated for future generation. If the future research focuses on reviewing the most cited articles of per selected five journals, it would be more beneficial for practitioners, school leaders and the different levels teachers to gain more knowledge how to intergrade computer technology into classroom teaching. More importantly, the future research needs to focus on reviewing the articles of the former years which would give more citation counts and deep knowledge for conducting the future primary research. This study also recommends that the future research also has to select the most cited published articles of per five selected journals and needs

to review them separately so that it can help the future researchers to know the special issues of each journal and to conduct primary research on different issues, for example, BJET, CE, JCAL, IEEE TLT, JETRD. It is also recommended that the future research has to focus on different characteristics (for example, strengths and weakness, contents, abstracts, citation counts, published years). Finally, in order to generalize the results obtained in this study, similar analysis of the most cited articles per five journals and per year among the five selected journals should be made on reviewing most cited published articles between 2013 to 2017.

References

Abramovich, S., Schunn, C. and Higashi, R. (2013). Are badges useful in education? It depends upon the type of badge and expertise of learner. *Educational Technology Research and Development*, 61(2), 217-232.

Aksnes, D. (2003). Characteristics of most cited articles. *Research Evaluation*, *12*(3), 159-170.

Arteaga Sánchez, R., Cortijo, V. and Javed, U. (2014). Students' perceptions of Facebook for academic purposes. *Computers & Education*, 70, pp.138-149.

Buckley, P. and Doyle, E. (2017). Individualising gamification: An investigation of the impact of learning styles and personality traits on the efficacy of gamification using a prediction market. *Computers & Education*, 106(1), 43-55.

Creswell, J. (2017). *Designing & Conducting Mixed Methods Research + The Mixed Methods Reader*. [S.L.]: Sage Publications.

Dalby, D., & Swan, M. (2018). Using digital technology to enhance formative assessment in mathematics classrooms. *British Journal of Educational Technology*. doi: 10.1111/bjet.12606Daldrup-

Davies, R., Dean, D. and Ball, N. (2013). Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course. *Educational Technology Research and Development*, 61(4), pp.563-580.

De Witte, K., Haelermans, C., & Rogge, N. (2014). The effectiveness of a computer-assisted math learning program. *Journal of Computer Assisted Learning*, *31*(4), 314-329.

Innovation in technologies for educational computing. (2016). *IEEE Transactions on Learning Technologies*, *9*(1), 96-96.

Januszewski, A. (2001). *Educational technology*. Englewood, Colo.: Libraries Unlimited.

Lee, M., Wu, Y., & Tsai, C. (2009). Research Trends in Science Education from 2003 to 2007: A content analysis of publications in selected journals. *International Journal of Science Education*, *31*(15), 1999-2020.

Margaryan, A., Bianco, M. and Littlejohn, A. (2015). Instructional quality of Massive Open Online Courses (MOOCs). *Computers & Education*, 80, pp.77-83.

Onifade, A. (2011). The third millennium secretary and information & communication technology: Nigerian experience. *International Journal of Management & Information Systems (IJMIS)*, *13*(2), 39.

Pathek, R., & Chaudhay, J. (2012). *Educational technology*. New Delhi: Dorling Kindersley.

Picatoste, J., Pérez-Ortiz, L., & Ruesga-Benito, S. (2018). A new educational pattern in response to new technologies and sustainable development. Enlightening ICT skills for youth employability in the European Union. *Telematics and Informatics*, *35*(4), 1031-1038.

Robins, A. (2015). The ongoing challenges of computer science education research. *Computer Science Education*, *25*(2), 115-119.

Sun, G. and Shen, J. (2014). Facilitating social collaboration in mobile cloud-based learning: A teamwork as a service (TaaS) approach. *IEEE Transactions on Learning Technologies*, 7(3), pp.207-220.

Sung, H. and Hwang, G. (2013). A collaborative game-based learning approach to improving students' learning performance in science courses. *Computers & Education*, 63, pp.43-51.

Tsai, C., & Lydia Wen, M. (2005). Research and trends in science education from 1998 to 2002: a content analysis of publication in selected journals. *International Journal of Science Education*, *27*(1), 3-14.

Tondeur, J., van Braak, J., Siddiq, F., & Scherer, R. (2016). Time for a new approach to prepare future teachers for educational technology use: Its meaning and measurement. *Computers & Education*, *94*, 134-150.

Topîrceanu, A. (2017). Gamified learning: A role-playing approach to increase student in-class motivation. *Procedia Computer Science*, 112, pp.41-50.

Appendix 1

Table 1. Five most cited articles per journal based on Journal (Using Publish and Perish Tool)

British Journal of Educational Technology	Computer and Education	Journal of Computer Assisted Learning	IEEE transactions on learning technologies	Journal of educational technology research and development
1.Putting twitter to the test: Assessing outcomes for student collaboration, engagement and success-259 times (2013)	1. Gamifying learning experiences: Practical implications and outcomes-801 times (2013).	1.Technological pedagogical content knowledge - A review of the literature 410 times (2013).	1. Developing into participants' profiles and use of social tools in MOOCs 54 times (2014)	1. Flipping the classroom and instructional technology integration in a college-level information system spreadsheet course-506 times (2013).
2.Mapping learning and game mechanics for serious games analysis-211 times (2015)	2.Current status, opportunities and challenges of augmented reality in education 606 times (2013).	2. Is it a tool suitable for learning? A critical review of the literature on Facebook as a technology-enhanced learning environment 263 times (2013).	2. Metafora: A web-based platform for learning to learn together in science and mathematics 52 times (2013)	2. Are badges useful in education? It depends upon the type of badge and expertise of learner-239 times (2013).
3. Critical success factors for transforming pedagogy with mobile Web 2.0 154 times (2015)	3. Assessing the effects of gamification in the classroom: -352 times (2015)	3. Challenges to learning and schooling in the digital networked world of the 21st century 191 times (2013)	3. Providing collaborative support to virtual and remote laboratories 47 times (2013)	3. Instructor experiences with a social networking site in a higher education setting: expectations, frustrations, appropriation, and compartmentalization 97 times (2013).

4.Ethical and privacy principles for learning analytics-121 times (2014)	4. Here and now mobile learning: An experimental study on the use of mobile technology-329 times (2013).	4. A mixed methods assessment of students' flow experiences during a mobile augmented reality science game-126 times (2013).	4. GreedEx: A visualization tool for experimentation and discovery learning of greedy algorithms 39 times (2013)	4. Enhancing socially shared regulation in collaborative learning groups: designing for CSCL regulation tools-89 times (2015).
5.The research and evaluation of serious games: Toward a comprehensive methodology-119 times (2014)	5.Instructional quality of Massive Open Online Courses (MOOCs) 300 times (2015)	5. Blending student technology experiences in formal and informal learning 108 times(2013)	5. Facilitating social collaboration in mobile cloud-based learning: A teamwork as a service (TaaS) approach 25 times (2014)	5. Improving learning achievements, motivations and problem-solving skills through a peer assessment-based game development approach 78 times (2014).

Table 2. Five highly cited articles per journal based on published year 2013-2017 (Using Publish and Perish Tool).

2013	2014	2015	2016	2017
1. Gamifying learning experiences: Practical implications and outcomes, 801 times Computers & Education	1. Effectiveness of virtual reality-based instruction on students' learning outcomes in K-12 and higher education: A meta-analysis 273 times Computers & Education	1. Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance 352 times Computers & Education	1. The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis 167 times Computers & Education	1. Self-regulated learning strategies predict learner behavior and goal attainment in Massive Open Online Courses 45 times Computers & Education
2. Current status, opportunities and challenges of augmented reality in education, 606 times Computers & Education	2. It's not about seat time: Blending, flipping, and efficiency in active learning classrooms 252 times Computers & Education	2.Instructional quality of Massive Open Online Courses (MOOCs) 300 times Computers & Education	2. An update to the systematic literature review of empirical evidence of the impacts and outcomes of computer games and serious games 148 times Computers & Education	2. Some guidance on conducting and reporting qualitative studies 28 times Computers & Education
3. Flipping the classroom and instructional technology integration in a college-level information systems spreadsheet course, 506 times Educational Technology Research and Development	3. Students' perceptions of Facebook for academic purposes 231 times Computers and Education	3. Mapping learning and game mechanics for serious games analysis-211 times British Journal of Educational Technology	3. Mobile apps for science learning: Review of research 80 times Computers & Education	3. Perceiving learning at a glance: A systematic literature review of learning dashboard research 25 times IEEE Transactions on Learning Technologies

4.Technological pedagogical content knowledge - A review of the literature 410 times Journal of Computer Assisted Learning	4. Is FLIP enough? Or should we use the FLIPPED model instead? 203 times Computers and Education	4. Understanding the MOOCs continuance: The role of openness and reputation 156 times Computers & Education	4. Virtual laboratories for education in science, technology, and engineering: A review 77 times Computers & Education	4. Individualising gamification: An investigation of the impact of learning styles and personality traits on the efficacy of gamification using a prediction market 15 times Computers & Education
5. Here and now mobile learning: An experimental study on the use of mobile technology 329 times Computers & Education	5. Experimenting with electromagnetism using augmented reality: Impact on flow student experience and educational effectiveness 159 times Computers and Education	5. Critical success factors for transforming pedagogy with mobile Web 2.0 154 times British Journal of Educational Technology	5. Facebook and the others. Potentials and obstacles of Social Media for teaching in higher education 74 times Computers & Education	5. Studies of student engagement in gamified online discussions 10 times Computers & Education

A Review of Literature on MBA-Expectations and Reality

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Abstract

The objective of this this review was to understand the existing knowledge on the current program of Master of Business Administration (MBA) in the global context. The next objective was to find out the knowledge gap between the existing knowledge and skills delived by the MBA program and the required skills demanding by the global industries and companies. The research method of this study was based on reviewing method. The reviewed journal articles were entitled *"the Journal of Higher Education Policy and Management, Academy of Management Learning & Education, Journal of Applied Psychology, Journal of Leadership Education, Academy of Management Review, Journal of Business Ethics, Journal of Management Development, Consulting Psychology Journal: Practice and Research, Innovative Marketing, Women in Management Review, Journal of Public Policy & Marketing, Nursing Management (Springhouse) and Human Resource Development Review"* The results highlighted that more than ten (n=20) articles were reviewed to understand the knowledge gap between the delivered skills by the current MBA and require managerial skills demanding by the global industries and companies. The reviewed results highlighted that MBA programs need to set of pedagogical practices to teach leadership in a global context that value awareness, reflection and development of the leadership skills. The results also indicate that many graduate students from reputed business schools were unable to shows integrative thinking as compare to undergraduates from other domains. The results also confirmed that most of the business courses and schools were being criticized to make money for the University and their professors and there was a little relevance of the output on career development and managerial practices. The results also highlighted that students were not aware of what they needed to do after complication of the MBA Degree and they lack of technical and human skills which made them confused toward their conceptual skills to use at appropriate time during their professional work. In addition, the results also show that the scholars were not happy with the pedagogy of delivering the MBA degree skills. The implication of this study will be useful to academicians and MBA course designers to reform the existing courses to meet the current global demand of leader's skills to employ at global companies and industries in future. The limitation of this study was the reviewed of the imitated number of journal articles which does not guarantee for the generalization of the findings in the similar context in future. It is recommended that the future research needs to focus to review the most cited published journal articles to deepen the knowledge gap between the existing managerial skills delivered by the MBA program and the required skills demanding by the global companies and industries.

Keywords: *Master of business Administration, review, knowledge gap, MBA course, global required leadership skills.*

1. Introduction

Master of Business Administration (MBA) is one of the most popular subjects in the field of business and management. Moreover, students of other disciplines, e.g., Engineering, Medical Science, Technology are also showing their interest to get the fusion degree. Additionally, many universities are introducing the dual degree combing MBA and other disciplines. In addition, (Dubas, 2017) found that MBA program plays a vital role to minimize the gap between the companies' expectations and managerial skills delivered to the

graduate students. The primary propose of this reviewed journal article was to identify the gap between the expectation of companies and the teaching learning processes implemented by the business schools. This review is embedded in examining the following questions a) What expectation do companies are looking for through MBA graduates? b) What are the thoughts of scholars about the MBA program organizers c) What are the best approaches for business school to meet the current global expectations of companies and students. This review was based on the theoretical arguments of the previous studies. This review articles were organized on major four parts i.e. introduction, review of literature, methodology and theoretical answer of the research questions, discussion and conclusions. The reasons for undertaking this study toward an MBA are widely documented in the following section. A recent survey showed that self-improvement, career development, enhancing business skills, having a positive impact on society are the most important to MBAs immediately after they receive their degrees. Other reasons such as networking opportunities, experiencing a foreign culture (for overseas students) and increased professional and personal effectiveness are also proposed (Blackburn, 2011). Students in the MBA program are usually entered in their late twenties with experience across small, medium and large organizations, and come from diverse professional backgrounds, e.g. Engineering, Automotive, Law, Marketing, Banking, Defense and Tourism Management, Consulting, Entrepreneurship (The Aspen Institute, 2008). Many national and international universities have invested a large amount of public funds but the rate of the students moving to other international markets rather than the home countries has been increased steadily and created a great problem. It is universally identified that the curriculum contents and practical skills required to MBA program have to be modified and improved. It is expected that future managers and company leaders have to able to scan both internal and external company's environment to achieve their pre-determined objectives (Lawrence, Dunn & Weisfeld-Spolter, 2018).

2. Literature Review

2.1 MBA Expectations and reality

In today's globalized world, most of the business schools are desperate to get the business leader, who can be able to achieve the competitive advantage in this competetive global markets. And, the primary source of it seems to be the business schools. However, companies have a greater dissatisfaction toward the graduate students of business and management, programs like MBAs and EMBA. Current executive programs are also fail fulfill the demand of companies. Soft skills are the most important for the business leaders, but MBA Program also need to focus on functional and technical skills. In addition, the common requirements of MBA programs are embedded in thoughtful, awareness, sensitive, flexible and adaptive capability of readiness to be a global executive. But the bigger questions have been raised for business school's capability to develop every dimensions of leadership skills. Because some abilities like communication ability, leadership interpersonal skills, and wisdom skill alongwith "the ability to weave together and make use of different kinds of knowledge" (Mintzberge & Gosling, 2002:28). But these skills are at once less easily transferred to others and these skills are highly valued in the competition for leadership positions that occur in organizations. In result of these coherence gaps between the skills needed in business and taught program and companies look for alternative source. Here are few examples to support it, "Boston Consulting Group hired 20% of its consultants without MBAs in 2000"; "Hamilton planned to hire one third of its people without graduate business degrees" and "more than half of the consultants at McKinsey and Company do not have a Master of Business Administration degree"

(Leonhardt, 2000:1) "*Not only that, many graduate students from reputed business schools are unable to shows integrative thinking as compared to undergraduates from other domains"* (Petriglieri, Wood, & Petriglieri, 2011, P.17). Many companies introduced the 3-weeks basic business training programs for new hire. The research study of Shepherd, Douglas & Fitzsimmons (2008) believe that (70 – 90) percent of work place learning occurs through on-the-job experience, informal training, coaching and mentoring. Now, the biggest questions arise for business school is "Can they fulfill the expectations of the current global companies"? Business schools have to prove the answer not only for company but also need to assure the students to gain the career success and professional achievement, such as handsome salary and higher position. However, many business schools had been facing the numbers of obstacles like cost, faculty and staff, status-based system and status quo. Leavitt &m Leavitt (2012) argue that "business schools have been designed without practical fields". Moreover, the curriculum of MBA and E-MBA have not supported for succeeding in business outcomes because it is focused on the functions of business not in practical skills of managing business institutions (Mintzberg & Gosling, 2002). Due to the impractical culture, there is little evidence to provide learning required skills. Even, the assumptions of learning are also incorrect and focused on external incentive such as grading impeded rather than enhance learning outcomes and managerial skills (Steiner & Watson, 2006). Another issue faced by the business schools is the method of instructions for example case method, combination of the practical knowledge to professional skills but few examples are established business schools are there much clinical training or learning by doing-experiential learning where "concrete experience is the basis for observation and reflection" (Твердола & Tverdola, 2018. p.22). Likewise, the selection criteria, GMAT is also negatively perceived by the students and it is believed that managerial success depends on the mind-set of the students to be successful entrepreneurial rather than a qualified manager (Mintzberg and Gosling, 2002).

Most of the courses of business schools are being criticized to make money for the University and their professors and there is little relevance of the output on career development and managerial practices. Most of the Universities perceive MBA program as "Cash cow". The most common perspective and approach to business school education is supposed to address the issue of relevance most of the common practices of MBA program are shared for experienced students, multidisciplinary program, how people think about business issues, application of learning in groups and individual's current job and company. Business schools need to think differently to get the success in the competative business world in future. It is important to convert the valuable practices into culture that helps to institutionalize it our practices. These practices are embedded in the quality enhancement, attraction of high performer faculty and staff, research practices, systematic assessments of the products and evaluation of competitive global environment (Waddock & Lozano, 2013).

2.2 Challenges to Develop the Business Leader

Developing business leaders is not a simple task. It is a human development process which is incomparable with the product development or other tasks. On the other hand, the current market is more dynamic and competitive. In this situation most of the business schools are struggling to cope with the challenges to develop global leaders. The initial challenge of developing business leader starts with the assumption about learning practices and it raise the few questions like 'how our receptions are perceiving the learning process?' 'Does it fulfill the actual meaning of teaching and learning outcomes?' 'Does it really meet requirement of the external incentive likes grading and motivation?' (Blackburn, 2011). It is not easy to

answer the questions mentioned above because these questions are embedded in our perception, belief and social thought. The second most important issue is about the pedagogy. The biggest question that come up with the pedagogy is what type of pedagogy is perfect to solve the contemporary problem. Likewise, instruction also plays a vital role for leadership development. But the questions aroused? Does the methods like, case study, presentation, group discussion, reading article, doing assignments and lecturers are sufficient for the leadership development ? If not, what could be the best way of instruction for developing business leaders and what about the practical skills for them?

The previous study of Brett and Atwater (2001) argue that the selection of instrument and tools should create the ownership by students. It could be done by supportive organizational structure and engagement of faculty, importance of protégé beliefs and performance as a leader, mentoring, self-reflection, absorb negative feedback, truly capable of leadership, emotional and frequently involvements in practices. Further, Klimoski and Amos (2012) highlighted that it should focus on clear program goals, responsibility for direction an articulated pedagogical framework, MBA programs, student ownership, and greater reliance on experience and the use of assessments in order to provide evidence of impact. The other challenge that needs to face by the development program is the number of available faculty members, their nature and duration and sequencing of learning activities with functional subjects and specializations. (Lawrence Dunn & Weisfeld-Spolter, 2018). Similarly, most business school's faculties were not properly trained in pedagogy and curriculum design, and they may not be able to face the challenge of teaching leadership with the most appropriate research findings in mind (Klimoski & Amos, 2012). Some of the business schools are facing the financial crisis and they are adopting the cost minimization strategy like increasing the size of sections, increasing the average class size and reduce the number of smaller classes or at a minimum to hold class sizes constant. But the question arises here. Does this strategy help us to achieve our aim? Or Are the business schools really doing a business? Another challenge faced by business schools is status-based system, it is scarcely in the interests of those schools winning the competitive war for status to change the rules of the game that have put them on top. "As with any status-based system, it is scarcely in the interests of those schools winning the competitive war for status to change the rules of the game that have put them on top". And finally, the status quo is maintained by the taken-for-granted aspect of so much of business education, the fact that what we do and how we do it has become truly institutionalized (Blackburn, 2011).

Developing female business leader is another challenge for most of the business schools. The number of female students is not only low in the classroom, they are also low in the business and employment sector specially managers and executive directors (Marlow & Carter, 2004; Reed, 1992). In some societies there is clear separation of profession by gender for example in Nepal 'Male students are not allowed to enroll in Nursing and air hostage course, whereas Scandinavian countries give women greater opportunities to fill top executive positions. However, in the arena of world business, the number of female graduates is around thirty percent (30%), which seems as a hitting the 'glass ceiling' (DeRue & Ashford, 2010; Datar, Garvin & Cullen, 2014) in today's scenario, many business schools are trying to increase the number of female students to fulfill the demand of companies for the female talent, build their pipeline of female leaders, and compensate the gender imbalance that exists in top levels of management (Dragoni, Tesluk, Russell & Oh, 2009). Some of the top business schools have introduced the fellowships and scholarship to attract and encourage female leaders and to create awareness of career potential in business. Moreover, partnership between business schools and external organizations also provide a platform like focused

events and activities, including conferences and recruitment opportunities (Anderson, 2006).

2.3 Contemporary Approach to Fulfill the Expectations & Cope the Challenges

The business environment is being more complex day by day, which is demanding more talented, innovative and dynamic leaders. Leadership development is a stage of enhancement in the life cycle which helps, encourages and supports the expansion of knowledge and expertise required to optimize one's leadership competencies & performance (Dator, Gravin, & Cullen, 2014). It is complex and multidimensional field that continues to evolve time and again (Montgomery, 2005). On the other hand, business schools are criticized to not teach the right contents, whether that is ethical management, decision making or a greater emphasis on input of globalization (Bazerman & Moore, 2009; Collinson, 2014). Furthermore, MBA program has not been given enough effort to training for leadership development skills (Mintzberg & Gosling, 2002; Pfeffer & Fong, 2002). MBA programs have to set of pedagogical practices to enhance leadership skills in a context that value for the awareness, reflection and development (Roseser & Peck, 2009; Waddock, &Lozano, 2013).

The contemporary approach of leadership (new pedagogy) development focuses on the opportunities to learn about the experience, motives, values aspiration and their interaction with the people around them that influence how they are and how they lead the business organizations (Pfeffer & Sutton, 2006).; Lawrence et al., 2018). Furthermore, it should be based on values awareness, reflection and development designed to foster personal and professional growth (Lawrence, Dunn & Weisfeld-Spolter, 2018; Roeser & Peck, 2009). In addition, the published articles were failed to link between theory and practices because book learning and skills building are also essentials to develop the dynamic leaders which is not found in the reviewed articles (Benjamin & O Reilly, 2011; Peffer & Sutton, 1999). The learning material (pedagogy) should focus on pedagogy which could build ability to interact with other leaders, followers and organizational actors, who exist from dynamic environment (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Collinson, 2014). It is a transformational experience where they should gain self-insight and self-knowledge, desire and motivation to be a great leader. They must feel confident and being a great leader, self-efficiency in acting like a leader, think like a leader, mastering critical task and to cope with stress and emotions (Klimoski & Amos, 2012). The recent evidence of business leadership development programs is located on self-awareness, iterative learning and reflection, and leadership coaching for development utilizing an assessment of leadership potential with established reliable and valid measure (Lawrence et al., 2018) but current MBA programs were failed todeliver the practical skills for professional leaders.

It is important to select the good instruments and tools to develop the leader who can help themselves and others. Good instruments present the seven scale tools i.e. drives, experiences, awareness, learning ability, leadership traits, capability and derailment risks (Gapper, 2005) which will help to be an accountable, handle the complexity and be able to create the scope (Hooijberg & Lane, 2009). With the support of these instruments, it was also thought that other tools are also valuable to develop the competent leader like, multisource 360 feedback system (Breft & Atwater, 2001; Hooijberg V lane, 2009), Service learning (Steiner & Watson, 2006), Personality assessment (Brungardt, 1997 & Carvan, 2015); Clinical counseling (Chermack & Passmore, 2005) which are the common tools preferred by the universities. On the other hand, the question has raised to know the capability to lead in this complex environment. The review articles have presented the norms to compare the competency with successful global leader at each level from individual to CEO to identify the strength and weakness or knowing oneself which means, examine the ability to

convert classroom practice into professional life (Lester, Hannah, Harms, Vogelgesang & Avolio, 2011). Similarly, introducing one to one partnership under coaching of trained and certified mentors are valuable for leadership development (Hooijberg & Lane, 2009).

3. Methodology

The research methodology of this paper was review of previous articles based on theoretical review of the selected ten (n = 10) published articles which helps to identify new knowledge about an emerging topic of MBA programs (Torraco, 2005). The review method study has followed the study of Chermack and Passmore (2005) which argue that the review approach is a key research method for summarizing the current body of literature pertinent to MBA programs and leadership skills. This approach helps this researcher to provide the framework of the research method. Throughout the examination of the different articles based on MBA programs and leadership skills in different journal (Academy Of Management Learning & Education, the Journal of Leadership Education, the Journal of Higher Education Policy And Management, the Journal of Marketing Education Review, Harvard Business Review Press, Journal of Business Ethics), finally 20 articles have been chosen from the five different management journals from 2002 to 2018. The reviewed journal articles have highlighted the key knowledge on MBA program and its delivered skills. The model summary tables include the name of the sample article, the name of journal, key finding, published years and key words (Ibeh, Carter, Poff, & Hamill, 2008).

4. Findings & Discussion

4.1 Summary and the Conclusions

The review results show that MBA programs have to set pedagogical practices to teach leadership in a context that value awareness, reflection and development. The results also indicate that many graduate students from reputed business schools are unable to show integrative thinking as compared to undergraduates from other domains. It also confirms that most of the business courses and schools were being criticized only to make money for the University and their professors and there was little relevance of the output on career development and managerial practices. The review results also note that the selection of the good instruments and tools are essential for the development of a leader who can help themselves and others. It is further summarized that drives, experiences, awareness, learning ability, leadership traits, capability and derailment risks were the seven scale instruments for the leadership development. This reviews also that shows that Business Schools have to work to fulfill the expectation of the global companies and MBA students. The results also highlighted that students were not aware of what they needed to do after completion of the MBA Degree. Further, results show that MBA students were found of lacking technical and human skills which make them confused toward their conceptual skills to use at appropriate time. In addition, the results also indicate that the scholars were not happy with the pedagogy of delivering the MBA Degree skills. The results further noted that students of Business Schools perceived MBA programs for making money as a cash cow. It was also noted that the MBA Degree was developed for the development of leadership skills for business purposes which was possible through behavioral aspects, e.g. self-awareness, assessment, reflection and coaching. Similarly, the results indicate that the pedagogical development was essential for development of dynamic leaders to compete with this tough and competitive business environment. The results importantly disclosed that pedagogy, material, ability to coach, self-awareness, reflection ability and level of assessment were found to be the key indicators of developing a qualified leader. It was also highlighted that the institutional and individual

success of developing leadership skills primarily depends on determination of all stakeholders, clear vision of the program director and the devotion to prepare a dynamic MBA graduate leader. Additionally, the review results confirmed that most of the business schools were struggling to cope with the challenges to develop the professional business leader. The most common challenges of MBA programs were found as the assumption, pedagogy, instruction, instrument, manpower, cost, status-based system and status quo. Finally, the results importantly indicate that the business schools were criticized not to teach the right contents and global leadership skills.

4.2 Future Recommendations and Limitations

This study recommends that the future research has to focus on several limitations of MBA program on practical skills to develop a qualified leader. This study also recommends that future research has to focus on how to enhance the skills for development of dynamic leaders to compete with this tough and competitive business environment. It is also recommended that future research has to emphasise on how the graduate MBA students can ahieve necessary leadership skills and to able to show integrative thinking as compared to undergraduates from other domains. Future research has also to address on the necessary leadership skills via business courses to make money for the universities and to focus on the relevance of the outputs on career development and managerial practices. Future research is also sought for the balancing of practical and theoretical skills of MBA programs. This review is embedded in the selection of twenty articles which may create conflict conclusion because of missing some important contemporary data. There is no specific approach or guideline used for selection of the published articles. This review has provided the limited research gap between the MBA programs and current demand of global companies to fulfill the expectation of students and companies, universities or school of business need to do the further research in pedagogical development. Again future research is required for the new policy reform. Future research need to address the periodical examination on reforming the MBA program to find the specific expectation of the companyies (Hooijberg & Lane, 2009). This review has covered limited articles so that results cannot guarantee the reliability and validity of the findings. On the other hand, the review is based on the secondary data so that the current researcher cannot take the guarantee of the review data and findings.

References

Anderson, L. (2006). Building Confidence in Creativity: MBA Students. *Marketing Education Review, 16*(1), 91-96.

Bazerman, M.H., & Moore, D. A. (2009). *Improving decision making. In Judgment in managerial decision making* (7th ed.): 179-199. USA, Hoboken, NJ: John Wiley & Sons.

Benjamin, B. and O'Reilly, C. (2011). Becoming a Leader: Early Career Challenges Faced by MBA Graduates. *Academy of Management Learning & Education*, 10(3), 452-472.

Blackburn, G. (2011). Which Master of Business Administration (MBA)? Factors influencing prospective students' choice of MBA programme – an empirical study. *Journal of Higher Education Policy and Management, 33*(5), 473-483.

Brett, J. and Atwater, L. (2001). 360° feedback: Accuracy, reactions, and perceptions of usefulness. *Journal of Applied Psychology*, 86(5), 930-942.

Brungardt, C. (1997). The Making of Leaders: A Review of the Research in Leadership Development and Education. *Journal of Leadership Studies*, 3(3), pp.81-95.

Carvan, M. (2015). Leadership Education for the Volatile, Uncertain, Complex, and Ambiguous Now: A Challenge to the Field. *The Journal of Leadership Education*, 14(4), 3-10.

Chermack, T. J., & Passmore, D. L. (2005). Using journals and databases in research. In R. A. Swanson & E. F. Holton (Eds.), Research in organizations: Foundations and methods of inquiry (pp. 401-418). San Francisco, CA: Berrett-Koehler.

Collinson, D. (2014). Dichotomies, dialectics and dilemmas: New directions for critical leadership studies? *Leadership*, 10(1), 36-55.

Datar, S., Garvin, D. and Cullen, P. (2014). *Rethinking the MBA*. Boston: Harvard Business Review Press.

DeRue, D. and Ashford, S. (2010). Who will Lead and Who will Follow? a Social Process of Leadership Identity Construction in Organizations. *Academy of Management Review*, 35(4), 627-647.

Dragoni, L., Tesluk, P., Russell, J. and Oh, I. (2009). Understanding Managerial Development: Integrating Developmental Assignments, Learning Orientation, and Access to Developmental Opportunities in Predicting Managerial Competencies. *Academy of Management Journal*, 52(4), 731-743.

Gapper, J. (2005). Comment on Sumantra Ghoshal's "Bad Management Theories Are Destroying Good Management Practices". *Academy of Management Learning & Education*, 4(1), 101-103.

Hooijberg, R. and Lane, N. (2009). Using Multisource Feedback Coaching Effectively in Executive Education. *Academy of Management Learning & Education*, 8(4), 483-493.

Ibeh, K., Carter, S., Poff, D., & Hamill, J. (2008). How Focused are the World's Top-Rated Business Schools on Educating Women for Global Management? *Journal of Business Ethics*, *83*(1), 65-83.

Klimoski, R., & Amos, B. (2012). Practicing Evidence-Based Education in Leadership Development. *Academy of Management Learning & Education*, *11*(4), 685-702.

Lawrence, E., Dunn, M. and Weisfeld-Spolter, S. (2018). Developing leadership potential in graduate students with assessment, self-awareness, reflection and coaching. *Journal of Management Development*, 37(8), .634-651.

Lawrence, E., Dunn, M., & Weisfeld-Spolter, S. (2018). Developing leadership potential in graduate students with assessment, self-awareness, reflection and coaching. *Journal of Management Development*, *37*(8), 634-651.

Leavitt, J., & Leavitt, L. (2012). Political Economy of Public Health. *New West Indian Guide / Nieuwe West-Indische Gids*, *86*(1-2), 90-95.

Lester, P., Hannah, S., Harms, P., Vogelgesang, G. and Avolio, B. (2011). Mentoring Impact on Leader Efficacy Development: A Field Experiment. *Academy of Management Learning & Education*, 10(3), pp.409-429. McCall, McCall, M. (1994). Identifying leadership potential in future international executives: Developing a concept. *Consulting Psychology Journal: Practice and Research*, 46(1), 49-63.

M. Dubas, K. (2017). Effective design and assessment of an MBA degree program through benchmarking. *Innovative Marketing*, *13*(4), 25-34.

Marlow, S., & Carter, S. (2004). Accounting for change: professional status, gender disadvantage and self-employment. *Women in Management Review*, *19*(1), 5-17.

Mintzberg, H. and Gosling, J. (2002). Educating Managers Beyond Borders. *Academy of Management Learning & Education*, 1(1), 64-76.

Montgomery, D. (2005). Asian Management Education: Some Twenty-First-Century Issues. *Journal of Public Policy & Marketing*, *24*(1), 150-154.

Petriglieri, G., Wood, J. and Petriglieri, J. (2011). Up Close and Personal: Building Foundations for Leaders' Development Through the Personalization of Management Learning. *Academy of Management Learning & Education*, 10(3), 430-450.

Pfeffer, J. and Fong, C. (2002). The End of Business Schools? Less Success Than Meets the Eye. *Academy of Management Learning & Education*, 1(1), 78-95.

Pfeffer, J., & Fong, C. (2002). The End of Business Schools? Less Success Than Meets the Eye. *Academy of Management Learning & Education*, *1*(1), 78-95.

Pfeffer, J., & Sutton, R. I. (2006). *Hard facts, dangerous half-truths and total nonsense: Predicting from evidence-based management.* Boston, MA: Harvard Business School Press.

Podsakoff, P., MacKenzie, S., Lee, J. and Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.

REED, J. (1992). Situational Leadership. *Nursing Management (Springhouse)*, *23*(1), 63-64

Roeser, R. and Peck, S. (2009). An Education in Awareness: Self, Motivation, and Self-Regulated Learning in Contemplative Perspective. *Educational Psychologist*, 44(2), 119-136.

Shepherd, D., Douglas, E., & Fitzsimmons, J. (2008). MBA Admission Criteria and an Entrepreneurial Mind-Set: Evidence From "Western" Style MBAs in India and Thailand. *Academy of Management Learning & Education*, *7*(2), 158-172.

Steiner, S. and Watson, M. (2006). The Service-Learning Component in Business Education: The Values Linkage Void. *Academy of Management Learning & Education*, 5(4), 422-434.

Torraco, R. (2005). Writing Integrative Literature Reviews: Guidelines and Examples. *Human Resource Development Review*, *4*(3), 356-367.

Твердола, Н. and Tverdola, N. (2018). Leadership and Leadership Development Tools in a Vuca World. *Management of the Personnel and Intellectual Resources in Russia*, 7(6), 14-18.

Waddock, S. and Lozano, J. (2013). Developing More Holistic Management Education: Lessons Learned from Two Programs. *Academy of Management Learning & Education*, 12(2), 265-284.

Montgomery, D. (2005). Asian Management Education: Some Twenty-First-Century Issues. *Journal of Public Policy & Marketing*, *24*(1), 150-154.

Ibeh, K., Carter, S., Poff, D., & Hamill, J. (2008). How Focused are the World's Top-Rated Business Schools on Educating Women for Global Management? *Journal of Business Ethics*, *83*(1), 65-83

Shepherd, D., Douglas, E., & Fitzsimmons, J. (2008). MBA Admission Criteria and an Entrepreneurial Mind-Set: Evidence From "Western" Style MBAs in India and Thailand. *Academy of Management Learning & Education, 7*(2), 158-172.

Pfeffer, J., & Fong, C. (2002). The End of Business Schools? Less Success Than Meets the Eye. *Academy of Management Learning & Education, 1*(1), 78-95.

Appendix 1

S. N.	Topic Article	Name of Journal	Key finding	Published year	Key word
1	Developing leadership potential in graduate students with assessment, self-awareness, reflection and coaching	Journal of Management Development	• New approach to developing leadership potential i.e. integrative model stimulates a process of awareness, reflection and intentional development, and supports the identification a pursuit of goal-directed learning opportunities throughout students MBA program.	2018, Vol. 37 issue 8, pp. 634-651	Leadership development, Educational innovation, Assessments, Coaching, MBA, Self-development Type: Research paper
2	Asian Management Education: Some Twenty-First-Century Issues	Journal of Public Policy & Marketing	• Increasing opportunity in the field of management • Asian Based research are required • Policy maker need to focus on it more.	2005, Vol. 24. No. 1, pp. 150-154	N/A
3.	How focused are the world's top-rated business schools on Education women for global management?	Journal of Business Ethics	• Average 30% in the sample business schools • Only 10% of these business schools have a specialist center for developing women business leaders and only a third offered women focused programs or executive education courses, including flextime options.	2008, Vol. 83, No. 1, pp. 65-83	Women, female, top management, business schools, globalization, business education, women networks
4.	MBA Admission Criteria and an entrepreneurial mind-set: Evidence form "Western" style MBAs in India and Thailand	Academy of Management	• GMAT may discriminate against applicants with a greater propensity of behave entrepreneurially. • The fast-moving global economy requires managers to have an entrepreneurial mind-set	2008 Vol. 7 No.2 PP. 158-172	N/A
5	The End of Business Schools? Less success than Meets the Eye	Academy of Management Learning & Education	• Business schools are not very effective • Neither possessing an MBA degree • Nor grades earned in courses correlate with career success • Little evidence that business school research is influential on management practices	2002 Vol. 1, No.1 pp. 78-79	

Original Article

Factors Influencing Students' Satisfaction in Oxford College of Engineering and Management, Gaindakot-2, Nawalpur of Nepal.

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Abstract

The objective of this study was to examine the students' recommendation to their kith and kin to enrol at Oxford College of Engineering and Management (OCEM) for the higher education study. The previous studies reveal that students' satisfaction was embedded in collage physical facilities, administrative facilities, program quality, quality of academic staff, location of college and reputation of colleges. Quantitative research approach was used as research methodology and the survey study was use as research method applied to collect data from the respondents. The sampling methods was first purpsive and the second was random sampling method. Two hundred and thirty seven respondents (n=237) were participated in this study. The response rate of the survey questionnaire was 94.8 %. The reliability analysis was used to find the value of Cronbach's Alpha in order to find out the reliability and consistency of the data. Twelve subscales were extracted from the variables of each Principal Component. Similarly, Student t-Test was used to find the differences in boys and girls for their recommendation to enrol their kith and kin at OCEM, Nawalpur of Nepal. Fifty seven male (24 %) and one hundred and eighty female (76 %) students were participated in this study. The results highlighted that female students were more satisfied than the male students at OCEM.

The results aslo show that strict student development schedule was positively and statistically significantly associated with the preference of students' recommendation to enrol their kith and kin at OCEM ($p < 0.05$, $B = .486$). Similarly, the results further show that physical facilities of OCEM was positively and statistically significantly associated to students' preference to recommend their kith and kin to enrol at OCEM ($p < 0.05$. $B = 1.038$). The results of Multiple Regression Analysis also highlighted that there is significance association between students' preference and locations of the college. The implications of the findings will be beneficial for the private and public colleges to understand the reason behind the declining trends of students' enrolment at Chitwan and Nawalparasi Districts. It will be also fruitful for the policy makers of higher educational institutions to formulate new student friendly strategies and student motivation policies.

Keywords: *Student satisfaction, physical facilities, academic qualities, administrative facilities, location and reputation of the college, extracurricular activities, Principal Component Analysis*

Introduction

All the college level organizations have been facing the challenges of student's retention globally. This has increased in recent years as the participation in higher education has increased significantly and

diversified (Mihanović, Batinić & Pavičić, 2016). A certain percentage of students will be always expected to drop out of colleges but an effort has to be made to minimize it (Meling, Kupczynski, Mundy & Green, 2012). In today's global world, economic growth depends on the capacity to produce knowledge, and higher education institutions are key role players in developing a knowledge-based economy. Students need to learn more in less time, and quality has become increasingly important issue in higher educational institutions (Sweeney, 2016). It is obvious that good performance could make students more satisfied with their study experience, thus improving their acquired knowledge and career development (Bassi, 2019). Consequently, more effective degree courses at colleges may attract more motivated students and receive increased funding from the government and other institutional lenders, with the result of improving their competitive position (Langstrand, Cronemyr & Poksinska, 2014). To satisfy this requirement, it is important to modify and make more effective organisation and contents of teaching activities, as well as to offer adequate services to students (Bassi, 2019). An important concern for private colleges and public colleges is retaining students and understanding the reasons why students of different programs choose to leave a programme (Gibson, 2010). Additionally, college education is considered an essential means for the social, economic and political development of a country (Hussein & Bahmani 2012). The right to access higher education is mentioned in a number of international human rights agreements; it should be the responsibility of governments and educational service providers to ensure broad access and high standards of quality of the educational training processes in each and every college (Langstrand et al., 2014).

More specifically, colleges should achieve high standards of quality in teaching, research, administrative services and available facilities to pursue their mission better in future. In most cases, good quality is synonymous with good performance even though the definition of quality in colleges' context is quite complex and challenging (Pounder 1999). Student satisfaction is deeply rooted in academic, managerial, infrastructure and technological factors in educational institutions. Student satisfaction is also embedded in the current status of college surrounding, lecturers' educational qualification, teaching pedagogy, placement practices, students' support systems, faculty support, roles of faculty head; roles of principal and library and lab facilities (Uprety & Chhetri, 2014). College education is considered as the essential means for the social, economic and political development of a country. The right to access higher education is mentioned in a number of international human rights agreements; it should be the responsibility of governments and educational service providers to ensure broad access and high standards of quality of the training processes in college level education (Moller, 2006). More specifically, colleges should achieve high standards of quality in teaching, research, administrative services and available facilities to pursue their mission better. Good performance could make students more satisfied with their study experience, thus improving their acquired knowledge and college career. The primary objective of this study was to examine the students' preference to recommend their kith and kin to study at private colleges and the preference of students to continue their higher education at private colleges in Nawalpur District of Nepal. The secondary objectives of this study was to examine students' satisfaction on managerial factor; support service factor; administrative factor; infrastructure factor on students' preference to recommend for their kith and kin (Chen, 2014). Student satisfaction is a highly debatable global phenomenon in educational sector. The rate of high student turn-over is a serious problem at

private and public colleges in Nepal. A large number of students exist from Nepal to foreign countries. There is always fluctuation in student enrollment in colleges due to student's dissatisfaction on academic; managerial; organizational; infrastructure factors, location and reputation of colleges. Students have been treated as customers since a long time ago but their satisfaction level is very poor and debatable. Due to the lack of student satisfaction in different colleges, student turnover has been regarded as a big threat for educational practitioners in Nepal. It is also true that student dissatisfaction directly impacts for both quality of education and college financial situation by which students' enrollment trends have gone down in most of the colleges (Douglas, Douglas & Barnes, 2006). The declining trends of students along with the biggest number of higher education institutions changed the intensity of competition among colleges in Nepal and attracted much more attention to marketing efforts, which was so far highly neglected particularly by Nepalese public institutions (Sojkin, Bartkowiak & Skuza, 2011). Students are seeking for the student centered learning pedagogy, lifelong skills and international standard education in our colleges but the current outcomes are just embedded in securing high marks without focusing on delivering lifelong skills to our students (Uprety & Chhetri, 2014). .

1. Satisfaction:

The financial anxiety, low quality of lecturers and weak teaching practices, traditional organizational managerial practices, a lack of student involvement in college decision making practices, limited learning resources, poor service facilities, and high priority in theoretical education and less priority in lifelong skills have undermined the student preference to recommend their kith and kin and to continue their higher level education in the same colleges in Nepal (Uprety & Chhetri, 2014). Student satisfaction level has become a major focus of academic practitioners and researchers in the competitive learning environment owing to its strong impact on the success of educational institutes and prospective student registration since the past few decades (Langstrand, Cronemyr & Poksinska, 2014; Weerasinghe & Fernando, 2018). More specifically, colleges should accomplish high standards of quality in teaching, research, administrative services and available facilities to pursue their mission to meet the contemporary demands of students (Bini & Masserini, 2015).

1.1 Customer Satisfaction:

The word "satisfaction" is defined by Uprety and Chhetri (2014) as a state of feeling of a person who has experienced performance or an outcome that fulfils his/her expectation. In terms of students, expectation may go as far as before the students even enter the higher education, suggesting that it is important to the educational practitioners to determine first what the students expect before entering the colleges. It is believed that satisfaction actually covers the issues of students" perception and experiences during the college years. It is considered that student satisfaction is a match between what students expect while entering colleges, and perception and experiences they develop during the college years (Carey, Cambiano, & De Vore, 2002). While most studies on satisfaction focus on the perspective of customers and researchers who are facing a problem of creating a standard definition for student satisfaction. Thus providing a need of customer satisfaction theory to be selected and modified so that it can explain the exact meaning of student satisfaction (Hom, 2002). Similarly, William (2002) mentioned that even

though it is arguable to view students as customers, but given the current atmosphere of higher education marketplace, there is a new moral privilege that students have become "customers" and therefore can, as fee payers, reasonably demand that their views should be heard and acted upon so as this study considers students as "customers" (Weerasinghe & Fernando, 2018).

1.2 Student Satisfaction

Retention is a big challenge for all the higher education institutions, especially among the first with more than half of students that drop out doing so in their first year. Many students who endeavour to earn a college degree fail to continue until graduation. Therefore, an effort should be made to keep this dropping trends to a minimum extent (Mukhtar, Ahmed, Anwar & Baloch, 2015). The level of student satisfaction in educational contexts can be defined as a short-term attitude based on students' educational experiences. "Satisfaction in education is a positive originator of student loyalty to institutions and also is an outcome of a successful educational system. Thus, student satisfaction levels can be defined as a function of the relative perceived levels of the quality of experiences and higher educational institutions' performance in providing educational services (Sojkin, Bartkowiak & Skuza, 2011). Elliott and Healy (2001) mentioned that "A short-term attitude resulting from an evaluation of a students' educational experience is generally accepted as student satisfaction. Student satisfaction results when actual performance meets or exceeds the students' expectations" (p.8). Student satisfaction is defined as multi-dimensional and depended on the clarity of student goals as reported by (Mihanović, Batinić & Pavičić, 2016). They further found that satisfaction was significantly influenced by trust. Educational practitioners of higher education can build trust by treating students in a consistent and equitable manner, meeting and handling their expectations and complaints in a caring manner. Bassi (2019) concluded that perceived quality of an educational experience is a consequence of student satisfaction. By analyzing the earlier mentioned definitions of student's satisfaction reveal that understanding the contemporary expectations and demands of students almostly signifies the definition of student satisfaction.

2. The current study

The current study explores the complex phenomenon of student preference to recommend their kith and kin for the enrollment at OCEM. As main starting point, the study puts forward the idea that the moment at which students prefer not to enroll their kith and kin may have an important impact on their motives for quitting from OCEM. In addition, gender and types of enrollment stream, educational level, family income, religions and collage location are incorporated as control variables. The following research questions are guided my investigation:

(1) Does the student satisfaction (preference) vary according to personal variables, such having actual experience with academic factors or not, gender, family income, and collage location?

(2) What motives do existing students at OCEM have for their preference to recommend their kith and kin?

(3) Do the satisfaction and preference differ according to whether or not existing students have in academic, managerial, physical and infrastructure factors and does this distinction remain after controlling for other personal variables (gender, location, family monthly income and college location).

3. Methods

To answer the research questions mentioned in the section 2, a large-scale survey study was conducted in OCEM Gaindakot-2, Nawalpur. OCEM instead of the whole colleges of Nawalpur was chosen as the collage of investigation as the authority for students' preference to recommend their kith and kin with the regional college not with the national colleges. Given the fact, reginal facilities on academic, managerial, psychical and infrastructure condition differ and that these differences might influence students' preferences to recommend their kith and kin, I opted to include only Signal College (OCEM).

3.1 Sample

Given the differences in enrolment, duration of the study and orientation of the aforementioned students satisfaction for academic, managerial, psychical and infrastructure facilities, I opted to investigate students experiences, satisfaction and preference for the recommendation to their kith and kin in a signal program (BBA). As the majority of the students enrolled in four years (BBA program affiliated with Pokhara University), I conducted my study in this program.

For the purpose of the current study, it was necessary to reach both students who have just commenced their BBA and those students who already completed their BBA at OCEM. All the students from different semesters were invited to participate in the study by providing contact information on students who had successfully completed their BBA from OCEM. In total students of eight different semesters agreed to participate in the study. Enrollment in these semesters was 35 to 40 students in each semester. Participants per semester (first, second, third, fourth, fifth, sixth, seventh and eighth) ranged 30 to 45 students. Out of two hundred and thirteen respondents, fifty seven (n=57) respondent was male and one hundred and eighty (n=180) respondents was female. The response rate of the survey instrument was 94.8 % [237/250x100]. The Cronbach's Alpha was computed to check the reliability of the data (see in the Table 2).

3.2 Instruments

Information on the personal variables gender, location of the college, family monthly incomes of the students and religions was obtained through the student administration of the participating collage (OCEM). To gain insight into students' satisfaction and preference for existing students and graduated students, the seven questionnaires were developed. Existing literature was reviewed for students;' satisfaction and preference to recommend their kith and kin. To design the instrument as broadly as possible, no single model or theoretical framework (students satisfaction, expectations, perceive quality, student loyalty) was used as reference. Instead all possible motives were inventoried. The resulting instrument was piloted with tem graduated BBA students who did not study anymore to check our face-validity and possible missing motives of students. For each motive, respondents had to indicate on a five-point scale whether the reason had ranged from completely disagreed to completely agree.

3.3. Analysis

Previous study has sometimes relied heavily on single-item indicators of students' satisfaction and preference or raw frequency counts of motives. This approach maximizes the possibility of measurement error (e.g. Watt &Richardson, 2007). To construct this caveat, I choose to work with more encompassing

constructs, measured by multiple items. To identify these underlying themes in my questionnaire, a Principal Component Analysis (PCA) was run. Subsequently, an Exploratory Factor Analysis (EFA) with Varimax rotation was carried out to refine and interpret these components. Eigenvalues, the scree plot and theoretical interpretability were used to make a decision on the number of factors. A factor loading of at least [0.40] was taken as cut-off point to incorporate a specific item as an indicator for an understanding motive. To explore the relation between students' preference and personal variables (RQ1), descriptive statistics and cross tabulations were computed. Descriptive statistics were also computed to analyze students' motives (preferences) for the recommendation to enroll at OCEM (RQ2). To explore the effect of having actual college's facilities experience after graduation on preference for the recommendation after controlling for gender and different college locations, family income levels and different religions of the students (RQ3), a stepwise strategy was followed. First a Binary Logistic Regression Model was computed to assess the impact of the predictor and control variables on all motives. Both significant levels and effective sizes were considered using Cohen's d cut-off points (Cohen, 1998). The next, the Chi-square Test and Student t-Test was computed to examine the association between two variables measured on categorical scales (Pandya, Bulsari & Sinha, 2018).

4. Results

4.1. Preliminary analyses: subscales with mean, SD, reliabilities and p values

Mean calculation was carried out for an analysis tool because all the variables are in the normal distributions and also variables are in order. Again, the distribution of variables has been well studied and is well understood (e.g. normally distributed). The data analysis was carried out to compare the values of mean, SD, Cronbach's Alpha and p values of the twelve subscales. The subscales were categorized into three groups which is 2.00 to 2.50 as the first group, 2.50 to 3.00 as the second group and 3.00 to 3.50 as the third group respectively (see in the Table 2).

Table 2. Descriptive statistical analysis on academic factors on student's satisfaction (N=237).

Scales	Mean	SD	Cronbach's Alpha	p values
Classroom facilities	2.04	0.64	0.71	.594
Faculty support for maintaining quality	2.13	0.82	0.75	.031
Technological facilities	2.29	0.75	0.70	.049
Physical facilities	2.32	0.74	0.70	.163
Emphasis on punctuality	2.35	.81	0.71	.396
Health and safety issues	2.43	0.91	0.70	.656
Using technology in teaching and learning activities	2.47	0.77	0.72	.603
Emphasis on quality of extracurricular activities	2.58	0.69	0.73	.881
Strict nature of principal	2.81	1.11	0.80	.001
Strict students' career development schedule	2.92	0.90	0.71	.927
Availability of teaching resources	3.12	1.33	0.81	.794
Canteen services	3.33	1.20	0.80	.026

The mean value of the first subscale "classroom facilities" had been calculated as 2.04 signifying that students were disagreed with the statements that they had sufficient furniture, the class room were well

ventilated, they had sufficient light and their classrooms had sufficient place at OCEM. Similarly, the mean value of the second subscale "faculty support for maintaining quality" had been calculated as 2.13 signifying that students had showed their disagreement with the statements that the overall coordinator were always concerned about their issues, to solve my problem on time, to listen about their problems and their .their principal had motivated them to secure high marks in the final exam. The third subscale "technological issues" had been calculated as 2.29 signifying that students somehow disagreed and somehow undecided with the statements that their classroom were seasonally equipped to bear outsider heat and cold, the classrooms were well technologically equipped and the administrative buildings were well equipped in their college. Again, the mean value of the fourth subscale "physical facilities" had been calculated as 2.32 signifying that students were disagreed with the statements that the canteen of OCEM was hygienic, all books had been available which they needed during their study period, the transport system was comfortable, the parking space was sufficient and the lab facilitators were helpful to support them. Furthermore, the mean value of the fifth subscale "emphasis on punctuality" had been calculated as 2.35 signifying that students showed their disagreement with the statements that the faculty members were capable to manage time, .the faculty heads were available all the time when they required to complete their courses and .the faculty members were able to create positive learning environment in their college. Again, the sixth subscale "health and safety issue" had been calculated as 2.43 signifying that students were somehow disagreed and somehow undecided with the statements that number of rest rooms were sufficient, they had safe drinking water and water facility was sufficient in their college. Again the seventh subscale "using technology in teaching and learning activities" had been calculated as 2.47 signifying that students were somehow disagreed and somehow undecided with the statements that lecturers were cooperative, modern technology had been used in teaching.

Students were also somehow found undecided and somehow dissatisfied with the current learning activities and the technology used in the classrooms of OCEM**.** Moreover, the mean value of the eighth subscale" emphasis on the quality of extracurricular activities" had been calculated 2.58 signifying that students were approximately close to neither disagreed nor agreed with the statements that of the co-curricular activities were compulsory, board members of the BBA were strict, extracurricular activities were sufficient and they had learnt practical skills in their college. Again, the mean value of the ninth subscale "strict roles of principal" had been calculated as 2.81 signifying that students had been seen undecided for the statements that their principal was rational to make managerial decision, helpful and focus on academic quality. Similarly, the mean value of the tenth subscale "strict career development schedule" had been calculated as 2.92 signifying that students were exactly neither agreed nor disagreed with the statements that internal exams had been run matching with predetermined schedule of the examination, undecided on students' future grooming career path at OCEM and they were also undecided for the availability of interactive learning environment in their college. The mean value of the eleventh subscale "teaching resources" had been calculated as 3.12 signifying that students were mostly undecided and somehow agreed with the statements that they had sufficient computers in lab and library facilities were available on time in OCEM. Finally, the mean value of the eleventh subscale "canteen services" had been calculated as 3.33 signifying that students were agreed with the statements that **t**he cost of food was reasonable and **c**anteen's service was satisfactory at OCEM.

4.2. Relationship between students' preference personal variable gender

The first H_1 assumes equal variances and the second H_2 does not. The Levene's test decides which version of the t-test to report. If the Levene's test shows no significance violations of the assumption, we should report the "equal variances assumed" version of the t-test. Conversely, if the Levene's test shows significance violations of the assumption, we should report the "not equal variances assumed" version of the t-test (Pandya et al., 2018). I have set the null and alternative hypotheses for Levene's Test for equality of variances are as follows.

H_1: Variances of two groups are equal.

H_2: Variances of two groups are not equal.

The mean score of the male students of the first subscale classroom facilities (M = 2.04, SD = 0.75) is not statistically significantly differ [t (235) = 0.446, p = 0.594] than that of the female students on the same variable (M = 2.00, SD = 0.61). Similarly, the mean score of the male students of the second subscale faculty support for maintaining quality (M = 2.33, SD = 0.90) is statistically significantly higher [t (91.54) = 2.165, p = 0.031, Cohen's d = 0.31] than that of the female students on the same variable (M = 2.07, SD = 0.77), signifying that male students had higher preference to recommend their kith and kin to enroll at OCEM which is minimums effect.. Again, the mean score of the male students of the third subscale technological facilities (M = 3.28, SD = 1.22) is statistically significantly higher [t (91.54) = 3.425, p = 0.001 than that of the female students on the same variable (M = 2.66, SD = 1.03, Cohen's d = 0.31) signifying that male students had seen more happy for the recommendation their kith and kin to join at OCEM which has medium effect on it. Similarly, the mean score of the male students of the fourth subscale physical facilities (M = 2.43, SD = 0.88) is not statistically significantly differ [t (235) = -1.398, p = 0.163)] than that of the female students on the same variable (M = 2.28, SD = 0.67). Again, the mean score of the male students of the fifth subscale emphasis on punctuality (M = 2.43, SD = 0.84) is not statistically significantly differ [t (235) = 0.851, p = 0.396] than that of the female students on the same variable (M = 2.32, SD = .81). Again, the mean score of the male students of the sixth subscale health facilities (M = 2.64, SD = 0.97) is statistically significantly lower [t (86.67) = 1.171, p = 0.04, Cohen's d = 0.29] than that of the female students on the same variable (M = 2.37, SD = 0.87), signifying that female students had higher preference to recommend their kith and kin to enroll at OCEM. Similarly, the mean score of the male students of the seventh subscale using technology in teaching and learning activities (M = 2.91, SD = 0.96) is not statistically significantly differ [t (235) =, p = 0.603) than that of the female students on the same variable (M = 2.92, SD = 0.89).

Again, the mean score of the male students of the eighth subscale emphasis on quality of extracurricular activities (M = 2.59, SD = 0.68) is not statistically significantly differ [t (235) = 0.150, p = 0.881] than that of the female students on the same variable (M = 2.58, SD = .70). Again, the mean score of the male students of the ninth subscale strict nature of principal (M = 3.28, SD = 1.22) is statistically significantly higher [t (82.94) = 3.428, p = 0.001, Cohen's d = 0.54] than that of the female students on the same variable (M = 2.66, SD = 1.03), signifying that male students had higher preference to recommend their kith and kin to enroll at OCEM which is minimum effect. Furthermore, the mean score of the male students of the tenth subscale strict students' career development (M = 2.91, SD = 0.96) is not statistically significantly differ [t (235) = -.092, p = 0.927] than that of the female students on the same variable (M

= 2.92, SD = 0.89). Similarly, the mean score of the male students of the eleventh subscale availability of teaching resources (M = 3.07, SD = 1.22) is not statistically significantly differ [t (234) = 0.262, p = 0.794] than that of the female students on the same variable (M = 3.07, SD = 1.37). Finally, the mean score of the male students of the twelvelth subscale canteen facilities (M = 3.00, SD = 1.13) is statistically significantly lower [t (235) = -.092, p = 0.927, Cohen's d = -.0. 37] than that of the female students on the same variable (M = 3.44, SD = 1.21), signifying that female students' preference to recommend their kith and kin to enroll l at OCEM which is minimum effect.

4.3. Results of Chi-square Test

Chi-square Test was carried out to examine the association or statistical independence between two or more variables measured on categorical scales. The null and alternative hypotheses for Chi-square test bare:

H_0: There is no association between the row (Gender) and column (Students' preference to enroll l at OCEM).

H_1: There is association between the row (Gender) and column (Students' preference to enroll l at OCEM).

Table 4. Chi-Square Test between gender and students' preference to recommend for the admission at OCEM.

Count: Do you recommend your kith and kin to join at OCEM to study?				
Gender		Options 1=Yes 2= No		
		Yeah	No	**Total**
	Male	36	21	57
	Female	153	27	180
Total		189	48	**237**

Crosstabulation of gender and options of the students' preference of recommendation to their kith and kin to join at OCEM shows that out of 57 male students, 36 intended to recommend their kith and kin and 21 did not intend to recommend their kith and kin to enroll at OCEM. Again, out of 180 female students, 153 intended to recommend their kith and kin to study at OCEM and 27 female students did not intend to recommend their kith and kin to study at OCEM. This shows that there is association between gender and students' preference for recommendation for the enrollment at the college where they are studying now.

Table 5. Chi-Square table of gander and students' recommendation preference

Particulars	Value	df	Asymptotic Signifi-cance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.787[a]	1	.000		
Continuity Correction	11.471	1	.001		
Likelihood Ratio	11.645	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	12.733	1	.000		
N of Valid Cases	237				

The table 4 provides that the value of Chi-Square is 11.471 and associated significance value is 0.001<0.05. Therefore, the hull hypothesis is rejected, and signifying that there is association between the gender and students' preference to recommend their kith and kin to study at OCEM.

Table 6 Chi-Square Test between gender and students' preference to continue their higher education at OCEM

Count: Do you continue your higher study at Oxford College of Engineering and Management?				
Gender		Options 1 = Yeah 2 = No		
		Yeah	No	**Total**
	Male	28	29	57
	Female	127	53	180
Total		155	82	**237**

Crosstabulation of Gender and options of the students' preference to continue their higher education at OCEM shows that out of 57 male students, 28 intended to continue their higher education at OCEM and 29 did not intend to continue their higher education at OCEM. Again, out of 180 female students, 127 intended to continue their higher education at OCEM and 53 female students did not intend to continue their higher education at OCEM. This shows that there is association between gender and students' preference to continue their higher education at OCEM.

Table 7. Chi-Square table of gander and students' preference to continue their higher education at OCEM

Particulars	Value	df	Asymptotic Signifi-cance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.788[a]	1	.004		
Continuity Correction	7.867	1	.003		
Likelihood Ratio	8.506	1	.002		
Fisher's Exact Test				.004	.003
Linear-by-Linear Association	8.751	1	.000		
N of Valid Cases	237				

a. 0 cells (0.0%) have expected count less than 5. b. Computed only for a 2x2 table

The Table 7 shows that the value of Chi-Square is 8.788 and associated significance value is 0.004<0.05. Therefore, the hull hypothesis is rejected, and signifying that there is association between the gender and students' preference to continue their higher education at private colleges.

4.4 Analysis of the significant indicators of Binary Logistic Regression Wholesome Model

The wholesome model of the Binary Logistic Regression was applied to find the indicators of student's recommendation to join their kith and kin at OCEM. It is a basic and commonly applied method of predictive analysis for examining whether a set of predictor variable does a good work in predicting an outcome (dependent variable) and which variables are significant predictors of the outcome variables or in what way they are indicated by the sign of the Beta estimates- impact on the outcome variable and its magnitude (Cohen et al, 2007). There were twelve basic measurement scales in quantitative result section, but only nine indicators were found significant for the students' satisfaction to recommendation their kith and kin to join at OCEM (see in the Table 3). Binary Logistic Regression Model also used to find the association between all significant independent variables and dependent variable, signifying the key indicators in the Wholesome Model.

Table 8 Significant indicators of Binary Logistic Regression Wholesome Model
Variables in the equation (n = 237)

Independent variables	B	S.E	Wald	df	Sig	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Emphasis on quality of extracurricular	-.220	.324	.462	1	..497	.802	.425	1.515
Strict student development schedule	.486	.241	4.052	1	.044	1.625	1.013	2.607
Better teaching environment	.510	.292	3.046	1	.081	1.664	.939	2.950
Strict nature of principal	.239	.194	1.525	1	.217	1.271	..869	1.858
Emphasis on punctuality	-.305	.286	1.138	1	.286	.737	.421	1.290
Requirement of high quality	.177	.255	.480	1	.488	1.193	.724	1.968
Physical facilities	1.038	.377	9.482	1	.002	2.822	1.458	5.463
Teaching resources	.074	.166	.202	1	.653	1.077	.779	1.490
Health issue	.260	.249	1.088	1	.297	1.297	.796	2.115
Consent	1.785	.228	61.361	1	.000	.001		

The Omnibus Tests [Chi-Square = 50.404, df = 9, p =.001] and associated significance level is less than 0.05, the present model shows a decrease in deviance from the base model because Chi-Square is positive, showing this model is better fit compared the base model. The model summary table shows the values of -2Log Likehood (187.987), Cox and Snell R^2 and Nagelkerke R^2 [19.20 % (Cox and Snell) and 30.20 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 0.054 > 0.05 is insignificant which is good to support for the regression model fit. The classification Table shows that out of 212 students who showed their preference to recommend their kith and kin to join at OCEM, this model predicts 181 students intended to recommend their kith and kin to join at OCEM but 31 students intended not to recommend their kith and kin to join at OCEM. The classification Table further shows that out of 24 students who did not intent to preference to recommend their kith and kin to join at OCEM, 17 of them intended to recommend their kith and kin to join at OCEM. Thus, it predicts students who intended to recommend their kith and kin to join at OCEM with 96.3 percent accuracy and also predicts that students who did not intend to recommend their kith and kin to join at OCEM with 35.4 percent accuracy.

The results further show that the overall percentage of correctness of observed data was 83.9 %. The results also show that there was association between students' preference to recommend to their kith and kin to enroll at OCEM and strict schedule of student development (p< 0.05 with odds ratio 1.625, B = .486 >1) in the Wholesome Analysis of Binary Logistic Regression Model indicating the positive impact on the schedule of the internal examination, grooming the student's career path and availability of interactive learning environment at OCEM. Similarly, the results further indicate that there was significant association between the student recommendation to their kith and kin to enroll l at OCEM and physical facilities of OCEM (p< 0.05 with odds ratio 2.822, B = 1.038) in the Wholesome Analysis of Binary Logistic Regression Model indicating the positive impact on the availability of books at the library and the comfortable transport system, management of the hygienic canteen and the management of the better lab facilities (see in the Table 8).

4.5. Results on multiple regression on categorical variables location and students' preference

Table 9. Model Summary of Linear Regression of categorical variables

Model	R	R Square[b]	Adjusted R Square	Std. Error of the Estimate
1	.287a	.082	.071	.399

a. Dependent Variable: Student preference to recommend

b. Predictors (Constant): Western Chitwan, Eastern Chitwan, Central Chitwan

The coefficient of multiple determination is 0.082; therefore, about 8.20 % of the variation in the location of OCEM is explained by Eastern, Western and Central Chitwan. The regression equation appears to be very useful for making predictions since the value of R^2 is close to 1 but the value of R-square is not close to 1 so the regression equation appears to be not useful for making predictions.

Table 10. Results of ANNOVA on multiple regression analysis

Model	Sum of Square	df	Mean Square	f	Sig
1 Regression	3.405	3	1.135	7.132	0.000[c]
Residual	38.035	239	.159		
Total	41.440	242			

a. Dependent Variable: Student preference to recommend

b. Predictors (Constant): Western Chitwan, Eastern Chitwan, Central Chitwan students' preference and college location

The results from ANNOVA Table (10) show that when $\alpha = 0.001$ level of significance, there exists enough evidence to conclude that at least one of the predictors (Eastern, Western and Central Chitwan) is useful for predicting students' preference to recommend for the enrollment at OCEM; therefore the model finds useful.

Table 11. Coefficients of multiple regression

Model	Unstandardized B	Coefficient Std Errors	Standardized Coefficient Beta	t	Sig
(Constant)	.776	.031		25.378	.000
1. Eastern Chitwan	-.776	.284	-.170	-2.737	.007
Central Chitwan	-.776	.232	-.208	-3.342	.001
Western Chitwan	.076	.057	.083	1.336	.183

The results again show that when = $\alpha = 0.007$ level of significance, there exists enough evidence to conclude that the slope of the location of Eastern Chitwan is not zero and, hence, the location Eastern Chitwan is useful (with number of locations) as a predictor of students' preference for the recommendation to enroll at OCEM. Again, the results further show that when $\alpha = 0.001$ level of significance, there exists enough evidence to conclude that the slope of the location of Central Chitwan is not zero and, hence, that Central Chitwan is useful (with number of locations) as a predictor of students' preference on recommendation to enroll their kith and kin at OCEM. Finally, the results show that when $\alpha = 0.183$ level of insignificance, there does not exist enough evidence to conclude that the slope of the location of Western Chitwan is not zero and, hence, that Central Chitwan is not useful (with number of locations) as a predictor of students' preference (Western, Eastern, Central Chitwan).

5. Discussion & Conclusion

The purpose of the current study was to examine the students' preference to recommend their kith and kin to enrol and to continue their higher degree at OCEM for the further study. The quantitative research approach along with the survey method was used to examine the opinions, experiences and ideas of students on their preference to recommend and to continue their further education at OCEM. The study was conducted inside the OCEM premises which had followed full criteria of research ethics. This study had clearly defined purpose and common concepts. The research procedure was described in sufficient detail to permit another research to repeat the research for further advancement, keeping the continuity of what has already been attained, reported with complete frankness, clear flaws in procedural design and has estimated the effects of all issues mentioned earlier paragraph upon the findings. The data analysis was adequate to reveal its significance and the methods of analysis was appropriate, the validity and reliability of the data were checked with the minimum value of Cronbach's Alpha (0.60) and the research design was carefully planned to yield results that were as objectives as possible. The Factor Reduction Model of Principal Component Analysis was used to find the relationship among different variables of each instrument.

The data analysis was based on descriptive statistics model where mean, Standard Deviation, Independent Sample t-Test of two different groups and Chi-Square Test were computed to find the association between gender and students' preference to recommend and to continue student's preference for the further education at OCEM. The Binary Logistic Regression of PCA was applied to find the association between the dependent and independent variables. The results show that there is significant relationship between emphasis on quality of extracurricular activities, strict student development schedule, better teaching environment, nature of principal, emphasis on punctuality, requirement of high quality, physical facilities, teaching resources and health and safety issues ($p<0.05$, B = -.500. -.449, -.429, -.490, -.404, -.428, -.904, -.410, -.295 and -.931) respectively. This study reveals that there was association between students' preference to recommend to their kith and kin to join at OCEM and strict student career development schedule ($p< 0.05$ with odds ratio 1.625, B = .486) in the Wholesome Analysis of Binary Logistic Regression Model indicating the positive impact on the schedule of the internal examination, grooming the student's career path and availability of interactive learning environment at OCEM. Similarly, the results further confirm that there was significant association between the male and female for the recommendation to their kith and kin to join at OCEM and physical facilities of OCEM ($p< 0.05$ with odds ratio 2.822, B = 1.038) in the Wholesome Analysis of Binary Logistic Regression Model indicating the positive impact on the availability of books for the study and the comfortable transport system, management of the hygienic canteen and management of the better lab facilities. The implication of this study would be useful for the college administration to formulate new student admission strategies and to reform different internal student centered policies.

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References

Adhikari, B. (2016). *The Gender Discrimination in Childhood Education in Nepal*. [Online] Academia. Available at: https://www.academia.edu/26193972 [Accessed 16 Jun. 2019].

Alves, H. and Raposo, M. (2010). The influence of university image on student behaviour. *International Journal of Educational Management*, 24(1), 73-85.

Bassi, F. (2019). Students' satisfaction in higher education: the role of practices, needs and beliefs of teachers. *Quality Assurance in Education*, 27(1), 56-69.

Bini, M. and Masserini, L. (2015). Students' Satisfaction and Teaching Efficiency of University Offer. *Social Indicators Research*, 129 (2), 847-862.

Cassel, C. and Eklöf, J. (2001). Modelling customer satisfaction and loyalty on aggregate levels: Experience from the ECSI pilot study. *Total Quality Management*, 12(7-8), 834-841.

Chen, Y.C. (2014) "An empirical examination of factors affecting college students' proactive stickiness with a web-based English learning environment," *Computers in Human Behavior;* 31: 1,159-171

Cohen, L., Manion, L. and Morrison, K. (2011). *Research methods in education*. London: Routledge.

Coskun, L. (2014). Investigating the Essential Factors on Student Satisfaction: A Case of Albanian Private University. *Journal of Educational and Social Research*.

Douglas, J., Douglas, A., & Barnes, B. (2006). Measuring student satisfaction at a UK university. Quality Assurance in Education, 14(3), 251–267.

Elliott, K. and Healy, M. (2001). Key Factors Influencing Student Satisfaction Related to Recruitment and Retention. *Journal of Marketing for Higher Education*, 10(4), 1-11.

Farahmandian, S. (2013). Perceived service quality and student satisfaction in higher education. *IOSR Journal of Business and Management*, 12(4), 65-74.

García-Aracil, A. (2008). European graduates' level of satisfaction with higher education. *Higher Education*, 57(1), pp.1-21.

Gibson, A. (2010). Measuring business student satisfaction: A review and summary of major predictors. Journal of Higher Education Policy and Management, 32(3), 251-59

Hanssen, T. and Solvoll, G. (2015). The importance of university facilities for student satisfaction at a Norwegian University. *Facilities*, 33(13/14), 744-759.

Hernadewita et al., H. (2019). PLS-SEM Based Analysis of Service of Learning, Service Quality and Satisfaction of College Student in Polytechnic. *International Journal of Mechanical and Production Engineering Research and Development*, 9(3), 861-870.

Insch, A. and Sun, B. (2013). University students' needs and satisfaction with their host city. *Journal of Place Management and Development*, 6(3), 178-191.

Kärnä, S. and Julin, P. (2015). A framework for measuring student and staff satisfaction with university campus facilities. *Quality Assurance in Education*, 23(1), 47-66.

Kärnä, S. and Julin, P. (2015). A framework for measuring student and staff satisfaction with university campus facilities. *Quality Assurance in Education*, 23(1), 47-66.

Kreber, C. (2009). Academics' teacher identities, authenticity and pedagogy. *Studies in Higher Education*, 35(2), 171-194.

Langstrand, J., Cronemyr, P. and Poksinska, B. (2014). Practise what you preach: quality of education in education on quality. *Total Quality Management & Business Excellence*, 26(11-12), 1202-1212.

Mihanović, Z., Batinić, A. and Pavičić, J. (2016). The link between students' satisfaction with faculty, overall students' satisfaction with student life and student performances. *Review of Innovation and Competitiveness*, 2(1), 37-60.

Mukhtar, U., Ahmed, U., Anwar, S. and Baloch, M.A. (2015). "Factors affecting the service quality of public and private sector universities comparatively: an empirical investigation; *Journal of Arts, Science & Commerce*; 3(1), 132-142.

Nogueira, M. (2018). Measuring Academic Life Satisfaction in Portuguese Students. *Nursing & Healthcare International Journal*, 2(1).

Pandya, K., Bulsari, S. and Sinha, S. (2018). *SPSS in simple steps*. New Delhi: Dreamteach, 1-179.

Quality Improvement Based on a Process Management Approach, with a Focus on University Student Satisfaction. (2016). *Acta Polytechnic a Hungarica*, *13*(6). http://dx.doi.org/10.12700.

Sweeney, L (2016). A Predictive Model of Student Satisfaction," *Irish Journal of Academic Practice:* 5(1), 1-31 (https://arrow.dit.ie/ijap/vol5/iss1/8)

Tucker, B. (2013). Student evaluation to improve the student learning experience: an Australian university case study. *Educational Research and Evaluation*, *19*(7), 615-627.

Uprety, R. and Chhetri, S. (2014). College Culture and Student Satisfaction. *Journal of Education and Research*, 4(1), 77-92.

Vogt, W. (2011). *SAGE quantitative research methods*. Los Angeles [Calif.]: SAGE.

Weerasinghe, I. and Fernando, R. (2018). Critical factors affecting students' satisfaction with higher education in Sri Lanka. *Quality Assurance in Education*, 26(1), 115-130.

Yusoff, M., McLeay, F. and Woodruffe-Burton, H. (2015). Dimensions driving business student satisfaction in higher education. *Quality Assurance in Education*, 23(1), 86-104.

Factor Influencing Customer Satisfaction at BBSM, Bharatpur, Chitwan

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Abstract

This study aims to examine the customer satisfaction against the price factors, service quality, time management to deliver goods to customer and the customer management practice in BhatBhateni Super Market (BBSM). The survey method was applied to collect data using structured questionnaire and the respondents were customers visiting for shopping at BBSM, Bharatpur, Chitwan. The sampling method was the random sampling technique. One hundred and ninety respondents were selected for this study. Out of 190 respondents, 39.12 % (n =76) were male customers and 60. 88 % (n = 114) were female customers. The response rate of the survey questionnaire was 87.5 %. Univariate analysis were carried out by using different simple descriptive statistical tools The Chi-Square test, Factor Reduction Model and Logistic Regression Analysis Model were multivariate the statistical techniques employed to get the results. Previous studies on customer satisfaction show that it merely depends upon the price factors, service quality, time management to deliver goods to customer and customer management factor. The results showed that there was statistically significant association between the better customer relationship management and customer satisfaction at BBSM ($p < 0.05$, B= .438). But the results also showed that there is no significant association between customers centered service facilities and equipped technology used by BBSM ($p > 0.05$). The implication of this study will be beneficial to the board members of the company executives to formulate new customer-center strategy and also useful to the branch managers of BBSM all over the country.

Keyword: *Strategy, Customer Management, Association, Factor Analysis, Logistic Regression.*

1. Introduction

The degree of fulfilment of customer's expectation, needs and demands with the level of service is consumer satisfaction. Simon & Gómez (2013) define customer satisfaction as "a person's feeling of pleasure or disappointment from comparing a product's perceived performance in relation to his or her expectations" (p.15). The definition of the customer's satisfaction is embedded in reasonable price of the product, quality of the product, service after sales, and the behaviour of the staff of the company. Additionally, customer satisfaction is simply stated as a customer's evaluation of their purchase and consumption experience with a product, service, brand, or company (Kotler & Armstrong, 2012). More significantly, customer's satisfaction is deeply rooted in affecting customers' repeating purchase decisions

and subsequent company profits. Customer's satisfaction is now a prominent business performance metric. Again, the customer's satisfaction is a subjective measurement, which is rarely used in the performance measurement of stakeholders.

Figure 1. Factors affecting Supermarket customer satisfaction

Price of the products

Previous studies suggest that price, as a determinant element of satisfaction, is varied by super market store format. Price image has implications for store support, and strategic decisions related to selecting a target customer base and creating in-store environments (Hassan, 2018). Grocery pricing strategy, for example high-low (HILO) pricing, has a direct consequence on customer purchase habit in conventional grocery stores: large basket customers prefer a store which offers an everyday low-price format, while small basket shoppers desire a store that offers a HILO format. People who shop for economical brands also tend to select "economical" store formats. It was found that low prices were second most important store characteristic for supermarket shoppers; store location was the first (Baltas & Papastathopoulou, 2003).

1.1 Quality of product

Product quality and product features were considered the most important product choice criteria in a study of Greek grocery customers (Baltas and Papastathopoulou, 2003). Quality is seen as "a satisfaction-maintaining factor in the supermarket sector" in that improvements in quality have a small positive impact on satisfaction while reductions in quality of the same magnitude have a significantly greater chance of reducing satisfaction (Gómez, McLaughlin & Wittink, 2004, p. 273). For specialty store customers, merchandise quality is an important differentiating factor. Previous study found the result that, specialty store customers scored product quality higher in comparison to other store formats, the result demonstrates the importance of product quality for these customers. A similar study by King and Ring, 1980, also found product quality to rank considerably higher for specialty customers when compared to mass merchandiser and department store customers.

1.2 Management of customers

While the literature on customer perceptions of service and its impact on food store shopping experiences is sparse, empirical work drawing comparisons between specialty and department store customers provides guidance on the strength and direction of these characteristics to store support. Specialty store shoppers view service to be one of the most important determinants of store support. Sales associates play a pivotal role in a customer service situation, with the most important attributes being store clerk attitude and treatment of customers (Kotler & Armstrong, 2012). In a study of customer service in specialty and conventional grocery stores, customer perceptions of service were found to vary greatly. It was also found that customers who shop small grocery chains placed greater importance on service quality than patrons of large grocery store chains (Kirkup et al., 2004).

1.3 Time Management

Time management to check out the products is another influencing factor of customer satisfaction. Study in recent years have pointed to the checkout stand as a massive headache for retail customers. As shopping has migrated online, where a few clicks are all it takes to complete a transaction, consumers have grown less and less patient with a process that has remained much the same for years. Limitations in technology and the supermarket format have long prevented grocers from speeding up their checkouts. Customers are very busy today and do not want to spend more time in shopping goods and services (Cheriyah et al., 2013). The research study of Cheriyah, Sulistyowati, Cornelia & Viverita (2013) found that customer satisfaction is significantly positively associated with waiting time in the checkout process Super Market Stores.

BBSM is the leading brand for retail superstore in Nepal. It has all together 16 branches all over the Nepal and it is on process of expansion to other big cities too. There are many customers who go shopping in BhatBhateni Super Market **(**BBSM). Customer can get varieties of products from FMCG goods to luxurious goods below a single roof. Almost 120000 varieties of goods are available there. The BBSM branch of Chitwan was opened on Baisakh 11, 2073. The flow of customer to BBSM, Chitwan are high but the sales of the store is not as expected as the flow of customers.

1.4 Purpose of the study

The primary purpose of the study was to examine the customers' satisfaction with BBSM located at Narayanagarh Chitwan. The specific purposes of this study were to examine the opinions and thoughts of regular customers for the cost of products, quality of goods; customer management approach and time management to customers. The secondary objective of this research is to measure the consumer satisfaction level towards BBSM at Chitwan District.

1.5 Statement of the problem

The customers are attracted to visit the store, but sales figure is not high as compared to the volume of customer flow (Kotler & Amstrong, 2012). Many people visit there for sightseeing and for fun. It is a big question for BBSM to have loyal customers. If the BBSM want loyal customers, the customers must be satisfied, and it should understand customers' need. Keeping in view of the above, the main problem of the study is: Are customers satisfied by the services provided by the BBSM in the selected districts of Nepal.

2. Research Methods

The survey method was used to collect data for this study where 190 random customers of BBSW were selected in different opening days and time. Thus collected primary data was tested for the reliability using Cronbach's Alpha, and various statistical tests were also applied. Chi-Square Test was computed to find the differences of their preference between the male and female respondents. The Binary Logistic Regression Analysis was used to find the association between the dependent variable (customer's satisfaction) and independent variables (price of the product, employees' behaviour with customers, discount rate, utilization of technology in buying and selling activities). The target population was one thousand (n = 1000) customers and sample population was one hundred and ninety (n = 190). The proportion of the sample population was [(n/Nx100)] 19 %. Two hundred and ten (n=210) respondents were requested to fill the structured questionnaire, but only one hundred and ninety (n=190) respondents filled the dispatched questionnaire. The response rate was [190/210x100] 90.47 %. Cronbach's Alpha was computed for reliability of collected data of this study. The proportion of the male respondent was [76/190x100] 39.12% (n =76) and the female respondent was [114/190x100] 60. 88% (n=114) had participated in this study. After computing reliability test of the collected data, the data analysis was carried out using different simple statistical tools (Cohen, Manion, Morrison, & Bell, 2011).

3. Results

Each survey instrument was examined by computing the factor analysis for the classification of variables or detecting structure in relationship between variables. There were methods based on the assumption that some variability in data was not explained by all the components. However, this study has limited the discussion to use of factor analysis for the data reduction which has focused only on Principal Component Model. The analysis has finalized the price of goods at BBSM, lower discount rate, discount rate at BBSM, facilities and quality of products, facility of furniture and waiting room, better BBSM employees behaviour, use of technology and clean environment, customer-centered services, varieties of new goods and sound customer management, facilities and equipped technology, varieties of goods and quality services and customer's facilities and management (see in the Table 2). After computing, factors loading of the survey instrument as the sub-scales of PCs (see in the Table 1). The analysis is based on the empirical literature of customer relationship management (CRM) system for improved business profitability, better customer-centered decision making, enhanced customer relations, and good quality of services and product offerings. The underpinning of the customer-oriented managing concept is that identification and satisfaction of customer needs lead to improved customer retention, which is based on corporate profitability (Mithas, Krishnan & Fornell, 2005).

3.1 Factors loading of variables

The survey instrument has been divided in to four parts namely Group A, B, C and D. Each group has questions measured in Likert scale. Factor Reduction Model was applied to find the close relationship among variables within a group and to segregate variables in respective group of each survey group. The groups are later given the name sub-scales. Following Table 1 shows variables of different groups of questionnaires with their factors loading, these factors loading were used to group the variable in to different subgroups.

Table 1. Factor loadings of each variable (N=190).

Groups	Variables	Factor loadings
A (Price Factor)	**The price of the products in BBSM fluctuates time and again**.	0.804
	I find goods in BBSM are cheap.	0.798
	The cost of product is equal with another store in BBSM	0.792
	Goods are cheaper in BBSM than other super markets	0.779
	The cost of products in BBSM is higher than other stores	0.714
	The discount rate of BBSM is leaser than other super markets.	0.714
	The discount rate of BBSM is equal to other stores.	0.63
	There is not price fluctuation in BBSM.	0.508
	The rate of discount on products is greater than other stores	0.484
B (Service Factor)	**BBSM have enough inventory store for goods.**	0.786
	BBSM has drinkable water for customers	0.786
	There is customer's waiting room at BBSM	0.783
	BBSM has money exchange facility.	0.703
	I feel comfort while buying at BBSM	0.667
	BBSM has no sound pollution.	0.633
	BBSM has sound pollution.	0.619
	BBSM has neat and clean environment.	0.58
	BBSM has verities in shopping goods.	0.556
	There is comfortable furniture for the customers while sitting.	0.531
	BBSM have quality food products.	0.481
	BBSM has the facility of using Visa Card.	0.324
C (Quality Factor)	**BBSM has voice pollution.**	0.938
	BBSM has neat and clean environment	0.824
	BBSM has verities of goods.	0.777
	BBSM has quality food service.	0.772
	There is no sound pollution in BBSM.	0.745
	BBSM has managed enough space for the customers.	0.735
	I feel comfort when I go to BBSM to buy goods.	0.726
	BBSM has well management for drinkable water to customers.	0.72
	BBSM has enough inventory store in BBSM.	715
	BBSM has comfortable waiting room.	0.585
	There are the facilities of money exchange.	0.439
	BBSM accepts Visa Card for the payment.	0.398
D (Customer Management)	**New goods are available in BBSM.**	0.842
	The BBSM takes a shorter time in money exchange.	0.799
	The employees of BBSM answer the customers' inquiry	0.972
	The employees' behaviour of BBSM is not good	0.753
	The BBSM understands customers' demands/needs.	0.732
	The customers of BBSM are satisfied service facilities	0.714
	The BBSM solves the problems of customers.	0.706
	New goods are available in BBSM.	0.62
	The BBSM service is punctual and quick.	0.582
	I will take the service of BBSM again.	0.576
	Sometimes. I take service from other super markets.	0.5
	Customers are available in BSSM Store.	0.492

Factors loading for different variables under four groups (sub scales) is shown in Table 1, variables with highest factor loading within the group are highlighted. Based on the Factor Loading, question in each group has been classified in to different subgroups as suggested by SPSS outputs. Table 2 shows the sub groups of different groups and their variation and different statistical values.

Table 2. Subscales of variables of each Principal Component (n =190)

Group	Subgroup	Variations	KMO	Mean	SD	Alpha
Group A (Price Factor)	Price of goods at BBSM	19.25 %	0.63	2.65	0.87	0.63
	Lower discount rate	16.99 %		2.69	0.85	0.62
	Discount rate at BBSM	12.72 %		2.73	0.79	0.61
Group B (Service Factor)	Facilities and quality of products	38.77 %	0.77	2.80	0.081	0.081
	Facility of furniture and waiting room	11.42 %		3.10	0.85	0.77
	Use of technology and clean environment	9.11 %		2.71	0.91	0.6
Group C (Quality Factor)	Better BBSM employees behaviour	32.26 %	0.71	2.65	0.87	0.63
	Customer centered services	13.23 %		2.73	0.85	0.61
	Verities of new goods and sound management	9.60 %		2.69	0.79	0.6
Group D (Better Customer Management Factor)	Facilities and equipped technology	22.02 %	0.62	2.80	0.84	0.78
	Verities of goods and quality service	13.55 %		2.80	0.102	0.65
	Customer's facilities and management	13.37 %		2.76	0.76	0.61

Reliability of the data was confirmed by the computing reliability scales of the Cronbach's Alpha as all the subgroups created using Factor loading have Cronbach's Alfa greater than 0.6. Also, the adequacy of the sample was confirmed by the calculated value of KMO > 0.60. The first largest variation among the subgroup is embedded in the second group. Similarly, the second and third largest variation of the subgroup is embedded in the third and fourth group respectively. But, the least variation among the subscales (subgroups) is embedded in the variables in first part of the questionnaire as shown in the Table 2. The results show that the facility of furniture and waiting room has the highest mean value (3.10) signifying that customers were approximately satisfied with available furniture in the waiting room. But customers were neither satisfied nor dissatisfied with the price level of the products, quality of the products and customer management at BBSM Bharatpur because the mean values were found less than 3.00. It is concluded that customers were not really satisfied with the overall current price level of the products, quality of products, service of the employees to customers and customer management at BBSM in Bharatpur Chitwan of Nepal.

3.2 Results of Chi-Square on gender and costumers' intention to continue buying at BBSM in future.

To examine the association between gender and customer's intention to continue future recommendation to BBSM for their kith and kin and their self also, Chi Square test was conducted. Its cross tabulation is shown in Table 3 and test statistics value is presented in Table 4.

Table 3 Chi-Square Test between gender and students' intention to continue their buying at BBSM (n=190).

Gender	Continue buying products in future at BBSM		Total
	Yeah	No	
Male	44	36	80
Female	77	33	110
Total	155	82	190

Above Table 3 shows that out of 80 male customers, 44(55%) intended to continue their buying habits in future and 36 (45 %) customers did not intend to continue their buying habit. Again, out of 110 female customers, 77 (70 %) intended to continue their buying habits and 33 (30 %) female customers did not intend to continue their buying habits at BBSM. This result shows that there is association between gender and customers' intention to continue their buying habits at BBSM.

Table 4. Chi-Square table of association between gender and students' intention to continue their buying at BBSM (n = 190).

Particulars	Value	df	Asymptotic Signifi-cance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	**4.506[a]**	**1**	**0.034**		
Continuity Correction	3.881	1	0.049		
Likelihood Ratio	4.489	1	0.034		
Fisher's Exact Test				0.047	0.025
Linear-by-Linear Association	4.482	1	0.034		

Here Chi Square Test is applicable because no cell has expected frequency less than five. The Table 4 provides that the value of Chi-Square is 4.506 at 1 degree of freedom with P-value value 0.034 < 0.05. The Null hypothesis of "there is no association between gender and students' intention to continue their buying at BBSM" is rejected and signifying that there is no association.

3.3 Wholesome Binary Logistic Regression Model for relationship of customers' opinion on their satisfaction at BBSM.

Binary Logistic Regression Model was used to find the relationship between the level of customer satisfaction and quality of products, service quality, and employees' behaviour at BBSM Bharatpur Chitwan. There were twelve independent variables but only seven variables were found significant in the Wholesome Model of Binary Logistic Regression (BLR). So, the seven significant variables entered the Binary Logistic Wholesome Model.

Table 4. Summary of the significant predictors of the Wholesome Model of BLR (n = 190).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)	95 % C.I for Exp (B)	
							Upper	Lower
Use of technology and clean environment	0.134	0.19	0.497	1	0.481	1.143	1.657	0.788
Better Behaviour of BBSM employees	0.155	0.219	0.501	1	0.479	1.168	1.795	0.76
Customer Centered Service	-0.096	0.18	0.286	1	0.593	0.908	1.293	0.638
Facilities and equipped store technology	-0.329	0.18	3.336	1	0.068	0.72	1.024	0.506
Verities of products and quality service	0.193	0.215	0.804	1	0.37	1.213	1.849	0.795
Better customer management	0.438	0.171	6.552	1	0.01	1.549	2.166	1.108
Customers' facilities at BBSM	-0.17	0.166	1.037	1	0.309	0.844	1.17	0.609
Constant	-0.642	0.168	14.59	1	0.175			

Before carrying out Binary Logistic Regression, some pre-required tests were conducted, the Omnibus Tests [Chi-Square = 15.421, df = 7, p = .031] and associated P-value found less than 0.05, the present model shows a decrease in deviance in prediction from the base model, showing that this model is better fit compared to the base model. Hosmer and Lemeshow Test [5.641] shows that p = 0.687 > 0.05 is insignificant which is good to support for the regression model fit. Again, the model summary table shows the values of 2Log Likehood (213.274), Cox and Snell R^2 and Nagelkerke R^2 [8.30 % (Cox and Snell) and 11.60 % (Nagelkerke)] variance of the model was explained by the independent variables. Also the result shows that overall model gives 65.7 % percent correct prediction. The classification table shows that the base model though, predicts correctly the number of satisfied customers but it does not correctly predict the number of dissatisfied customers. Thus, it predicts satisfied customers with 90.2 percent accuracy and predicts 22.2 percent accuracy of dissatisfied customers at BBSM.

Results show that, out of 150 satisfied customers, this model predicts that 101 customers are satisfied and 49 are dissatisfied. Again, out of 25 dissatisfied customers, this model predicts that 11 customers are satisfied and 14 are dissatisfied (see in the Appendix 1). The results show that there is positively statistically significant correlation between the better customer relationship management and customer satisfaction at BBSM (p <0.05, B= .438). Again, when the independent variable the better customer management increases one unit, customer satisfaction can be predicated to increase around 1.459 times if other variables are controlled. This study has supported the findings of Mithas, Krishnan & Fornell (2005). The study along with the current study summarized that the use of CRM applications is positively associated with improved customer knowledge and improved customer satisfaction. This study also shows that gains in customer knowledge are enhanced when firms share their customer-related information with their supply chain partners.

But the results show that there is no significant relationship between customers centered service, facilities and equipped technology used by BBSM, use of technology and maintain clean environment, varieties of new and quality products and facilities and quality products of BBSM (p > 0.05). This study has supported the empirical findings of Mithas, Krishnan & Fornell (2005) because both studies found that customer relationship management was likely to have a positive effect on customer satisfaction, for example, CRM applications enable firms to customize their offerings to each customer and also help firms to gain customer knowledge which support firms improve their customer satisfaction in future.

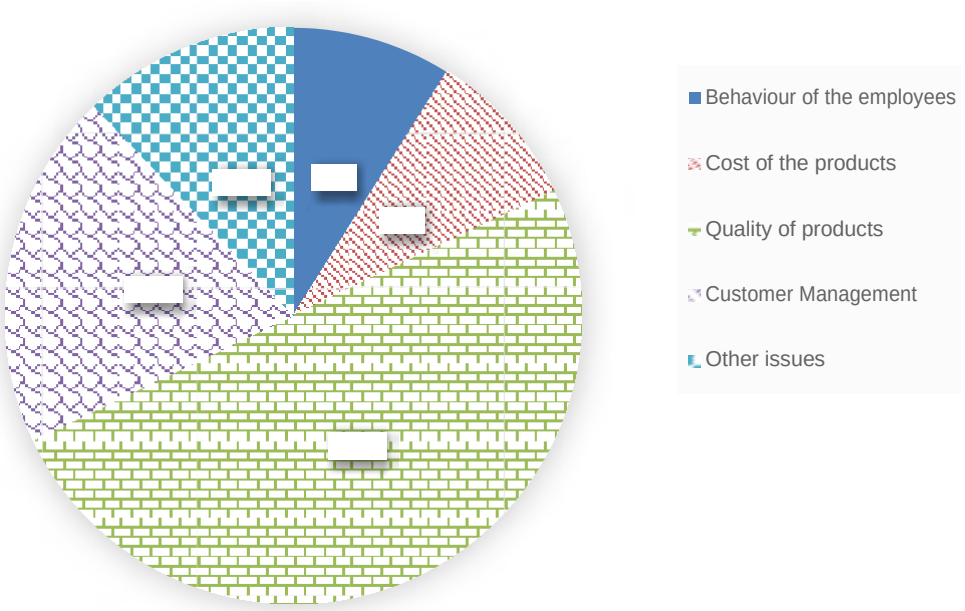

Figure 1. The reasons of choosing BBSM by the customers

The results show that quality of products is the first reason (50%) of choosing BBSM, Consumer Management (20 %) is the second reason of choosing the BBSM, Other reason (12 %) is the third main reason of choosing BBSM, Behaviour of employees (9 %) is the fourth reason of choosing BBSM and the last reason of choosing BBSM is cost of product (9 %). Seventy-one (n=70) males and one hundred and one (n=101) females go to buy their goods.

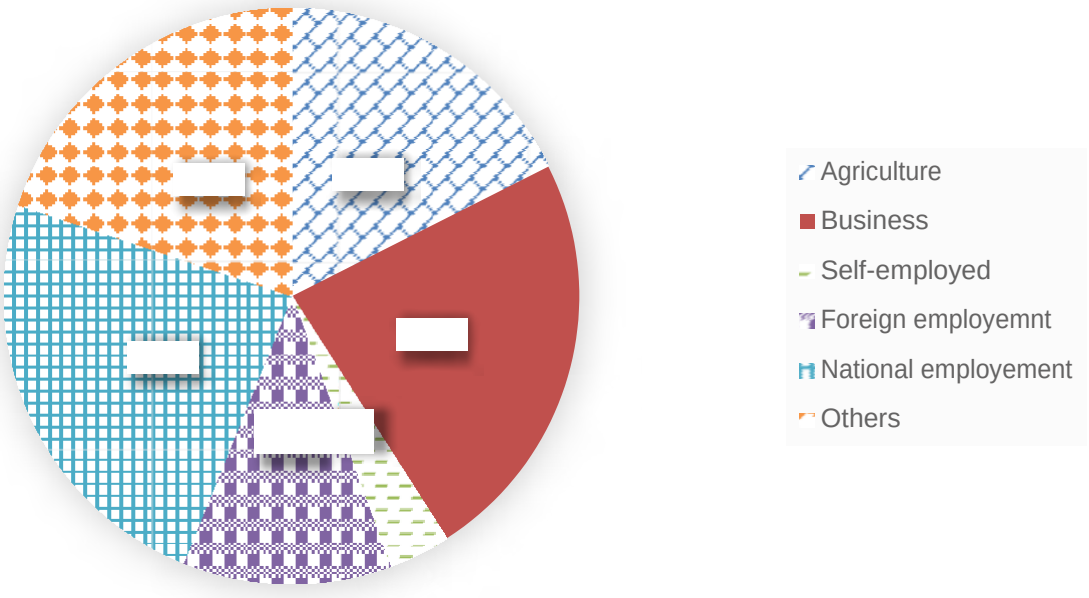

Figure 2. Profession of BBSM customers

The highest percentage of profession who did shopping at BBSM Bharatpur was from the households from National Service (24 %), the second highest profession of the customers was business (23 %), the third profession of the customers was self-employed (20 %), the fourth highest profession was customers was agriculture (18 %), the fifth highest profession of the customers was foreign employment (12 %) and the least percentage of profession was others (3 %).

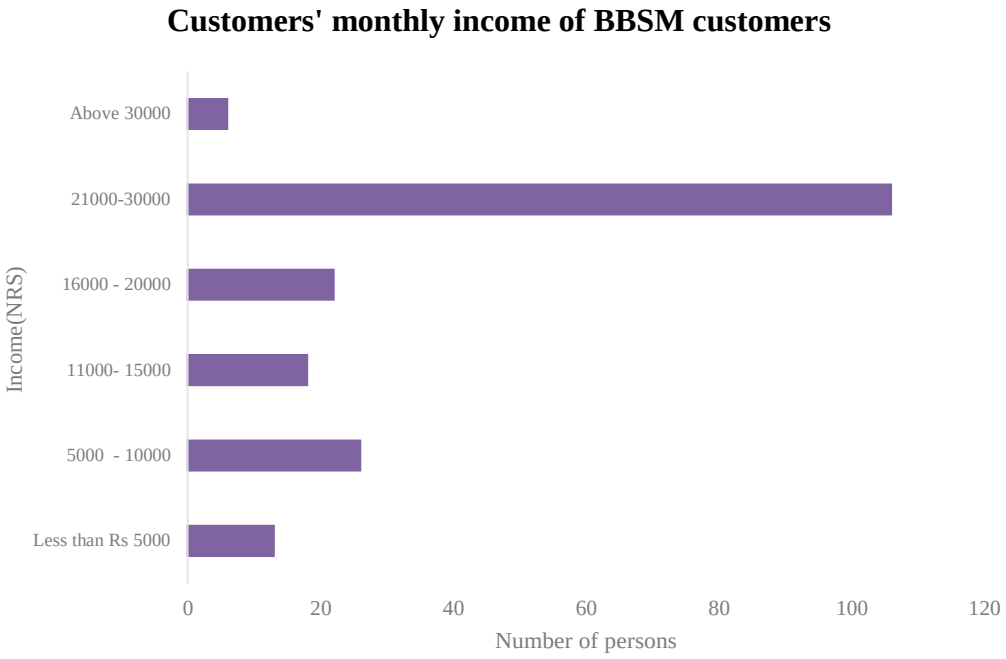

Figure-3: Customers' monthly income

The results show that the highest number of BBSM customers' monthly income was ranked from NRS 21000 to NRS 30000. Again, the least percentage of BBSM customers' income level was more than NRS 30000 per month (see in the Chart 1).

4. Discussion and Conclusion

The primary objective of this study was to examine the customers' satisfaction at BBSM Bharatpur Chitwan of Nepal. The quantitative approach was used as research methodology and the survey study was used to as research method. The survey questionnaire was used to know the opinions and experiences of the sampled customers on their satisfaction based on service quality, price level, employees' service and customer relationship management. The target population was one thousand and the sampled customers were one hundred and ninety which is 19 % as the sampled population. The proportion of the male and female population was [76/190*100] 39.12 % (n =76) and the female respondent was and [114/190*100] 60. 88 % respectively.

The total sample customers participated in this study was one hundred and ninety-one where the response rate was 84.88%. The results show that there is positively statistically significant relationship between use the better customer management and customer satisfaction at BBSM Bharatpur Chitwan ($p < 0.05$, $B = 0.438$). Again, when the independent the better customer management increases one unit, customer satisfaction can be predicated to increase around 0.438 times if other variables are controlled. The current study has supported the findings of ROH, AHN & HAN (2005). Both studies summarized that the CRM system success model that consists of CRM initiatives: process fit, customer information quality, and system support; intrinsic success: efficiency and customer satisfaction; and extrinsic success: profitability. The results show that the main reason of choosing BBSM by the customer was quality of products. The results further show that there is no significant relationship between customers centered service, facilities and equipped technology used by BBSM, use of technology and maintain clean environment, verities of new and quality products and facilities and quality products of BBSM ($p > 0.05$). The monthly incomes of the majority of customers was fallen on NRS 21000 to 30000. The results

further show that there is association between the gender and customers' intention to continue their buying habits at BBSM Bharatpur Chitwan. The profession of the respondent was summarized as the national service (24 %), business (23 %), self-employed (20 %), agriculture (18 %), foreign employment (12 %) and other profession was (3 %). This study is based on customer relationship management which is a combination of people, processes and technology that seeks to understand a company's customers. CRM has evolved from advances in information technology and organizational changes in customer-centric processes. Companies that successfully implement CRM had gained the rewards in customer loyalty and long run profitability.

References

Baltas, G. and Papastathopoulou, P. (2003), "Shopper characteristics, product and store choice criteria: a survey in the Greek grocery sector", International Journal of Retail & Distribution Management, 31:.10, 498-507.

Cheriyah, Y., Sulistyowati, W., Cornelia, A., & Viverita, V. (2013). Factors Affecting Customers' Satisfaction and Perception: Case Study of Islamic Banks' Service Quality. *ASEAN Marketing Journal*, *2*(1), 25-30

Cheriyah, Y., Sulistyowati, W., Cornelia, A., & Viverita, V. (2013). Factors Affecting Customers' Satisfaction and Perception: Case Study of Islamic Banks' Service Quality. *ASEAN Marketing Journal*, *2*(1), 25-30

Cohen, L., Manion, L., Morrison, K., & Bell, R. (2011). *Research methods in education* (1st ed.). London: Routledge.

Gómez, M., McLaughlin, E. and Wittink, D. (2004). Customer satisfaction and retail sales performance: an empirical investigation. *Journal of Retailing*, 80(4), 265-278.

Hassan, N. (2018). Factor Affecting Customer Satisfaction Towards Service Quality of Front Office Staff at the Hotel Putra Regency. *SSRN Electronic Journal*. 16(3), 34-45.

Kirkup, M., De Kervenoael, R., Hallsworth, A., Clarke, I., Jackson, P. and Perez del Aguila, R. (2004). Inequalities in retail choice: exploring consumer experiences in suburban neighborhoods. *International Journal of Retail & Distribution Management*, 32(11), 511-522.

Kotler, P., & Armstrong, G. (2012). *Principles of marketing*. Boston: Pearson Prentice Hall.

Mithas, S., Krishnan, M., & Fornell, C. (2005). Why Do Customer Relationship Management Applications Affect Customer Satisfaction? *Journal of Marketing*, *69*(4), 201-209.

Mithas, S., Krishnan, M., & Fornell, C. (2005). Why Do Customer Relationship Management Applications Affect Customer Satisfaction? *Journal of Marketing*, *69*(4), 201-209.

ROH, T., AHN, C., & HAN, I. (2005). The priority factor model for customer relationship management system success. *Expert Systems with Applications*, *28*(4), 641-654.

APPENDIX 1

Observed		Predicted QN16		Percentage Correct
		Yeah	No	
QN16	Intention to recommend	150	49	90.2
	Does not intend to recommend	25	11	22.2
Overall Percentage				65.67

Original Article

Student Satisfaction at Secondary Level in Oxford College of Engineering & Management

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Abstract

The objective of this study was to examine the student satisfaction level at grade 11 and grade 12 in Oxford College of Engineering and Management (OCEM). Quantitative methodology approach along with the survey study was applied in this study. The survey questionnaire was used as research instrument to collect data in this study. The target population was four hundred and fourty and the sampled population was two hundred and four. There were two hundred and four (N= 204) respondents where the boy's population was 55.88 % and girl's population was 41.11 %. The response rate was 94.22%. The Cronbach's Alpha was calculated to find the reliability of the data. Independent sample t-test was used to find the differences between the male and female students' intention to recommand for the enrollment of their kith and kin at OCEM. The previous studies reveal that students' satisfaction at the secondary level schools were embedded in the factor of quality of education, school administrative factor, managerial factor, psysical factor and school location. The results show that lifelong academic skills, standard and qualified lecturers, student centered activities, strong faculty management, proactice faculty support, better college environment and facilities, punctuality of the transfort facilities, strong security environment, better lab facilities and advanced library facilities, advanced physical facilities and college infrastructure facilities were extracted as the key subscales of the analysis section. The results show that there was significant relationship between existing students' recommendation to enrol and student centered activities, advanced lab and library facilities and college facilities at Oxford College of Engineering and Management (OCEM) at Nawalpur of Nepal ($p < 0.05$, B = -.342, B = -.309. B = -.398). The implications of findings will be beneficial for college principals, school leaders, academicians, Head of Department, college promoters to formulate student centered strategies. It will be also useful to college policy makers to formulate new student-centered strategy to motivate students for the enrolment. In generalizing the results of the present study, there is some cause for concern due to a sampling method and representativeness of the boys and girls

Keyword: *student satisfaction, quality of education, school administrative factor, managerial factor, physical factor and school location.*

1. Introduction

Student satisfaction is a debatable issue in the global context because the higher education market is strongly affected by internal and external environment of the colleges. This has produced a competitive market for educational services and increased competition to attract students (Nogueira, 2018). As

competition among higher education institutions (HEIs) has increased, these institutions have been forced to adopt market-oriented strategies to differentiate themselves from their competitors and thereby attract as many students as possible (Butt & Rehman, 2010). HEIs have also realized that their sector represents a business-like service industry and have begun to focus more on meeting or exceeding the needs of their students (Gruber et al., 2010; Mihanović, Batinić & Pavičić, 2016). The primary objective of this study is to examine the experiences and opinions of students of grade 11 & 12 on the current available academic, managerial, physical and infrastructure facilities for their intention to recommend their kith and kin. Students satisfaction level is embedded in the internal and external and external environment of the educational institutions which covers image of college, ideal location of the college, quality of college facilities, quality of college academic program experiences and the quality of administrative staff. The secondary objective of this study is to identify the student's intention to continue their higher level education at OCEM. Student satisfaction is a short-term attitude resulting from an evaluation of a student's educational experience (Hossain & Islam, 2012), and as such, it is important to understand for a number of reasons for example, to motivate students, to generate more profit and to penetrate in the new market. Satisfied customers tend to have a higher probability of generating positive word-of-mouth (Kwun, Ellyn & Choi, 2013; Nogueira, 2018). Thus, it is more likely that satisfied students engage in positive word-of-mouth communication than do less satisfied students. Feedback from students can be used to improve those factors where satisfaction is lower than the normal standard and because student satisfaction has been found to be associated with the perceived quality of the institution. Kwun et al., (2013) concluded that improving the level of student satisfaction will eventually improve public perception with respect to the quality of the institution. The level of student dissatisfaction has been increased in the Nepalese institutions (Sahayogee, 2019) and student retention has seen a big challenge to the educational practitioners in higher education. If educational organizations are failed to satisfy their students, the future of higher educational institutions will be in risk. Student centered marketing strategy has emerged to fulfil the contemporary demands of students in higher education sector (Upreti & Chhetri, 2013). The current study will be beneficial for higher educational academic leaders and practitioners to focus their marketing strategy to satisfy the students. Similarly, this study will also helpful for local government to know the current demand of students and to regularize the local education system and to associate with student mankind.

2. Theoretical Model of The Study

Student recommendation is deeply rooted in their satisfaction level where they are currently studying as a student of higher education. Generally, they evaluate the current facilities available by their respective college where the quality of administrative staff; college program; image of the college; ideal location of the college and external environment of the college are the key indicators to satisfy them (Weerasinghe & Fernando, 2018). Factors affecting student's satisfaction are also concluded as a student's culture, subculture, social class; reference groups, aspirational groups, member groups, family roles and status, age and life-cycle stage, occupation, economic circumstances, lifestyle, personality and self-concept, perception, learning, beliefs, and attitudes (Attreya, 2018). Again, student's satisfaction is deeply rooted in 7P's of the service marketing which are mentioned as product, price, placement, promotion, people,

process, physical evidence as mentioned by Gajic (2011). Here product means college program, price means, fee of each course, placement means, internship and job guarantee, promotion means advertisement of college, people means lecturers and administrative staff, process means different stages of program completion and physical evidence means physical facilities of college (Prentice, Brady & McLaughlin, 2018). Again, improving the college program, reducing the tuition fee; improving the connection with economic environment; the image of college; the academic staff; the management activities, and improving the college facilities are key influencing factors of student's satisfaction in higher educational institutions (Hanssen & Solvoll, 2015).

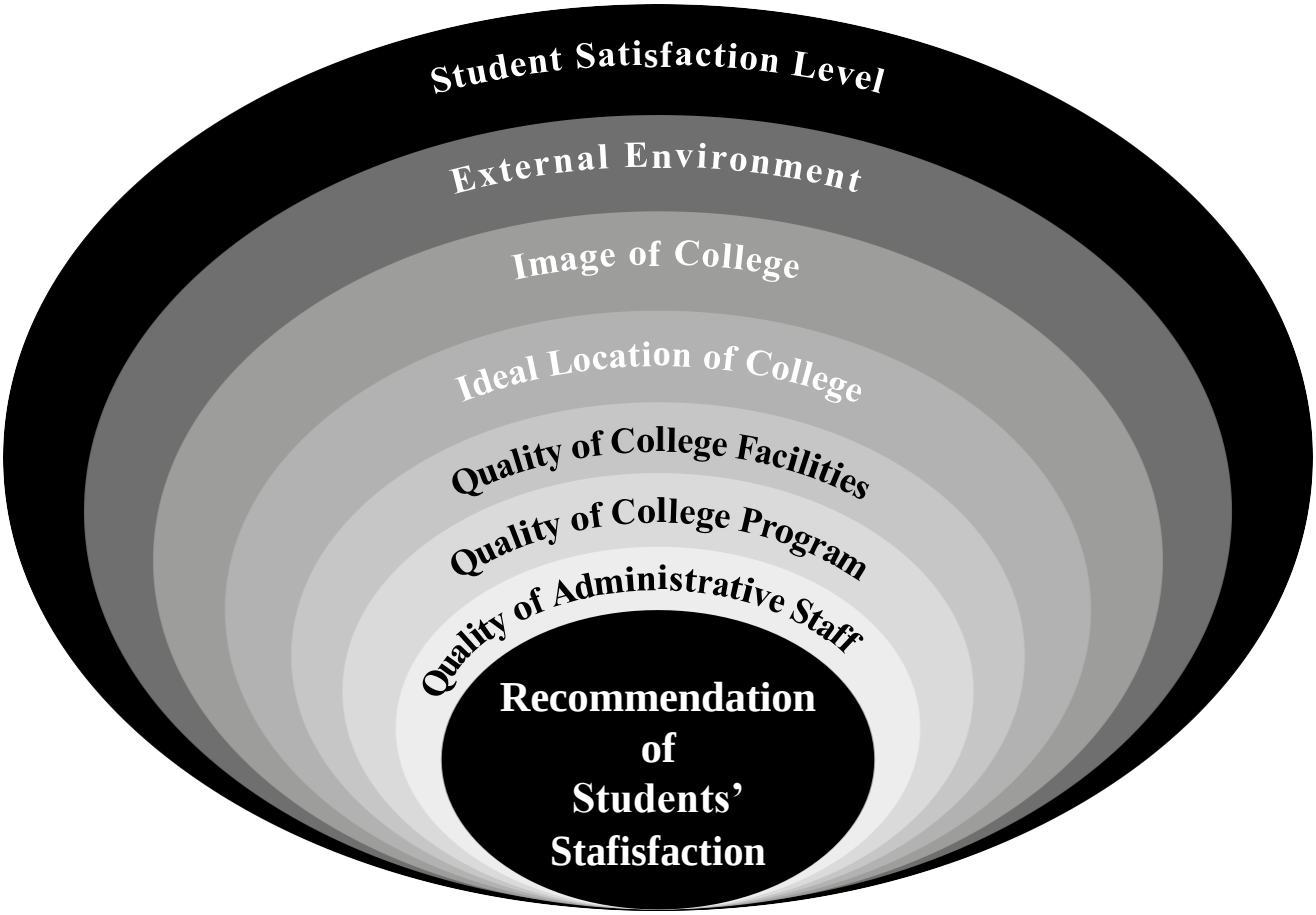


Figure 1. Student Satisfaction Model for Higher Education in Nepal

3. Research Task and Problems

The quantitative research approach was applied in this study because this approach is useful to cover larger sample population generates and statistically robust results that can be derived from quantitative research are good for estimating the probability of success. The research method is the survey study and the research instrument is the service questionnaire. The target population was four hundred and fifty (n=440) where the sample population was two hundred and four (n=204) There were two hundred and four (n= 204) respondents where the boy's population was one hundred and fourteen (N=114) [55.88 %] and girl's population was ninety (n = 90) [41.11 %].

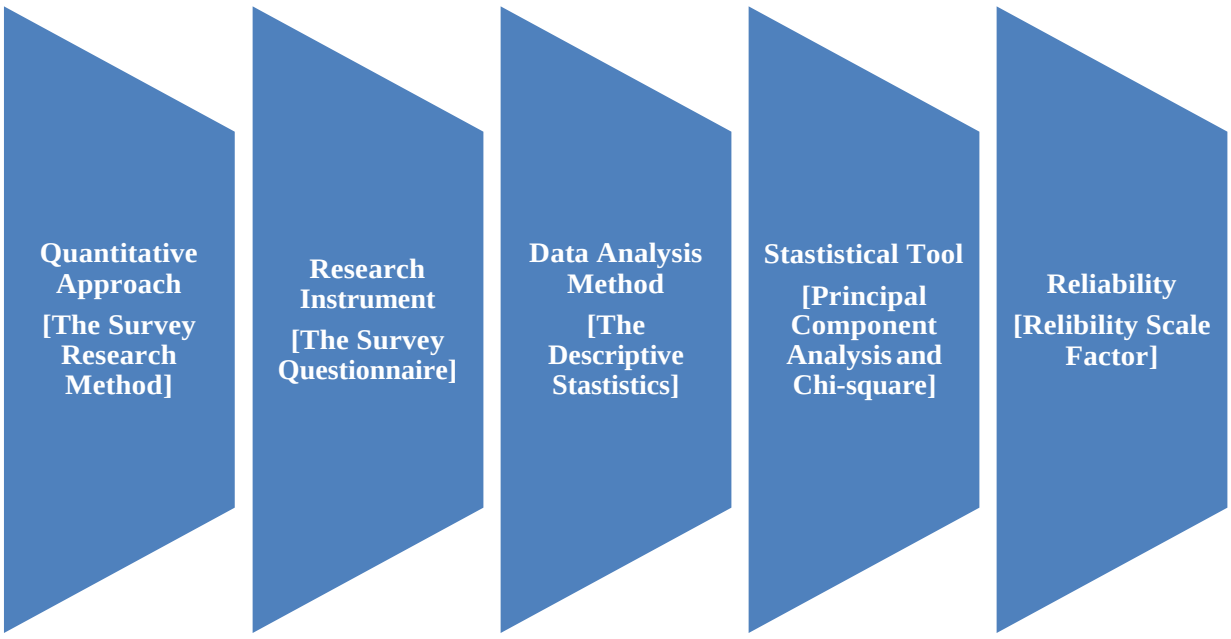
The target population was four hundred and fifty (n = 440). The main research problem will examine the student's intention to recommend to recommend their kith and kin to enrol at higher secondary schools. The first sub problem will examine the student's experiences and opinions at grade 11 and 12 grade

students on academic factor for their intention to recommend their friends/family members/relatives to enrol at OCEM. The second sub problem will examine the student's experiences and opinions of grade 11 and 12 grade students on managerial factors for their intention to recommend their kith and kin at secondary level schools. The third sub problem will examine student's experiences and opinions on college's physical factor for their intention to recommend their kith and kin to enrol at Secondary Level Schools. The fourth sub problem will examine the experiences and opinions on college infrastructure facilities for their recommendation to enrol their kith and kin to enrol at schools where they are currently studying (Cohen, Manion & Morrison, 2011; Tucker, 2013. Saying so, the first main problem and its sub problems have been presented as follows.

1. What are the key influencing factors affecting student's intention to recommend their kith and kin to of grade 11 and 12 in the college?
   - 1.1. What is the impact of academic factor on student's intention to recommend their friends/relatives/ family members to enrol at the college where they are currently studying?
   - 1.2. What is the impact of managerial factor on student's intention to recommend their friends/ relatives/family members to enrol at the college where they are currently studying?
   - 1.3. What is the impact of physical factor on student's intention to recommend their friends/relatives/ family members to enrol at the college where they are currently studying?
   - 1.4. What is the impact of infrastructure factor on student's intention to recommend their friends/ relatives/family members to enrol at the college where they are currently studying?

3. Methods

The survey research design was applied to collect data on student's recommendation to their kith and kin to enrol at the same college because this method is useful to cover a large sample population. The survey research design which is used in this study has been presented below.



Source: Kothari, 2004

Figure 2 Research design of quantitative method

The research of this study mentioned in Figure 1 signifies that quantitative method is embedded the survey research method, research instrument, data analysis method, statistical tools and reliability scale factor. The five point Likert Scales survey questionnaire was used as research instrument to know the experiences and opinions of grade 11 & 12 students. Two hundred and fifteen (N=215) questionnaires were distributed but the respondents returned two hundred and four (N=204) questionnaire at the Research Department of OCEM. The response rate was 94.22 % where the reliability of the data was examined by computing Cronbach's Alpha value (0.70). The descriptive statistics and Binary Logistic Regression Model was applied to find the association between the independent and dependent variables. The structure of Binary Logistic Regression Equation is mentioned as prob(event) is equal to $b0+b_1x_1+b_2x_2+\ldots\ldots\ldots b_nx_n$ (Cohen, Manion & Morrison, 2011 ; Vogt, 2011).

4. Data Analysis

The first, second, third and the fourth sub-problems have examined the students' experiences and opinions on academic facilities, managerial facilities, service facilities and the infrastructure facilities for their intention to recommend their friends/relatives/family members at Oxford College of Engineering and Management in Gaindakot-2, Nawalpur of Nepal. The first, second, third and the fourth instruments were entitled the "the academic factor; the managerial factor, physical and infrastructure factors. The instrument was based on the five point Likert scales, for example, 1 = I strongly disagree, 2 = I disagree, 3 = I do not know, 4 = I agree and 5 = I strongly agree. Factor Reduction Model of Principal Component Analysis has been applied to reduce the number of variables and to extract the new principal components. The descriptive statistics analysis was applied to compute mean and Standard Deviation of each subscales. Later on, the Binary Logistic Regression Model (BLRM) was applied to find the association between dependent and independent variables. Chi-Square Test and Student T-test were applied to find the association between the gender and student's recommendation for the enrolment at OCEM.

4.1 Results

There were four sub problems under the one main problem in this study. The first sub problem has examined the student's opinions and experiences of students for the current quality of academic program. Similarly, the second sub problem has examined the available managerial support on the student's intention to recommend their kith and kin to enrol. Again, the third sub problem has examined the available physical facilities on student's intention to recommend for the enrolment.

4.1 Academic factor

Academic factors are embedded in delivering the practical skills, student centered activities, innovative teaching pedagogy, interactive teaching environment, better internal evaluation system, cooperative teaching environment and using modern educational technology in classroom teaching (Hanssen and Solvoll, 2015; Kreber, 2009).

4.2 Managerial factor

The managerial factors are embedded in the role of faculty members to solve students'' problems, the role of principal to motivate students, the concentration of overall coordinator to address student issues and helpful role of principal. Management of time schedule, teaching resources, availability of faculty

head and high attention of faculty head to solve students' problem (Upreti & Chhetri, 2014). Managerial factors are also signify that student support centre, students' involvement in decision making and also the role of student union in decision making (Hernadewita et al., H. 2019).

4.3. Physical factors

The physical factors are embedded in available sport facilities, neat and clean college environment, library and lab facilities, hygienic canteen, parking facilities, prompt and easy transport facilities, secured college environment and available educational technology resources and other teaching materials (Kärnä & Julin, 2015).

4.4. Infrastructure factors

The infrastructure factors are embedded in the availability of furniture, availability of clean drinking water, availability of educational technology, advanced and technologically equipped classrooms, and a large playground (Sweeney, 2016).

5. Subscales of Principal Components on academic, managerial, physical and infrastructure factors.

5.1 All the subscales were initially examined their reliability by using scale reliability analysis where the accepted value of Cronbach's Alpha was 0.070.

Table 1. The values of mean, SD and Cronbach's Alpha on different subscales

Subscales		Mean	SD	Cronbach's Alpha	P values	Number of variables
ACADEMIC SCALES	Standard lecturers	2.22	0.78	0.70	0.157	10
	Lifelong academic skills	2.24	0.59	0.71	0.014	9
	Strict student centred activities	2.45	0.95	0.75	0.016	8
MANAGERIAL SCALES	Strong faculty management	2.06	0.72	0.76	0.373	10
	Proactive faculty support	2.52	1.04	0.72	0.214	10
PSYCHICAL SCALES	Better lab and library facilities	2.28	0.83	0.70	0.287	9
	Strong security mechanism	2.93	0.83	0.70	0.341	10
	Better college facilities	2.34	0.70	0.71	0.041	10
	College furniture facilities	2.44	0.90	0.74	0.162	11
	Best transportation facilities	2.76	0.99	0.73	0.377	10
INFRASTRUCTURE SCALES	Weak college infrastructure facilities	2.92	1.150	0.70	0.924	11

The results show that the subscales are categorized into four groups where standard lecturers, strict student centred activities and lifelong academic skills are categorized as academic scales (Mean values = 2.22 & 2.24). Similarly, strong faculty management and proactive faculty support are categorized as managerial scales (Mean values = 2.06, 2,52 & 2.45). Again, better lab and library facilities, strong security mechanism, better college facilities, college furniture facilities and better transportation facilities

(Mean = 2.28, 2.93, 2.34, 2.44 & 2.76). Finally, the college buildings are categorized as the infrastructure scale (Mean = 2.92). The results show that the mean value of the subscale "strong faculty management" had been calculated as 2.06 signifying that students showed their disagreement with the statements that faculty members were capable to manage time schedule to complete the course, manage teaching and learning resources and the faculty head was available all the time when students needed some support to solve the problems. Similarly, the mean value of the subscale "standard lecturers" had been calculated as 2.22 signifying that students were somehow disagreed and somehow undecided with the statements that teachers had used modern educational technology during classroom teaching, teachers had followed the international evaluation system and creation of cooperative teaching environment by teachers. Again, the mean value of the subscale "student cantered activities" had been calculated as 2.23 signifying that students were somehow disagreed and somehow undecided with the statements that they had been motivated by their principal, the overall coordinator was always concerned about their issues in their college, the capacity of principal to make rational decision and the supportive roles of principal (Langstrand, Cronemyr & Poksinska, 2014). Furthermore, the results show that the mean value of the subscale" lifelong academic skills" had been calculated 2.24 signifying that students were approximately disagreed with the statements that of delivering the excellent teaching and learning activities, using modern teaching pedagogy, availability of interactive teaching environment, grooming student's career path, and using modern technology during classroom teaching at grade 11 &12 class at OCEM. Similarly, the mean value of the subscale "better lab and library facilities" had been calculated as 2.28 signifying that students were somehow disagreed and somehow undecided with the statements that library facilities were helpful and available on time. Additionally, the mean value of the subscale "better college environment and facilities" had been calculated as 2.34 signifying that students had showed their disagreement with the statements that of the books were available when they needed, maintaining the neat and clean college environment; hygienic and satisfactory service of canteen and availability of sufficient parking lane (Insch & Sun, 2013). The next mean value of the subscale "college physical facilities" had been calculated as 2.44 signifying that students were somehow disagreed and somehow undecided with the statements that college had sufficient furniture, sufficient clean drinking water and in college, availability of the technologically equipped classrooms at OCEM (Yusoff, McLeay and Woodruffe-Burton, 2015). Again, the mean value of the subscale "proactive faculty support" had been calculated as 2.52 signifying that students were somehow disagreed and somhow undecided with the statements that faculty members listened their problems and solved on time. Again, the mean value of the ninth subscale "best transportation system" had been calculated as 2.76 signifying that students were approximately agreed with the statements that the punctuality of transport, reasonable cost and comfortable transport system. Again, the mean value of the subscale "strong security environment" had been calculated as 2.93 signifying that students were agreed with the statements that they were satisfied with the college security concern. Finally, the mean value of the subscale "weak college infrastructure facilities" had been calculated as 2.92 signifying that students were approximately agreed with that statements that collage building was safe, had sufficient space, and technologically equipped administrative buildings in OCEM (Quality Improvement Based on a Process Management Approach, with a Focus on University Student Satisfaction, 2016). The overall mean values notified that the mean values ranged from 2.06 to 2.92 signifying that students were higher

than the disagreed to natural to recommend their kith and kin to enrol at OCEM. The results show that the mean score of the male student of the subscale strong faculty management (M = 2.10, SD = .80) do not statistically significantly differ [t (202) = .893, p = 0.373 from that of the female students on the same variable (M = 2.01, SD = .60). Similarly, the mean score of the male students of the subscale standard lecturers (M = 2.29, SD = 0.85) did not differ statistically significantly [t (202) = 1.419, p = 0.157 from that of the female students on the same variable (M = 2.13 SD = 0.67). But, the mean score for the male students on the subscale student cantered activities (M = 2.36, SD = 0.87) is statistically significantly higher [t (200.80) = 2.605, p = .012] from that of the female student on the same variable (M = 2.06, SD = 0.71, Cohen's d = 0.37) signifying that boys had have more intended to recommend their kith and kin to enrol at OCEM than girls. The results further show that the mean score for the male students (n=116) on the subscale lifelong academic skills (M = 2.33, SD = 0.60) is statistically significantly higher [t (194.45) = 2.505, p = .013] than that of the female students (n=88) on the same variable (M = 2.12, SD = 0.56, Cohen's d 0.36) signifying that male students had have high intention to recommend their kith and kin for the enrolment at OCEM than the female students. Moreover, the mean score of the male students of the subscale better lab and library facilities (M = 2.33, SD = .82) do not statistically significantly lower [t (202) = 1.068, p = 0.287 than that of the female students on the same variable (M = 2.21, SD = .84). Again, the mean score of the male students of the subscale better college environment and facilities (M = 2.43, SD = .74) is statistically significantly higher [t (199.72) = 2.102, p = 0.03] from that of the female students on the same variable (M = 2.23, SD = .62), signifying that boys were more intended to recommend their kith and kin for the enrolment where they are currently studying. Additionally, the mean score of the male students of the subscale college physical facilities (M = 2.52, SD = .93) do not statistically significantly differ [t (202) = 1.405, p = 0.162] than that of the female students on the same variable (M = 2.34, SD = .85). Again, the mean score for the male students on the subscale proactive faculty support (M = 2.60, SD = 1.05) did not differ statistically significantly [t (202) = 1.245, p = .214] from that of the female student on the same variable (M = 2.42, SD = 1.01). Again, the mean score of the male students of the subscale better transportation system (M = 2.81, SD = 1.03) do not statistically significantly differ [t (202) = .885, p = 0.377 from that of the female students on the same variable (M = 2.69, SD = .95). Again, the mean score for the male students on the subscale college infrastructure facilities (M = 2.91, SD = .80) did not differ statistically significantly [t (202) = -.906, p = 0.656] than that of the female student on the same variable (M = 2.92, SD = .89). Finally, the mean score for the male students on the subscale strong security environment (M = 2.86, SD = 1.14) did not differ statistically significantly [t (202) = -.954, p = .341] from that of the female student on the same variable (M = 3.02, SD = 1.18).

5.1 Results of Chi-Square Test between the location of the existing students and their recommendation to enrol at OCEM.

The results of crosstabulation of different locations of existing students and the students' intention of recommendation to their kith and kin to enrol at OCEM shows that out of 204 sample students, 50 students from campus periphery, 42 students from Eastern Chitwan, 9 students from Western Chitwan and 29 from other location were found positive to recommend their kith and kin. But out of 204 students, 22 students from campus periphery, 22 from Eastern Chitwan, and 15 from Western Chitwan and 14

from other location showed their intention not to recommend their kith and kin to enrol at OCEM. This shows that there is association between different locations of existing students and students' intention for recommendation for the enrolment at OCEM.

Table 3. Chi-Square table of location of existing students at OCEM and their recommendation preference (N=204).

Chi-Square Tests			
	Values	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	8.957	4	0.036
Likelihood Ratio	8.574	4	0.037
Linear-by-Linear Association	1.538	1	.215
N of Valid Cases	204		

The Table 3 provides that the value of Chi-Square is 10.273^{a} and associated significance value is 0.036<0.05. Therefore, the hull hypothesis is rejected, and signifying that there is association between the location of existing students and students' intention to recommend their friends/relatives/family members to study at OCEM.

5.2 Logistic regression Wholesome Model of the significant indicators

Three independent variables were found significance from the whole independent variables of this study. All three significant indicators of student's intention to recommend their friends/family members/ relatives for the enrolment in the same college where they are currently enrolled students were entered into the Binary Regression Model. Only two indicators were found significant for the student's intention to recommend for the enrolment at OCEM. The equation of independent and dependent variable under the Binary Logistic Regression Model is embedded in logit(P) = $b0+b_1x_1+b_2x_2+\ldots\ldots\ldots b_nx_n$ where p is used to represent the odds ratio and the formula of odds ratio[odds = p/1-p i.e. numerators p denotes probability of presence and denominator p is equal to probability of absence(Cohen et al,. 2007).

Table 2. Binary Logistic Regression Wholesome Model of the impact of different factors on the intention of student's recommendation for the enrolment at their own college (N = 204).

Independent variables	**B**	**S. E**	**Wald**	**df**	**Sig.**	**Exp (B)**	**95 % C.I for Exp (B)**	
							Upper	**Lower**
Strict student centred activities	-.342	.158	4.676	1	.032	.710	.521	.968
Better ab and library facilities	.309	.168	3.389	1	.066	1.362	.980	1.891
Weak college infrastructure facilities	-.398	.157	6.934	1	.011	.672	.494	1.891
Constants	-.640	.156	16.913	1	.000	.527		

The Omnibus Tests [Chi-Square = 16.712, df = 3, p =.110 and associated significance level is greater than 0.05, the present model shows a decrease in deviance from the base model because Chi-Square is positive, showing this model is better fit compared the base model. The model summary table shows the values of -2 Log Likehood (243.483), Cox and Snell R^2 and Nagelkerke R^2 [8 % (Cox and Snell) and 11% % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 0.110 > 0.05 is insignificant which is good to support for the regression model fit. The

results show that out of 210, 174 students who initially showed their intention to recommend their kith and kin to enrol at OCEM, this model predicts only 118 students intended to recommend their kith and kin to enrol at OCEM but 46 students intended not to recommend their kith and kin to enrol at OCEM. The results further show that out of 36 students who did not intent to recommend their kith and kin to enrol at OCEM, 11 students intended to recommend their kith and kin to enrol at OCEM (see in the Appendix 1). Thus, it predicts students who intended to recommend their kith and kin to enrol at OCEM with 91.5 percent accuracy and also predicts that students who did not intend to recommend their kith and kin to enrol at OCEM with 35.2 percent accuracy. The results also indicate that the overall percentage of correctness of observed data was 71.5 %. The results show that there is association between students' intention to recommend to their kith and kin to enrol at OCEM and strict student centred activities ($p< 0.05$ with odds ratio .710, B = .352) in the wholesome analysis of Binary Logistic Regression Model indicating the negative experiences on their principal motivational roles, the concerned of the overall coordinator to hear their issues in their college, rational role of their principal to make managerial decision and his helpful roles to them. The current study has supported the previous findings of Calder (2013) because the study of Calder had found that students were found dissatisfied with the strict student centred activities in their college and did not want to recommend their kith and kin. Similarly, the results further reveals that there was significant association between the recommendation of students to their kith and kin to enrol at OCEM and college infrastructure facilities of OCEM ($p< 0.05$ with odds ratio .672, B = -.398) in the wholesome analysis of Binary Logistic Regression Model indicating the negative impact on safety college building in all aspect, sufficient space of their classroom and equipped administrative builds at college. The current study has supported the previous study of Weerasinghe and Fernando (2018) because the study of Weerasinghe and Fernando had also found that students were dissatisfied with the weak infrastructure facilities by which students did not want to recommend their kith and kin to enrol at their existing colleges.

Discussion and Conclusion

The objective of this study was to examine the students' intention to recommend their kith and kin to enrol at OCEM Gaindakot-2 Nawalpur of Nepal. Quantitative research method was used along with the survey study to collect data on students' intention for the current facilities of academic, managerial, physical and quality of college programs. The response rate of the survey questionnaire was 94.22%. The results has concluded that lifelong academic skills, standard and qualified lecturers, student centered activities, strong faculty management, proactice faculty support, better college environment and facilities, punctual transfort facilities, strong security environment, better lab and library facilities, college psychical facilities and college infrastructure facilities as the subscales of this study. The results of the Chi-square show that there is significant association between students' recommendation to their kith and kin and different locals of the college. The results further show that there was association between the intention of existing students' to recommend their kith and kin to enrol at OCEM and student centered activities, better lab and library facilities and college buildings facilities ($p < 0.05$, B = -.342 , .309, -.398). The current study has also supported the previous study of Mullamaa (2017) because the previous study of Mullamaa had found that student's centred activities and better lab and library facilities motivated

college students to recommend their kith and kin in their existing college to study. The findings of the current study has supported the previous findings of Gajic (2011) because Gajic has found that students were found satisfied with the rich infrastructure facility. The Chi-square Test was applied to measure the association between existing students' locations and their intention to recommend their kith and kin to enrol at OCEM. The results show that there is significant relationship between the different locations of students and their intention to recommend for the enrolment at OCEM. The findings of this study is significant for the Department Head, administrative staff and the principal of OCEM to formulate new policies and strategies. It will be also important to other colleges of the same characteristics to know the students' perception to the private colleges in Nawalpur and Chitwan District.

Recommendation

This study recommends that academicians of OCEM need to deliver lifelong academic skills, student-cantered activities and updated lecturer during their classroom teaching. Similarly, the faculty heads need to improve their management activities, quick faculty support to students and supportive college environment and facilities and should apply new educational technology in their classroom teaching. Again, top level management needs to revise the current students' security system for the strong security environment, improve lab and library facilities, to improve college infrastructure facilities and other physical facilities. The future research has to cover the large sample population both private and the public colleges in order to generalize findings for the larger population which makes the future research more valid and transferable in other aspects of factors influencing to student satisfaction in Chitwan District.

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References

Attreya, B. (2018). Consumer Buying Behaviour. Journal of Advances and Scholarly Researches in Allied Education, 15(9), 1-4.

Butt, B. & Rehman, K. (2010). A study examining the students' satisfaction in higher education. Procedia - Social and Behavioral Sciences, 2(2), 5446-5450.

Calder, N. (2013). Mathematics in student-centred inquiry learning: Student engagement. Teachers And Curriculum, 13. doi: 10.15663/tandc.v13i0.15

Cohen, L., Manion, L. and Morrison, K. (2011). Research methods in education. London: Routledge.

Gajic, J. (2011). Measurement of student satisfaction in higher education. Marketing, 42(1), 71-80.

Gruber, T., Fuß, S., Voss, R. and Gläser-Zikuda, M. (2010). Examining student satisfaction with higher education services. International Journal of Public Sector Management, 23(2), 105-123.

Hanssen, T. and Solvoll, G. (2015). The importance of university facilities for student satisfaction at a Norwegian University. Facilities, 33(13/14), 744-759.

Hernadewita et al., H. (2019). PLS-SEM Based Analysis of Service of Learning, Service Quality and Satisfaction of College Student in Polytechnic. International Journal of Mechanical and Production Engineering Research and Development, 9(3), 861-870.

Hossain, M. J. & Islam, M. A. (2012) Understanding perceived service quality and satisfaction: A study of Dhaka University Library, Bangladesh. Performance Measurement and Metrics, 13, 169-182.

Insch, A. and Sun, B. (2013). University students' needs and satisfaction with their host city. Journal of Place Management and Development, 6(3), 178-191.

Kärnä, S. and Julin, P. (2015). A framework for measuring student and staff satisfaction with university campus facilities. Quality Assurance in Education, 23(1), 47-66.

Kreber, C. (2009). Academics' teacher identities, authenticity and pedagogy. Studies in Higher Education, 35(2), 171-194.

Kwun, D. J. W., Ellyn, E. & Choi, Y. (2013) Campus Foodservice Attributes and their Effects on Customer Satisfaction, Image, and Word-of-mouth. Journal of Foodservice Business Res

Langstrand, J., Cronemyr, P. and Poksinska, B. (2014). Practise what you preach: quality of education in education on quality. Total Quality Management & Business Excellence, 26(11-12), 1202-1212.

Mihanović, Z., Batinić, A. and Pavičić, J. (2016). The link between students' satisfaction with faculty, overall students' satisfaction with student life and student performances. Review of Innovation and Competitiveness, 2(1), 37-60.

Mukhtar, U., Ahmed, U., Anwar, S. and Baloch, M.A. (2015). "Factors affecting the service quality of public and private sector universities comparatively: an empirical investigation; Journal of Arts, Science & Commerce; 3(1), 132-142.

Mullamaa, K. (2017). Student centred teaching and motivation. Advances In Social Sciences Research Journal, 4(16). doi: 10.14738/assrj.416.3593

Nogueira, M. (2018). Measuring Academic Life Satisfaction in Portuguese Students. Nursing & Healthcare International Journal, 2(1), 21-25

Prentice, G., Brady, J. and McLaughlin, C. (2018). Education Service Quality, Value and Satisfaction on Student Customer Intentions and Behaviour. DBS Business Review, 2.

Quality Improvement Based on a Process Management Approach, with a Focus on University Student Satisfaction. (2016). Acta Polytechnic a Hungarica, 13(6). http://dx.doi.org/10.12700.

Sahayogee, J. (2019). Best Wishes For First Day of College - Good Luck Messages & Quotes. Retrieved 4 November 2019, from https://bestwishes.imnepal.com/best-wishes/lifestyle/best-wishes-first-day-college-good-luck-messages-status-quotes/

Sweeney, L (2016). A Predictive Model of Student Satisfaction," Irish Journal of Academic Practice: 5(1), p.1-31 (https://arrow.dit.ie/ijap/vol5/iss1/8)

Tucker, B. (2013). Student evaluation to improve the student learning experience: an Australian university case study. Educational Research and Evaluation, 19(7), 615-627.

Uprety, R. and Chhetri, S. (2014). College Culture and Student Satisfaction. Journal of Education and Research, 4(1), 77-92.

Vogt, W. (2011). SAGE quantitative research methods. Los Angeles [Calif.]: SAGE.

Weerasinghe, I. and Fernando, R. (2018). Critical factors affecting students' satisfaction with higher education in Sri Lanka. Quality Assurance in Education, 26(1), 115-130.

Yusoff, M., McLeay, F. and Woodruffe-Burton, H. (2015). Dimensions driving business student satisfaction in higher education. Quality Assurance in Education, 23(1), 86-104.

APPENDIX 1

Observed		Predicted QN17		Percentage Correct
		Intention to recommend	Does not intend to recommend	
QN17	Intention to recommend	168	36	91.5
	Does not intend to recommend	0	11	35.2
Overall Percentage				71.5

The Impact of Information Technology to Make Rational Strategic Decision Making in Educational Institutions in Nepal

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Abstract

The primary objective of this study was to examine the impact of information factors for the rational strategic decision making (RSDM) when information is accessed using technology. In educational institutions. The previous studies reveal that time content, form of information and technology were found influential factors for the appropriate rational strategic decision making. The quantitative method was applied along with the survey study was used as a research method to collect data where the administered survey structured questionnaire was used as a research instrument to collect data. In the first stage, fourteen private and 10 public colleges were selected purposively and then twenty four respondents were selected randomly from the twenty-four colleges. The results show that the proportion of male and female respondent was 79.20 % and 20.8 % respectively and the proportion of private and public college was 58.33 % and 41.66 % respectively. The results indicate that the values of the subscales were found lower than the average mean value signifying the less importance of information factors to make the RSDM. Additionally, the results also highlighted that there was an insignificant association between the value of information, the purity of information, the efficiency of information, the details of information, the quality of information, the advanced technology adopted human resources, the performance of information, the formats of information, the perfectness of the information and the role of information in RSDM ($p > 0.05$). The results further show that the mean score of the private college of the subscale 'purity of the information' was statistically significantly higher from that of the public college. Similarly, the mean score of the private college for the subscale quality of information was statistically significantly lower from that of the public college signifying that private college did not give more importance to quality of information for the impact of RSDM. The implication of this study will be beneficial for the college executives and principals to understand the role of information to make RSDM in educational institutions. The limitation of this research is very limited number of survey respondents which has affected the results of the Binary Logistic Regression Analysis.

Keywords: *Information, rational strategic decision making, subscales, principal components, technology.*

Introduction

An organization behaves as an open system that takes in information, material and energy from the external environment, transforms these resources into knowledge, processes and structures that produce services which are then consumed somewhere in the world. An educational organization uses information strategically to make sense of changes in its setting to create new knowledge for innovation

and to make decision about its course of action (Citroen, 2011). The primary objective of this study is to examine the impact of information factors to make rational decision making in educational institutions. This study will also address the need for more data about the effects of information technology on the strategic decision-making process in educational institutions. The research study of Aharoni, Tihanyi & Connelly (2011) found that strategic rational decision-making processes were positively correlated with the factual and relevant information delivered by the college IT Department. Similarly, the research study of Nutt and Wilson (2010) found that strategic decision making was negatively correlated with the poor technological performance. Moreover, some recent approaches to strategic decision making have concentrated upon the more micro aspects of how college executives think, act, and interpret strategic decisions. The micro approach has been termed the strategy as practice perspective (Szymaniec-Mlicka, 2017). Many studies in strategic management take the position that executives reach strategic decisions based on a structured process of careful consideration of circumstances, alternatives and consequences of the available information which approach is known as a 'rational process. Information on matters such as competition, markets, technologies and trends in the societal environment affecting the organization is used as a basis for the judgement on the implications of feasible alternatives for the decision to be made in such a rational process. It is universally obvious that the use of information contributes to the reduction of uncertainty. However, aspects of the role of information in the decision-making process have got less priority in management research to make a rational strategic decision. For that reason, this study investigates whether this research can add a new viewpoint to this field, specifically to that of the role and value of modern information resources and access as a prerequisite for the structuring of the strategic decision-making process. This study will also observe in detail the use of information during the process of a number of actual recent strategic decisions taken by executives in the educational institutions. The emphasis is on the factors of information for the rational decision-making process, not on the substance or quality of the resulting decisions (Nutt & Wilson, 2010).

2. Literature Review

2.1 Meaning of the information and decision making

Information is an intrinsic component of nearly every activity in the organization so much that its function has become transparent (Choo, 1996, p.329). Without a firm grasp of how it creates, transforms and uses information, an organization would lack the coherent vision to manage and integrate its information processes, information resources and information technologies (Petersen & Laustsen, 2019). Current thinking in management and organization theory recognizes three distinct areas in which the creation and use of information play a strategic role in determining an organization's capacity to make rational strategic decision.

Nutt & Wilson (2010, p.3) state the following statements for the meaning of strategic decision making.

"The term strategic decision making is often used to indicate important or key decisions made in organizations of all types. The term organization includes any collective social, economic or political activity involving a plurality of human effort. Strategic decisions emphasize the social practice of decision making as it is carried out among and between individuals in the organization. When studying decision making, both the organizing of decision activity as a collective phenomenon and the cognitive processes

of individual decision makers take centre stage. Strategic decision making is more than computation carried out to make judgements and choices. Various branches of mathematics can inform us about risk, options, game theory and choice".

The meaning of strategic decision making is embedded to judge and choose the tricks to make key rational decisions to sustain the educational organizations. The strategic decision making is a plan, play, pattern, position and perspective to sustain the organizations in this competitive business era. In the past, sometime, it was defined as a plan, sometimes play, position, and perspective focusing on organizational sustainability for the future sustainability (Nutt & Wilson, 2010).

2.2 A rational approach to decision making

An important theme in research into strategic decision-making concerns the approach that is followed in making a rational decision and the structure of decision making process. In a rational decision-making process, executives have to reach strategic decisions without a prejudiced opinion about the eventual decision and only after a structured process of careful consideration of circumstances, alternative lines of thought and consequences of the decision made. Information on matters are embedded in time, contents, form and technological factors affecting the organization are needed to judge the implications of the feasible alternatives for the decision to be made (Szymaniec-Mlicka, 2017). "First, organizations search for and evaluate information in order to make important decisions. In theory, this choice is to be made rationally, based upon complete information about the organization's goals, feasible alternatives, probable outcomes of these alternatives, and the values of these outcomes to the organization. In practice, rational choice-making is muddled by the pushing of interests among organizational stakeholders, bargaining and negotiation between powerful groups and individuals, the limitations and idiosyncracies of personal choice making, the lack of information, and so on. Despite the complications addressed in earlier paragraph , an organization must keep up at least an impression of rational, reasoned behaviour, both to sustain internal trust, and to preserve external legitimacy" (Lunenburg, 2010, p.8). "The second area of strategic information use is when the organization makes sense of changes and developments in its external environment. Organizations thrive in a dynamic, uncertain world. A dependable supply of materials, resources, and energy must be secured to make rational strategic decision making. Market forces and dynamics modulate the organization's success or failure. The third area of strategic information use is embedded in organizations' creating, organizing and processing information in order to generate new knowledge through organizational learning. New knowledge is then applied to design new products and services, enhance existing offerings, and improve organizational processes" (Citroen, 2010, p.493).

2.3. Information as a factor in strategic decision-making

In management research publications, the role of information in the process of decision-making is seldom recognized, discussed or analyzed as such, probably because management information is considered a production factor that is readily available, and its accessibility is "taken for granted" in many studies on company performance. Although input of information is often mentioned in order to be able to consider parameters such as the business environment, internal and external issues and changing conditions during the decision-making process, information is seldom seen as a determining factor of rational decision

making in educational organizations (Citroen, 2010). As consequences, the characterises of information in strategic management such as the quality, the sources and actual use of available information during the process of strategic decision making are not recognized as important issues (Mishra, Allen & Pearman, 2014).

2.4 Information and communication technology (ICT)

Today computers have surprisingly supported to find applications for practically every business process in the educational institutions, this development has had a great influence on the way college executives need to operate nowadays. If we restrict ourselves to the more strategic issues, the decision-making process has completely changed over the last decade by the way information has become available and travels over communication services that are common now (Citroen, 2010). The potential influence of ICT on strategic decision-making can be summarised as better forecasting accuracy and decision-making time horizon, more unanimous decision-making processes through better internal and external communication and thus being able to conclude an accurate decision-making process . The decision can be postponed if organizations have not sufficient information to make rational strategic making (Marques, Moniz & de Sousa, 2018). There is little research into the use of the Internet as an information source for strategic decision-making. On the use of the Internet as 'decision support information technology for college leaders and executives in both the private and public sector', concludes that "The Internet is used in all levels of management involving a number of functional areas which is perceived by college executives as a decision-support information technology that contributes positively in improving their rational decision making practices in (Elbanna, 2006).

2.5 The role of information in the decision process

The information is so important in this competitive world to make a rational strategic decision making because organizational operations have to cope with high costs, small margins and fixed markets, so management has to be very alert and perform proper analyses on, e.g. educational market developments before decisions can be taken. The educational institutions is more opportunity driven now and can react faster with sufficient information (Citroen, 2010). For each strategic issue decision, the best decision structure can only be obtained when it is clear that all information is available in the proper format and is reliable and can be understood by all stakeholders. College executives comment that after collecting additional information an effort is required for studying and analyzing this additional information. Firsthand information mostly come from consultations with internal staff from the departments involved. Lacking this expertise or in cases where an external opinion is indicated, studies are also often commissioned to external organizations or consultancies. Therefore, it is concluded that both internal and external first hand information is a backbone of the rational strategic decision making (Aharoni, Tihanyi & Connelly, 2011).

2.6 Quality of information for strategic decision-making

The college executives are always in the stress of the characteristics of the quality of the information required by the board. Correct strategic decisions can only be taken on correct and complete information.

One phrase given by one executive "Quality of information means integrity, robustness, able to stand up for scrutiny, but very important is also a guarantee of completeness, wholeness". Or another phrased explored by the next executive: "We rely on well checked, reliable, robust and relevance rated information". Generally, information that arrived 'bottom up' was trusted more than information provided by external sources. If information become available from uncertain in sources or is not reliable at first sight, it is thoroughly scrutinized for its credibility and robustness before being accepted by the departments responsible for supplying information to the board. But even so, executives sometimes double-check information themselves, one reason being that these departments are not always aware of the strategic plans of the board (Citroen, 2010).

3. Research Methodology

Researcher asked a selected group of executives in colleges whether they would be willing to complete the survey questionnaire with recently administered entitled the content, form, technological and time factors of the information to make rational strategic decisions in their colleges. Twenty-four executive level respondents were asked to complete the survey questionnaires to observe in which way they use information during the decision making process. Thirty executive level college administrators were sending the survey questionnaires but twenty-four of them returned which is 80% response rate. Data analysis was based on descriptive statistics along with the Principal Component Analysis. Student's t-Test is used to find out the average differences in decision process in public & private colleges. The Logistic Regression Enter Model was used to find the association between the impact of the information factors and rational decision making in both private and public colleges.

3.1. Fieldwork

The sixteen executives that current researcher sent questionnaires were selected from members of the college board or directors (n=16) who also belonged to the Management, Engineering, Education and Information Technology Departments of the selected colleges, three from Nawalparasi District and thirteen from Chitwan District. The type of college executives that agreed to take part in the research and the functions of the survey questionnaires were either chairman or member of the board/management team or were directly involved in strategic school management.

3.2 Sample Population

The target population was one hundred and ten college executives (N=110) and sample population was twenty-four (n=24) so that the proportion of sample population is (24/110*100), i.e. 21.81%. The gender proportions of the sample were (19/24) 79.20% male executives and five (5/19) female school executives (20.8 %). The proportion of private college was (n/N) 58.33% and public college was 41.66 %.

4. Results

The analysis has focused on the roles of different factors of information to make rational decision in an academic institution. The analysis highlights that the ages of respondent were categorized as (35-35) years (25 %), (35-40) years (12.5 %), (40-45) years (37.5 %) and more than 45 years (25 %). The

results show that respondents from province 3 have 81.25% and rest was from province Gandaki. All the nine Principal Compnents (PCs) were computed via Factor Reduction Model. The analysis has secondly focused on Binary Logistic Regression Model to find the association between the independent and dependent variables.

4.1 The management of information

During the decision-making process, there are two phases in which information is mostly collected and analyzed by the board, the preparation phase and the analysis and review phase. The titles of departments that supply this information to the board can be Corporate Development, Strategy Development, Business Development, & Innovation or the Market Intelligence Group. Furthermore, most business units collect information about their own branches and send summaries of analysed information up to the executive management. "The technical possibilities to define queries have become much easier so that no information specialists and fewer external experts are needed any more to formulate database searches" and also that "The interpretation of data and ensuring the relevancy of information for the executives is now the bottleneck, not the process of searching".

4.1.1 Factor Dimension Method

Principal Component (PC) Method has extracted three different principal components from the first survey instrument. According to the result obtained 76.26 % total variance explained on RSDM, the first PC accounts for 37.32 % total variance explained, the second PC accounts for 23.72 % total variance explained, the third PC accounts for 15.16 % total variance explained. The PCs were named as values of information, purity of information and efficiency of information. Again, the same method extracted two different principal components from the second survey instrument. According to 66.34 % total variance explained, the fourth PC accounts for 42.62 % total variance explained, the fifth PC accounts 23.72 % total variance explained. The PCs were named as importance of details of information and quality of information. Similarly, PCM has extracted two different principal components from the forth survey instrument. According to 77.73 % total variance explained, the sixth PC accounts for 50.68 % total variance explained, the seventh PC accounts for 27.05 % total variance explained. The PCs were named as formats of information and perfectness of information. Again, PCM has extracted two different principal components from the fifth survey instrument. According to 71.61 % total variance explained, the eighth PC accounts for 51.12 % total variance explained, the ninth PC accounts for 20.49 % total variance explained. The PCs were named as advanced technology adapted human resource and availability of advanced technology.

Table 1. Varimax rotated principal components matrix on time, content, form and technological factors of the information for the rational strategic decision making (n = 24).

Independent variables	Loadings		
	1	2	3
VALUE OF INFORMATION			
Currency of the information is crucial for RSDM.	.953		
Relevant of the information is crucial for RSDM.	.855		

Timeliness of the information is crucial RSDM.	.754		
PURITY OF THE INFORMATION			
Sufficient of the information is crucial for RSDM.	.896		
Quality of the information is crucial for RSDM.	.843		
EFFICIENCY OF INFORMATION			
Frequency of the information is crucial for RSDM.			.963
Time period of the information is crucial for RSDM.			.945
DETAILS OF INFORMATION			
Completeness of the information is crucial for RSDM.	.892		
Relevance of the information is crucial for RSDM.	.884		
QUALITY OF INFORMATION			
Performance of the information is crucial for RSDM.		.965	
Scope of the information is crucial for RSDM.		.961	
FORMATS OF INFORMATION			
Presentation of the information is crucial for RSDM.	.928		
Detail of the information is crucial for RSDM	.924		
Media of the information is crucial for RSDM	.923		
Order of the information is crucial for RSDM	.824		
PERFECTNESS OF INFORMATION			
Comparable of the information is crucial for RSDM		.929	
Unambiguous of the information is crucial for RSDM		.887	
Clarity of the information is crucial for RSDM		.835	
ADVANCED TECHNOLOGY ADAPTED HR			
Skill of human resource is crucial for RSDM.	.928		
Use of the technology is crucial for rational strategic decision making RSDM.	.789		
Capacity of the technology is crucial for RSDM	.750		
Knowledge about technology is crucial for RSDM	.689		
Latest version of the technology is crucial for RSDM.	.686		
PERFORMANCE OF TECHNOLOGY			
Speed of the technology is crucial for RSDM		.948	
Durability of the technology is crucial for RSDM		.941	
Availability of the technology is crucial for RSDM		.792	

The results show that the highest loadings were computed as 0.965 and the lowest loadings was 0.728. The total loadings were 28 and total Principle Components were nine.

4.1.2 Subscales of the variables

All the variables were used to obtain a rating that contributes to measurement on a larger scale. Table 2 has presented the mean values, standard deviation, values of Cronbach's Alpha and number of variables in each subscale. Nine subscales were computed from the four main factors, i.e. time factor, content factor, form factor and technology factor of information.

Table 2. Mean, standard deviation and Cronbach's Alpha for the scales of time factors for the rational strategic decision making (n = 24).

Subscales		Mean	SD	Cronbach's Alpha	Number of variables
Time Factor	1. Value of the information	1.34	0.577	0.82	3
	2. Purity of information	1.75	0.807	0.62	2
	3. Efficiency of information	1.70	0.440	0.70	2
Content Factor	4. Details of information	2.70	0.494	0.78	2
	5. Quality of information	1.77	1.20	0.97	2
Form Factor	6. Formats of information	2.08	1.06	.91	4
	7. Perfectness of information	1.58	.549	.72	3
Technology Factor	8. Advanced technology adapted HR	1.85	.641	.92	5
	9. Performance of technology	2.06	.613	.70	3
		Total variables			**26**

The mean values of the three subscales of the time factor are lower than the average mean values signifying that respondents strongly disagreed with the statements of currency of the information is crucial for RSDM, relevants of the information is crucial for RSDM and timeliness of the information is crucial for the RSDM. Similarly, the respondents showed their disagreement with the statements of enough and quality of the information is crucial for the RSDM. Again, the respondents also showed their opinions with the statements of frequency of the information is crucial for RSDM and time period of the information is crucial for RSDM. Comparatively, respondents prioritized purity of information in the first importance and the value of information in the least importance to make rational strategic decision making. The mean values of the two subscales of the content factor are lower than the average mean values (3). The results show that respondents did not give much importance to time factors of information for the rational strategic decision making in educational institutions. The mean values of the details of the information is close to the average mean value signifying that respondents neither agreed nor disagreed with the statements of completeness of the information is crucial for RSDM and relevance of the information is crucial for RSDM. But, the mean value of the quality of information is lower than the average mean value signifying that respondents were dissatisfied with the statements of the performance of the information is crucial for RSDM and scope of the information is crucial for RSDM. The results show that respondents did not give much priority to content factors to make strategic rational decision making in educational institutions. Comparatively, the mean values show that respondents have prioritized details of information in the first rank and the quality of information in the second rank. The mean values of the formats of information is lower than the average value signifying that the respondents disagreed with the statements of detail of the information is crucial for RSDM, order of the information (arrange

in predetermined sequence) is crucial for RSDM, Presentation of the information (narrative, numeric, graphic, sound, animated form etc.) is crucial for RSDM and media of the information (in the form of printed paper documents, video display and other media) is crucial for RSDM. Similarly, the mean value of the perfectness of the information is lower than the formats of information signifying that respondents perceived their opinions between the strongly disagree and disagree with the statements of comparable of the information is crucial for RSDM, unambiguous of the information is crucial for RSDM and clarity of the information is crucial for RSDM. Finally, the mean value of the advanced technology adapted human resource is also lower than the average value signifying that respondents showed their disagreement with the statements of skill of human resource is crucial for RSDM., use of the technology is crucial for rational strategic decision making RSDM, capacity of the technology is crucial for RSDM, knowledge about technology is crucial for RSDM and the latest version of the technology is crucial for RSDM. But the mean value of the performance of the technology is higher than the advanced technology adapted HR and lower than the average mean value signifying that respondents showed their disagreement with the statements of speed of the technology is crucial for RSDM, durability of the technology is crucial for RSDM and availability of the technology is crucial for RSDM.

4.1.3 Results of the independent sample t-Test

Two basic experimental designs were employed to examine differences in two groups (Private College & pubic college).

H_0: There is no significant difference in average percentage of impact of information to make RSDM in educational institutions.

H_1: There is significant difference in average percentage of impact of information to make RSDM in educational institutions.

The results show that the mean score for the private college (n = 14) on the first subscale value of information (M = 1.46, SD = 0 .67) did not differ statistically significantly [t (22) = 1.331, p = 0.197] from that of public college (n = 10) for the same variable (M =1.48, SD = 0.29), hence the null hypothesis is accepted. Similarly, the mean score of the private college of the second subscale purity of the information (M = 1.43, SD = 0.53) is statistically significantly higher [t (11.11) = -.2.472, p = 0.01] than that of the public college (M = 2.27, SD = 0.93), hence H_1 is rejected. Again, the mean score of third subscale for the private college on efficiency of the information (M = 1.63, SD = 0.48) was not statistically significantly different [t (22) = -1.081, p = 0.291] from that of the public college (M = 1.83, SD = 0.35). Similarly, Again, the mean score of the fourth subscale details of information for the private college on the fourth subscale details of the information and growth (M = 1.53, SD = 0.71) did not differ statistically significantly [t (22) = 1.405, p = 0.174] from that of public college for the same variable (M =1.20, SD = .258). Similarly, the mean score of the private college of the fifth subscale quality of information (M = 2.00, SD = 1.01) was statistically significantly lower [t (119.70) = -3.673 p = 0.001] than that of the public college (M =3.70, SD = 1.18) signifying that private college does not give importance to quality of information for the RSDM than the public college. The results show that the mean score for the private college on the sixth subscale formats of information (M = 2.25, SD = 1.13) did not differ statistically significantly [t (22) = .901, p = 0.377] from that of public college for the same variable (M =1.85, SD

= 0.241), hence the null hypothesis is accepted. Similarly, the mean score for the private college on the seventh subscale perfectness of information (M = 1.59, SD = .681) did not differ statistically significantly [t (22) = .123, p = 0.903] from that of public college for the same variable (M =1.56, SD = 0.316), hence the null hypothesis is accepted. Additionally, the results show that the mean score for the private college on the eighth subscale advanced technology adapted human resource (M = 1.81, SD = .778) did not differ statistically significantly differ [t (22) = 0.390, p = 0.700] from that of public college for the same variable (M =1.85, SD = 0.241), hence the null hypothesis is accepted. Similarly, the mean score for the private college on the ninth subscale performance of information (M = 2.16, SD = .448) did not differ statistically significantly [t (22) = .915, p = 0.370] from that of public college for the same variable (M =1.93, SD = 0.798).

4.1.4. Results of Logistic Regression Model

Binary Logistic Regression Model (BLRM) was used to find the effects of the independent variable (the value of information, the purity of information, the efficiency of information, the details of information, the quality of information, the advanced technology adapted human resource) on the dependent variables (the rational strategic decision making).

Table 3. Summary of the independent's predictors of the Wholesome Model of Quantitative findings (n = 24).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)
The value of information	5.194	3.27	2.510	1	.113	180.142
The purity of information	2.334	1.672	1.949	1	.163	10.318
The efficiency of information	5.330	2.907	3.363	1	.067	206.435
The details of information	6.535	5.014	1.699	1	.192	689.025
The quality of information	1.855	1.701	1.190	1	.275	6.394
The advanced technology adapted HR	-12.619	7.593	2.762	1	.097	.000
The performance of technology	-3.457	1.927	3.218	1	.073	.032
The format of information	3.251	2.412	1.817	1	.178	25.820
The perfectness of information	-1.369	1.071	1.634	1	.201	.254
Constant	-6.575	3.473	3.584	1	.058	.001

There were nine basic measurement scales in quantitative result section, but all nine indicators were found insignificant for the rational strategic decision making (see in the table 3). With the Omnibus Tests [Chi-Square = 18.08, df = 9, p =.034 and associated significance level less than 0.05, the present model shows a decrease in deviance from the base model because Chi-Square is positive, showing this model is better fit compared to the base model. The model summary shows the values of -2Log Likelihood (0.000^a), Cox and Snell R^2 and Nagelkerke R^2 [52.90 % % (Cox and Snell) and 100 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 1.00 > 0.05 is insignificant which is good to support for the regression model fit. The classification table shows that out of 24 school leaders 21 showed their opinion on the role of information is important to make rational strategic decision making in educational institutions, this model predicts 3 school leaders showed

their opinions on the role of information is not important to make rational strategic decision making. Thus, it predicts school leaders who showed their opinion for the importance of information to make rational strategic decision in the educational institutions with 100% percent accuracy and predicts 100 percent accuracy of school leaders who said the role of information to make rational strategic decision is not important in educational institutions. The results further show that the overall percentage of correctness of observed data was 100 %. The results show that there was a insignificant association between the value of information, the purity of information, the efficiency of information, the details of information, the quality of information, the advanced technology adapted human resource, the performance of information, the formats of information and the perfectness of the information ($p > 0.05$) and the rational strategic decision making in the wholesome analysis. Due to the insignificant association between the independent variables and independent variable, further analysis of the independent variables was ignored.

5. Discussion and conclusions

The primary objective of this study was to examine the association between the impact of information factors for rational strategic decision making in educational institutions. To fulfil this objective results show that mean score of the private colleges of the second subscale purity of the information is statistically significantly higher than that of the public colleges. Similarly, the mean score of the private colleges of the fifth subscale quality of information was statistically significantly lower than that of the public college signifying that private college does not give importance to quality of information for the impact of RSDM. The results of the nine subscales highlight that details of information have covered the greatest value of mean and the efficiency of information has the lowest mean value signifying that educational executives do not give more attention for the positive role of information factors to make rational strategic decision in educational institutions. Additionally, the results also show that the low mean value of each subscale is lower than the average mean value (3) signifying that there is no impact of information to make rational strategic decision is in educational institutions. The results confirmed that there was an insignificant association between the factors value of information, the purity of information, the efficiency of information, the details of information, the quality of information, the advanced technology adapted human resource, the performance of information, the formats of information and the perfectness of the information ($p > 0.05$) and the rational strategic decision making in the wholesome analysis. This study did not support the studies of Frishammar (2003); Citroen (2011) and Szymaniec-Mlicka (2017) because all three previous studies had concluded that there was significant association between the time, content, form and technology factors of information and the rational strategic decision making. The results are somehow surprising because not a single independent variable had significant association with the impact of information in rational decision making. The results of the study provide new information on the specific knowledge of information on how to improve decision-making efficiency and effectiveness at each stage of the strategic decision process in educational institutions.

The limitations of this study are very small sample size and limited number of the survey instruments used in this study. The findings of this study cannot be generalized in the similar situations because the number of sample size was very small which would be the possible reason for insignificant association between the independent variables and dependent variable. The implication of this study will be beneficial for the

college executives and college principals to understand the importance of information to make rational strategic decision making. It was learnt that a big sample population and a mixed methods approach would be better for the future research studies. More importantly, there are very limited empirical research on the impact of the information factors to make rational strategic decision making. It is recommended that future research needs to focus on the impact of the information factors to make rational strategic decision in educational institutions in Nepal. The study of the impact of information technology to make rational strategic decision making in educational institutions in Nepal is imperative on large population in Nepal to foreground the limitation of this research work.

References

Aharoni, Y., Tihanyi, L., & Connelly, B. (2011). Managerial decision-making in international business: A forty-five-year retrospective. *Journal of World Business, 46*(2), 135-142.

Chapple, J. (2015). Mission accomplished? School mission statements in NZ and Japan: what they reveal and conceal. *Asia Pacific Education Review*, *16*(1), 137-147.

Choo, C. (1996). The knowing organization: How organizations use information to construct meaning, create knowledge and make decisions. *International Journal of Information Management*, *16*(5), 329-340.

Citroen, C. (2011). The role of information in strategic decision-making. *International Journal of Information Management, 31*(6), 493-501. doi: 10.1016/j.ijinfomgt.2011.02.005

Elbanna, S. (2006). Strategic decision-making: Process perspectives. *International Journal of Management Reviews, 8*(1), 1-20.

Frishammar, J. (2003). Information use in strategic decision making. *Management Decision*, *41*(4), 318-326.

Lunenburg, F. (2010). Decision Making Process. *National Forum of Educational Administration and Supervision Journal*, *27*(4), 1-12. Retrieved from http://file:///C:/Users/USER/Downloads/Documents/Lunenburg,%20Fred%20C.%20The%20Decision%20Making%20Process%20NFEASJ%20V27%20N4%202010.pdf.

Marques, C., Moniz, S., & de Sousa, J. (2018). Strategic decision-making in the pharmaceutical industry: A unified decision-making framework. *Computers & Chemical Engineering, 119*, 171-189.

Matarazzo, J. (1998). The knowing organization: How organizations use information to construct meaning, create knowledge, and make decisions. *The Journal of Academic Librarianship*, *24*(6), 492-493.

Nutt, P., & Wilson, D. (2010). *Handbook of decision making*. Chichester: John Wiley.

Petersen, M., & Laustsen, L. (2019). Dominant leaders and the political psychology of followership. *Current Opinion in Psychology, 33*, 136-141. doi: 10.1016/j.copsyc.2019.07.005

Szymaniec-Mlicka, K. (2017). The decision-making process in public healthcare entities – identification of the decision-making process type. *Management*, *21*(1), 191-204.

Original Article

Factors Influencing Customer Satisfaction in Buddha Air, Bharatpur Chitwan

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Abstract

The primary purpose of this study was to examine the customer satisfaction on quality and price of the products, customer management and employees' behaviour of Buddha Air at Bharatpur, Chitwan. The survey study was used as research method and the survey questionnaire was used as the research instrument to collect data in this study. One hundred and eighty-five respondents had been selected randomly where one hundred and eight was male population (58.37 %) and seventy-six was female population (41.63 %). The response rate was 92.5%. The Factor Reduction Method via Principal Component Analysis was applied to find the relationship between the dependent variable and the independent variables. The results show that there was significant association between customer satisfaction and strict flight schedule and long security checking process, fluctuation in ticket price, employee motivation skills and politeness, customer centered strategy and positive behaviour of employees and adequate facilities and proper customer management skills ($p < 0.05$). The results further show that customers were found dissatisfied with the current ticket prices, service quality, employee's behaviour and customer relationship management practices in Buddha Air, Bharatpur, Chitwan, Nepal. The previous studies reveal that customer satisfaction is embedded in effective and efficient customer management, high quality product, better customer relationship management and politeness of employees' behaviour. The implication of this study will be beneficial for the board members of the company executive level of Buddha Air to formulate new customer-centered strategies and also be useful for the branch managers of Buddha Air all over the country to improve their managerial skills and to penerate in new market.

Keyword: *Customer satisfaction, the survey respondents, Principal Component Analysis, customer management.*

1. Introduction

In Nepal, the airlines history has begun since 1958 as the first airline named Royal Nepal Airlines based on Tribhuvan International Airport, Kathmandu. It's been long time since the airlines facilities has been competing with prices and service quality to win the heart of customers. It is obvious that, customer satisfaction is the key measure of products and services quality to meet the customers' expectation. Buddha Air Pvt. Ltd is a private air travel company founded on 23 April 1996. It is the best domestic airline company of the nation. It has over 13 domestic and more than two international destinations. It has facility to operate the famous for the Everest Experience Flight. It is in the process of further expansion in international sectors. After 20 years of dedicated non-stop service, more than 100,000 flight hours logged in with over 10 million passengers flown to thirteen destinations with permanent runways in the country, Buddha Air today is the largest domestic air travel operator in Nepal employing more than 900 experienced professionals ("Buddha Air",2018).

The main office of this airline is based on Jawalakhel, Lalitpur in Nepal. This study intends to study service quality, price, customer management and employees' behaviour related to customer satisfaction (Fripp, 2018). The primary objective of this study was to examine the customer satisfaction at Buddha Airline. The secondary objectives were to examine the level of customers' satisfaction level in relation to price of ticket, the service quality, customer management and in relation to employee behaviour at Buddha Air. The previous studies reveal that customer relationship management (CRM) had become the most important influence on customer satisfaction. CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments (Boettger, 2019). This study is for providing a greater understanding in customers' needs through the service quality, price of the products, employees' behaviour and customer relationship management factors. Customers are the king of every business. Satisfied customers are the important property of the business enterprises. Conversely, dissatisfied customers are the main reason of business risk (Khashab, Gulliver and Ayoubi, 2018). There is a tough competition among airline industries. Airlines should satisfy customers to survive in the competitive airline market. Customer service shouldn't just be a department, it should be the entire company services including the quality, brand image and customer loyalty (Study on Citilink Airline Passengers, 2019). Hence, the results obtained from this research might be helpful for management in making plans for the improvement in services quality. The previous study shows that a majority of the customers were not satisfied with service provided by different Airlines. So, they are diversified to other means of transportation. Transport and the financial status of the airlines has seemed in degrading trends (Aboulafia & Michaels, 2018). Therefore, Airline industries have to focus on customer center strategies.

2. Research Design

This study used quantitative methods design. During the quantitative phase, the survey method was used to collect data from the respondents because this method can cover the larger number of respondents which ensures the generalization of the findings (Kothari, 2004).

Ethical consideration

Ethical approval was obtained from the administration of Buddha Airs and other ethical considerations were also fulfilled during this study. Research Department of OCEM has provided permission to go to Buddha Air for the data collection along with the acceptance letter of Buddha Air to collect data with the customers.

Quantitative phase

A questionnaire was developed using the survey instruments from previous research studies in the area of customer satisfaction. The questionnaire was piloted with five pediatric customers. The questionnaire was designed to examine the experiences and opinions of respondents and their demographic information.

Sampling Design

The target population of this study was five hundred (n= 500) where the sample population was one hundred and eighty-five (n = 185). Two hundred and twenty questionnaires were dispatched but only the one hundred and eighty five questionnaires were returned by the returnees. The response rate was 84.09 %. Among one hundred and eighty-five respondents, one hundred and five (n = 105) respondent was female population and eighty (n = 80) was male population.

Method of Data Collection

The questionnaire was circulated to all 185 customers registered with the Buddha Air, Bharatpur Chitwan. The customers were all registered in Buddha Air's Webpage before two years ago. A link to the web-based questionnaire was sent via email to all paediatric customers in Buddha Air. A reminder email was circulated 2 weeks later. The responses were anonymous and could not be linked to the email address.

Processing and Analyzing of Data

The survey data were analysed using simple descriptive statistics and correlations. Principal compnent analysis via Factor Reduction Model was applied to find the new principal components (PCs). Again, Linear Regression Model was used to find the correlation between the selction of Buddha Air and gender of the population.

3. Results

The data analysis was based on descriptive statistics analysis. The analysis is embedded in the subscales, Chi-square test, categorical variables of the Linear Regression Model and the principal components.

3.1 Data Analysis

Factor analysis was used to reduce the large number of variables to a small number of components. The demand for the air services has increased manifold in the past some years. Buddha Air as an air service provider was examined for factors influencing customer satisfaction against its current ticket prices, service quality, employees' behaviour and customer management. This study undertakes a survey of 185 service users of Buddha Air who fly from Bharatpur to Kathmandu and vice versa. Respondents were contacted via telephone and were asked to rate forty-eight statements on their perceptions and experiences about the Airline's service quality, employee's behaviour, customer management strategy and ticket's prices on a 5-point Likert scale [Completely dissatisfied =1, Dissatisfied =2, I do not know =3, Satisfied =4 and completely satisfied =5]. The concept of data reduction is based on the fact that few components explain most of the variance in dependent variable (Factors influencing customer's satisfaction) (Pandya et al., 2018). KMO and Bartlett's Test was used to ensure the sample sufficiency for the further analysis of the PCs where the minimum value of KMO was fixed < 0.60. Previous study had sometimes relied heavily on a single-item indicator of customer's' satisfaction and preference which maximizes the possibility of measurement error (e.g. Watt &Richardson, 2007). To construct this requirement, this study has chosen to work with more encompassing constructs, measured by multiple items. To identify these underlying themes in the questionnaire, a Principal Component Analysis (PCA) was run. Subsequently, an Exploratory Factor Analysis (EFA) with Varimax rotation was carried out to refine and interpret these components. The reliability of the data was checked by computing scale analysis where the minimum value of the Cronbach's Alpha was considered over 0.60 (Cohen et al. 2011).

Eigenvalues, the screen plot and theoretical interpretability were also used to make a decision on the number of factors. A factor loading of at least [0.40] was taken as cut-off point to incorporate a specific item as an indicator for an understanding motive. To explore the relation between customers' satisfaction and personal variables, descriptive statistics and cross tabulations were computed (Pandya, Bulsari & Sinha, 2018). Descriptive statistics was further employed to analyze customers' ' motives (satisfaction) for current service facilities, prices of the tickets, customer management strategy and employee's behaviour

towards customer's satisfaction at Buddha Air. Again, the Chi-square Test was computed to examine the association between customer satisfaction and categorical variables (gender, average family income level, profession of the customers, main reasons of choosing Buddha Air, different religions of the customers). A stepwise strategy was followed (Easterby-Smith, Thorpe & Jackson, 2012). Secondly, a Binary Logistic Regression Model was used to assess the impact of the predictor and control variables on all motives of customer's satisfaction. Both significant levels and effective sizes were considered using Cohen's d cut-off points (Cohen, Manion, & Morrison, 2011). Finally, the Wholesome Binary Logistic Regression Model was applied to find the association between all the significant indicators and customer satisfaction.

3.2. Quality Factor

The first research instrument was examined by the first survey instrument where respondents were asked to share their experiences and perceptions on environmental cleanness, noise pollution, customers waiting place, easy and comfortable seats, quality of drinking water, facility of using Visa/Master/Debit/ Credit Card to purchase tickets, feeling of customers' facilities, money exchange facility, punctuality of flights, adequate overhead facilities and safety of airline flights.

Table 1. Varimax rotated principal components matrix on the quality of services for the customers satisfaction before and after service of Buddha Airs (N = 185).

Variables	Loadings		
	1	2	3
PROPER SHOPPING ENVIRONMENT AND CUSTOMER MANAGEMENT			
There is no sound pollution in the location of Buddha Airs.	.700		
The seats are comfortable and easy.	.689		
The is sufficient waiting place for customers in Buddha Air's Office	.655		
The environment is neat and clean in Buddha Airs.	.614		
There is no sound pollution while taking off Buddha Air.	.424		
QUALITY SERVICES			
Buddha Air Service accepts Visa and other online payment cards.		.807	
The food and beverage are quality and satisfactory.		.748	
I feel comfortable service of Buddha Airs.		.645	
STRICT FLIGHT SCHEDULE AND SECURITY			
Buddha Air is punctual in its schedule.			.826
The Airlines is safety than other Airlines.			.762
The is the facility of money exchange around the counter.			.623
The Airlines has overhead luggage facility.			.591

The Principal Component Model extracted three PCs where the first PC has five variables, the second PC has three variables and the third PC has four variables. The variances of the first, second, and third account were 26.05 %, 13.43 %, and 10.80 % respectively [KMO = 0.0678]. The first, second, and third PCs were named as the proper shopping environment, quality of services and strict flight schedule and security respectively in Buddha Air.

Table 2. Mean, standard deviation and Cronbach's Alpha for the scales for quality of services of Buddha Airs for customers' satisfaction (N=185).

Subscales	Mean	SD	Cronbach's Alpha
Proper shopping environment and customer management	3.41	0.69	0.65
Quality of services	3.16	0.81	0.70
High level facilities and security	3.37	0.72	0,60

The mean values of three subscales were 3.41, 3.16, and 3.37 respectively. The overall mean values of the first, second and third subscales had been seen more than the average value signifying that customers were approximately agreed with the statements that proper shopping environment and customer management, service quality and strict flight schedule and security were satisfactory in Buddha Air (see in detail in Table 2).

Table 3. Binary logistic regression model of the quality of services for customers' satisfaction (N = 185).

Independent Variables	B	S. E.	Wald	df	Sig.	Exp (B)	95% C.I for Exp (B)	
							Upper	Lower
Proper shopping Env. and customer management	-.457	.242	3.565	1	0.059	.633	1.018	.394
Quality of services	-.391	.323	1.459	1	0.227	.677	1.275	.359
Strict flight schedule and security	-1.621	.346	21.833	1	.000	.198	.390	.100
Constant	-3.384	.491	47.424	1	.000	.034		

With the Omnibus Tests [Chi-Square = 36.273, df = 3, p = .001] and associated significance level less than 0.05, the present model shows a decrease in deviance in prediction from the base model because the value of Chi-Square is positive. So that this model is better fit compared the base model. The model summary table shows the values of -2Log Likehood, Cox and Snell R^2 and Nagelkerke R^2 [17.80 % (Cox and Snell) and 38.80 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that $p = 0.129 > 0.05$ is insignificant which is good to support for the regression model fit. Out of 176 customers who chose the first option [satisfied with the service of Buddha Air], this model predicts 163 customers showed their satisfaction for Buddha Air services and 13 customers showed their dissatisfaction for the Airline services. Again, out of 9 customers who showed their dissatisfaction for Buddha Air services, the results show that 5 customers were found dissatisfied and 4 customers were found satisfied for the services of Buddha Airs. Thus, it predicts that customers who showed their satisfaction for the services with 97.00 percent accuracy and the customers who showed their dissatisfaction for the airline services was 23.5 percentage accuracy. The classification table shows that the overall percentage of correct prediction was 90.3 percent. The results show that there was significant association between strict flight schedule and security in and customers' satisfaction ($p < 0.05$ with odds ratio = $.198 < 1$, $B = -1.621 < 0$) indicating a negative impact on customers' satisfaction. When the independent variable high-level facilities and security increases one unit, customer satisfaction can be predicated to decrease around 0.198 times if other variables are controlled. This study has supported the previous findings of de Lange, Samoilovich & van der Rhee (2013) because both the current and the previous studies de Lange et al (2013) have found that airlines' customers were dissatisfied with strict flight schedule and lengthy security processes.

4.2. Price factor

The second research instrument intends to examine the perceptions and experiences of customers on the price level of Buddha Air's ticket and their satisfaction level. The survey instrument was embedded in the price fluctuation, the comparison of ticket's price, facility and discount issues of online ticket buying and selling, and reasonable price of air tickets (Chow, 2014).

Table 4. Varimax rotated principal components matrix on the price of Buddha Air ticket for the customers satisfaction (N = 185).

Variables	Loadings	
	1	2
Price of Tickets		
Online ticket purchase price of Buddha Air is similar with other airlines.	.859	
The cost price of ticket in Buddha Air is equal to other Air lines.	.803	
The price of the ticket in earlier booking is cheaper in Buddha Airs.	.487	
Fluaction in Ticket Price		
There is price fluctuation in Buddha Airs.		.865
The ticket price is consistence in Buddha Airs.		.682
The ticket price of the Buddha Air is cheaper.		.525
The ticket price in Buddha Air is constant.		.520

The Principal Component Model extracted two PCs where the first PC has three variables, and the second PC has four variables. The variances of the first and second, Principal Components account for 30.37% and 14.85% respectively [KMO = 0.0658]. The first and second PCs were named as the price of ticket and nature of ticket price respectively.

Table 5. Mean, standard deviation and Cronbach's Alpha for the scales for the price of Buddha Air ticket for the customers satisfaction (N=185).

Subscales	Mean	SD	Cronbach's Alpha
Price of tickets	2.49	.086	0.65
Fluctuation in ticket price	2.93	0.60	0.60

The mean values of two subscales were 2.49 and 2.93 respectively. The overall mean values of the first and second subscales had been lower than the average value signifying that customers were not satisfied with the statements that the price of the ticket in Buddha Air was cheaper and the fluctuations in ticket price occur time and again (see in detail in Table 5).

Table 6. Binary logistic regression model of the price of Buddha Air ticket for the customers' satisfaction (N = 185).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)	95% C.I for Exp (B)	
							Upper	Lower
Prices of tickets	-.154	.259	.355	1	.552	.857	1.423	.517
Fluctuation in ticket price	-.747	.252	8.776	1	.003	.474	.777	.289
Constant	.304	-2.526	68.880	1	.000	.080		

The Omnibus Tests [Chi-Square = 9.295, df = 2, p = .010] and associated significance level less than 0.05,

the present model shows a decrease in deviance in prediction from the base model because the value of Chi-Square is positive. So this model is better fit compared to the base model. The model summary table shows the values of -2Log Likehood, Cox and Snell R^2 and Nagelkerke R^2 [4.90 % (Cox and Snell) and 10.70 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that $p = 0.268 > 0.05$ is insignificant which is good to support for the regression model fit. Out of 185 customers who chose the first option [satisfied with the price of Buddha Air], this model predicts 168 customers showed their satisfaction for the ticket price of Buddha Airs and 17 customers showed their dissatisfaction for the price of Airline services. Thus, it predicts that customers who showed their satisfaction for the price of tickets with 100.00 percent accuracy. The results show that the overall percentage of correct prediction is 90.8 percent. The results show that there was significant association between fluctuations in tickets' price and customers' satisfaction ($p < 0.05$ with odds ratio = .474 <1, B = -747 < 0) indicating a negative impact of ticket price on customers' satisfaction in Buddha Air Service. When the independent variable fluctuation in tickets' price increases one unit, customer satisfaction can be predicated to decrease around 0.474 times if other variables are controlled. This study has supported the previous study of Aligholi (2014) because this study has also highlighted that fluctuation in tickets' price made customers dissatisfied which is also highlighted by this study.

3.3. Service quality of the employees of Buddha Airs

The third research instrument intended to examine the association between employees behaviour and customers satisfaction in Buddha Air. The third survey instrument was embedded in the polite behaviour of Air hostess, employees' politeness to customers, motivation of employees to deliver service to customers, services for entertainment, use of new technological tools, cooperative behaviour of employees, satisfaction of the services delivered by Buddha Airs, realization of mistakes by employees, service of ATM around Airline counters, fulfillment of employees' responsibilities on time, customer centered employees and polite behaviour of pilots.

Table 7. Varimax rotated principal components matrix on the employees' behaviour on the customers satisfaction (N = 185).

Variables	Loadings			
	1	2	3	4
SERVICE QUALITY AND EMPLOYEE'S BEHAVIOUR				
Employees are polite in the area of Buddha Air' counter	.841			
Employees are highly interested to provide services to customers.	.667			
The service quality of Buddha Airs is satisfactory.	.620			
EMPLOYEE MISTAKES AND ENTERTAINMENT				
There are entertainment services in Buddha Airs.		.721		
Employees of Buddha Airs realize their mistakes while dealing.		.630		
Employees are customer centred in Buddha Airs.		.594		
PILOT BEHAVIOUR AND EMPLOYEE COOPERATION				
Buddha Air has used new technological tools in its services.			.831	
The employees of Buddha Airs are cooperative and helpful.			.603	
The pilots are polite while dealing with customers.			.501	

COMPETENT EMPLOYEES AND ATM SERVICE FACILITY				
18.9. There is ATM service around the ticket counter.				.851
18.10. The employees fulfil their assigned duties on time.				.739
18.1. The behaviour of Air Hostess is polite and helpful				.523

The Principal Component Model extracted four PCs where the first, second, third and the fourth PC have three variables each. The variances of the first, second, third and the fourth Principal Components account for 34.88 %, 12.85 %, 10 % and 9 % respectively [KMO = 0.721]. The first and second, third and the fourth PCs were named as employee motivation and politeness, customer centered strategy and positive attitude of employees, pilot behaviour and employees' cooperation and competent employees and service facilities respectively.

Table 8. Mean, standard deviation and Cronbach's Alpha for the scales for employees' behaviour for the customers satisfaction (N=185).

Subscales	Mean	SD	Cronbach's Alpha
Service quality and employee's behaviour	2.41	0.78	0.67
Employee mistakes and entertainment facilities	2.74	.080	0.60
Pilot behaviour and employees' cooperation	2.66	0.91	0.65
Competent employees and service facilities	2.55	0.86	0.63

The mean values of four subscales were 2.41, 2.74, 2.66 and 2.55 respectively. The overall mean values of the first, second, third and fourth subscales had been seen lower than the average value signifying that customers were approximately dissatisfied with the statements that service quality and employees' behaviour, employee mistakes and entertainment facilities, pilot behaviour and employees' cooperation and competent employees and service facilities from Buddha Air Service (see in details in table 8).

Table 9. Binary logistic regression model of employees' behaviour for customers' satisfaction (N =185).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)	95 % C.I for Exp (B)	
							Upper	Lower
Service quality and employee's behaviour	-.566	.244	5.396	1	.020	.568	.915	.362
Employee mistakes and entertainment facilities	-.649	.302	4.627	1	.031	.523	.944	.289
Pilot behaviour and employees' cooperation	-.307	.267	1.318	1	.251	.736	.1.242	.436
Competent employees and service facilities	.041	.252	0.26	1	.872	1.042	1.708	.635
Constant	-2.631	.323	66.303	1	.000	.072		

The Omnibus Tests [Chi-Square = 14.844, df = 4, p = .005] and associated significance level less than 0.05, the present model shows a decrease in deviance in prediction from the base model because the value of Chi-Square is positive. So that this model is better fit compared the base model. The model summary table shows the values of -2Log Likehood, Cox and Snell R^2 and Nagelkerke R^2 [7.700 % (Cox and Snell) and 16.80 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 0.119 > 0.05 is insignificant which is good to support for the regression model fit. Out of 181 customers who chose the first option [satisfied with the employee behaviour of Buddha Airs], this

model depicts that 176 customers show their satisfaction for Buddha Airs' employees behaviour and 17 customers showed their dissatisfaction for the Airline's employees behaviour. Again, out of 4 customers who showed their dissatisfaction for Buddha Air's employee behaviour, the results show that 4 customers were found dissatisfied for the employee behaviour of Buddha Air. Thus, it predicts that customers who showed their satisfaction for the employee behaviour with 97.60 percent accuracy and the customers who showed their dissatisfaction for the airline services was 0 percentage accuracy. The results show that the overall percentage of correct prediction is 88.60 percent. The results also show that there was significant association between service quality and employees' behaviour and customers' satisfaction ($p < 0.05$ with odds ratio = .568 < 1, B = -.566 < 0) indicating a negative impact on customers' satisfaction. When the independent variable service quality and employee's behaviour increases one unit, customer satisfaction can be predicated to decrease around 0.568 times if other variables are controlled. Similarly, there is significant association between employee mistakes and entertainment facilities and customer's satisfaction ($p < 0.05$ with odds ratio = .523 <1, B = -.649 < 0) indicating a negative impact on customers' satisfaction. Again, when the independent variable customers centered strategy and positive attitude of the employee increases one unit, customer satisfaction can be predicated to decrease around 0.649 times if other variables are controlled. This study supported the research findings of Kattara, Weheba & El-Said (2008) because both studies found that there was positive correlation between service quality, employee's behaviour and customers satisfaction. The previous study had also found that customers were satisfied when they received quality airline services and employees' polite behaviour. Importantly, the previous research had also concluded that employees' behaviours have great effect on overall customer satisfaction regardless of customers' gender, nationality, and purpose of visit, number of visits and length of stay.

3.4. Customer Relationship Management CRM)

The fourth research instrument intended to examine perceptions and experiences of respondents on the customers' management and their satisfaction level at Buddha Air. The fourth survey instrument was embedded in availability of air tickets in each ticket counter, ease of ticket availability, time consuming in check-in and check-out, distance between ticket counter and airline take off destination, facility of ticket cancellation and holding, comparison of Buddha Air with other air services, management of waiting place, and the management of loyalty card. The empirical studies had prioritized the importance of CRM in company business strategy. CRM is an integration of technologies and business processes used to satisfy the needs of a customer during any given interactions. More specifically, CRM involves acquisition. CRM life-cycle follows eight stages which are planning, research, system analysis, design, construction, implementation, maintenance and documentation and adaption (Amoah Mensah, Quaye & Mensah,2018).

Table 10. Varimax rotated principal components matrix on the customer management for the customers satisfaction (N = 185).

Variables	Loadings			
	1	2	3	4
FACILITIES AND CUSTOMER MANAGEMENT				
Buddha Air provides all services on time.	.766			
The facilities of Buddha Airs are satisfactory.	.759			
Employees answer the customers inquiry	.699			

There is proper waiting room management for customers in Buddha.	.490			
FACILITIES TO BUY TICKETS				
The ticket is easily available to customers.		.840		
Tickets are available in each service counter.		.819		
FACILITIES OF TICKET POSTPONE AND CANCELLATION				
There is the facility of ticket postpone.			.831	
There is ticket cancellation facility.			.769	
Ticket counter is close to plane take off area.			.523	
USE OF ADVANCED TECHNOLOGY FOR CUSTOMER MANAGEMENT				
Less time is consumed in check-in and check-out.				.646
Buddha Air is better than other airlines.				.645
There is the facility of Loyalty card in Buddha Air Service.				.500

The Principal Component Model extracted four PCs where the first PC has four variables, the second PC has two variables, the third PC has three variables and the fourth PC has three variables respectively. The variances of the first, second, third and fourth Principal Components account for 40.45%, 20.37%, 15.35% and 14.85% respectively [KMO = 0.0628]. The first, second, third and the fourth PCs were named as 'facility and customer management facilities to buy tickets, facilities to postpone & cancel tickets and use of advanced technology' for customer satisfaction.

Table 11. Mean, standard deviation and Cronbach's Alpha for the scales for employees' behaviour for the customers satisfaction (n=185).

Subscales	Mean	SD	Cronbach's Alpha
Facilities and customer management	2.49	0.73	0.66
Facilities to buy tickets	2.85	1.14	0.76
Facilities of ticket postpone and cancellation	2.59	0.70	0.61
Use of advanced technology for customer management	3.27	0.71	0.60

The mean values of four subscales were 2.49, 2.85, 2.59 and 3.27 respectively. The overall mean values of the first, second, and third subscales had been seen a bit lower than the average value signifying that customers were approximately dissatisfied with the statements that the facilities to buy tickets, and facilities of ticket postpone and cancellation in Buddha Air. But the mean value of the fourth subscales had seemed higher than the average value signifying that customer were approximately satisfied with the technology used to manage customers in Buddha Air (see in detail in table 8).

Table 12. Binary Logistic Regression Model on Customer Satisfaction at Buddha Air (N = 185).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)	95% C.I for Exp (B)	
							Upper	Lower
Facilities and customer management	.700	.347	4.082	1	.043	2.014	3.973	1.021
Facilities to buy tickets	.006	.256	0.001	1	.980	1.006	1.661	.610
Facilities of ticket postpone and cancellation	.682	.371	3.381	1	.066	1.978	4.092	.956
Use of advanced technology for customer management	-.427	.402	1.125	1	.289	.653	1.436	.297
Constant	4.728	1.742	7.369	1	.007	.009		

The Omnibus Tests [Chi-Square = 10.602, df = 4, p = .031] and associated significance level less than 0.05, the present model shows a decrease in deviance in prediction from the base model because the value of Chi-Square is positive. So that this model is better fit compared with the base model. The result of model summary show the values of -2Log Likehood, Cox and Snell R^2 and Nagelkerke R^2 [5.60 % (Cox and Snell) and 12.10 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 0.087 > 0.05 was insignificant which is good to support for the regression model fit. Out of 185 customers who chose the first option [satisfied with the customer management at Buddha Air], this model depicts that 168 customers showed their satisfaction for customer management at Buddha Airs and 17 customers showed their dissatisfaction for the customer management at Buddha Airline. Thus, it shows that customers who showed their satisfaction for the customer management at Buddha Air with 100.00 percent accuracy. The results show that the overall percentage of correct prediction is 90.80 percent. The results also show that there is significant association between facilities and customer management and customers' satisfaction (p < 0.05 with odds ratio = B = .700 > 0) indicating a positive impact on customers' satisfaction. When the independent variable facilities and customer management increases one unit, customer satisfaction can be predicated to increase around 2.014 times if other variables are controlled. This study has supported the study of Hui, Zhang & Zheng (2013) because Hui et al. (2013) had also found that facilities and customer management of communal facilities was the most crucial dimension with regard to the overall customer satisfaction and communication efficiency and efficacious promotion events are also important for maintaining customer satisfaction.

Binary Logistic Wholesome Model on Customer Satisfaction at Buddha Air

All the significant indicators selecting from each Binary Logistic Regression Tables (see in the table 3, 6, 9.12) were entered the Binary Logistic Regression Model. The main purpose of this analysis was to find the Wholesome Model on customer satisfaction at Buddha Air.

Table 13. Binary Logistic Wholesome Model on Customer Satisfaction at Buddha Air (N = 185).

Independent variables	B	S. E.	Wald	df	Sig.	Exp (B)	95 % C.I for Exp (B)	
							Upper	Lower
Fluctuation in ticket price	-.582	.289	4.046	1	.044	.599	.985	.317
Employee motivation and politeness	-.451	.245	3.396	1	.065	.637	.1.029	.394
Customer centered strategy and positive employees	-.278	.337	.684	1	.408	.757	1.464	.392
Facilities and customer management	.258	.319	.655	1	.418	1.295	2.421	.693
Strict flight schedule and security	-1.512	.397	14.469	1	.000	.221	.481	.101
Constant	-3.609	.568	40.411	1	.000	.027		

The Omnibus Tests [Chi-Square = 39.888, df = 5, p = .001] and associated significance level less than 0.05, the present model shows a decrease in deviance in prediction from the base model because the value of Chi-Square is positive. So that this model is better fit compared with the base model. The model summary table shows the values of -2Log Likehood, Cox and Snell R^2 and Nagelkerke R^2 [19.40 % (Cox and Snell) and 42.30 % (Nagelkerke)] variance of the model was explained by the independent variables. Hosmer and Lemeshow Test shows that p = 0.654 > 0.05 is insignificant which is good to support for the regression model fit. Out of 176 customers who chose the first option [satisfied with the customer

management at Buddha Air], this model predicts 165 customers showed their satisfaction for customer management at Buddha Air and 11 customers showed their dissatisfaction for the customer management at Buddha Airline. Again, out of 9 customers who chose the second option dissatisfaction, this model predicts that 3 were still dissatisfied and 6 were found satisfied with the price of the tickets, quality of service, employee behaviour and customer management. Thus, it predicts that customers showed their satisfaction for the customer management at Buddha Air with 98.20 percent accuracy and also predicts that customers showed their dissatisfaction for the cost price of ticket, quality of services, employee behaviour and customer management at Buddha Air with 98.20 percent accuracy which predicts 35.30 percent accuracy. The results show that the overall percentage of correct prediction is 92.40 percent. The results also show that there was significant association between fluctuation in ticket price and customers' satisfaction ($p < 0.05$ with odds ratio = .599 <1, B = -.582<0) indicating a negative impact on customers' satisfaction. When the independent variable fluctuation in ticket price increases one unit, customer satisfaction can be predicated to decrease around 0.559 times if other variables are controlled. This study has supported the previous study of "The Effect of Price and Service Quality on Customer Satisfaction in Mutiara Hotel Bandung" (2016) because both previous and current studies found that there is negative association between the price fluctuation in ticket price and customers' satisfaction. The previous study also disclosed that customers were found dissatisfied when the price of the ticket price goes up and down. Similarly, there was significant association between strict flight schedule and security ($p < 0.05$ with odds ratio = .221 <1, B = -.1.512 < 0) indicating a negative impact on customers' satisfaction. When the independent variable strict flight schedule and security increases one unit, customer satisfaction can be predicated to decrease around 0.559 times if other variables are controlled. This study has supported the study of Fornell, Mithas, Morgeson & Krishnan (2006) because the previous and the current studies had found that there was negative association between strict flight schedule, lengthy security processes and customers' satisfaction.

3.5. Results on categorical variables of the Linear Regression Model

The categorical variables on reasons of choosing Buddha Air and gender were entered the Linear Regression Model of the SPSS to find the correlation between them.

Table 14. The correlation between gender and the reasons for choosing Buddha Air

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.274[a]	.075	.055	.282	1.892

The outputs of the first Table 14 show the model summary and overall fit statistics. The results show that the R value is .274. Therefore, the customer satisfaction is positively correlated with the reasons of choosing Buddha Air and signifying a weak relationship between the customer satisfaction and reasons for choosing Buddha Air. Again, the R^2 value is 0.075 signifying that the independent variables (price of the tickets, customer management, service quality and employees' behaviour) have explained total variances of 7.50 % on dependent variable customer satisfaction which shows a very weak relationship between the customer satisfaction and reasons of choosing Buddha Air. Again, the adjusted R^2 of the model was 0.055 with the $R^2 = .075$ that means that the linear regression explains 5.50 % of the variance in the data which is not a large variation so that the regression equation does not appear to be useful for making predictions for the reasons of choosing Buddha Air since the value of R^2 is lower than 1. Again, the Durbin-Watson d = 1.982, which is between the two critical values of $1.5 < d < 2.5$ and therefore we can assume that there was no first order linear auto-correlation in the data**.**

Table 15. Results of ANNOVA

Model	Sum of squares	df	Mean square	F	Sig
Regression	1.162	4	.271	3.664	0.007
Residual	14.276	180	.079		
Total	15.438	184			

The results show that the regression model was the statistical significance that was run. Here, $p < 0.007$, which is less than 0.05, indicating that, overall, the regression model statistically significantly predicts the outcome variables of customer satisfactions with Buddha Air which is a good fit for the data.

Table 16. Results of coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		Sig	95.0% Confidence interval for B	
	B	Std. Error	Beta	t		Upper	Lower
1. Constant	1.037	.038		27.060	.000	1.113	.961
Employee's behaviour	.034	.066	.043	.524	.601	.164	-.095
Price of the tickets	-.037	.066	-.046	-.565	.573	.092	-.166
Service quality	.098	.055	.152	1.783	.076	.206	-.010
Customer Management	.224	.070	.256	3.192	.002	.382	.085

We are 95% confident that the slope of the true regression line is somewhere between .164 and -.095. In other words, we are 95% confident that customer satisfaction with Buddha Air, the level of customer satisfaction increases somewhere between .164 to -.095. It is concluded that on average, for the reasons of choosing Buddha Air "employee behaviour", "the level of customer satisfaction" will increase .034 times. Again, we are 95 % confident that for the reason of choosing Buddha Air "Price of the Tickets" decreases -.037 times. Again, we are 95% confident that the reason of choosing Buddha Air "Service Quality" increases .098 times. Finally, we are 95 % confident that the reason of choosing Buddha Air "Customer Management" increases .224 times.

4. Discussion and Conclusion

The objective of this study was to examine the customers' satisfaction level against current ticket's price, service quality, employees' behaviour, and customer management at Buddha Air. The empirical studies reveal that customer satisfaction is embedded in price level of the ticket, service quality, employees' behaviour and customer management. Four research instruments were used to examine the perceptions and experiences of customers on current rate of ticket prices, service quality, and customer behaviour and customer management. The research method used in this study was the survey method where the survey questionairs was used as research instrument. The survey questionnaire was returned by one hundred and eighty-five respondents. One hundred and eight (58.37%) was male population and seventy-six (41.63 %) was female population. The response rate was 92.5%. The results show that there is significant association between fluctuation in ticket price, employee motivation and politeness, customer centered strategy, positive employees' behaviour, facilities and customer management and strict flight schedule and security and customer satisfaction. Promotors, company's policy makers, branch managers, researchers and students will be benefited by the implication of this study to understand the perceptions of customers towards the price factor, quality factor, service quality of employees and customer relationship management. More importantly, the findings of this

study would be importantly helpful for company's leaders on how to satisfy their customers at Bharatpur Chitwan. The results further show that the customer management had not a buffering effect on initial levels of customers' satisfaction but affected change over time. In generalizing the results of the present study, there was some cause for concern due to a sampling method and representativeness of the male and female population. The facilities in different airlines, price of tickets, service quality, employees' behaviour and customer management vary in each airline. The conclusions of this research will be beneficial to other airlines to identify the needs and preference of customers so that they can formulate new customer-centred strategies in future. It was summarized by the previous study that customer satisfaction has always been considered a vital business goal because of its crucial role in the formation of customers' desire for future purchase or tendency to buy more. The growing of airlines industry provided opportunities as well as challenges to the business entities in the Airline industry. The opportunities were due to the increasing demand for the airline services, while the challenges were high level of competition between airlines but also due to the growing customer demands for better services.

References

Aboulafia, R., & Michaels, K. (2018). Opinion: Global Aerospace Industry May Be at Record High. Retrieved from http://aviationweek.com/farnborough-airshow-2018/opinion-global-aerospace-industry-may-be-record-high.

Aligholi, M. (2014). Investigation of Link between Customer Satisfaction and Customers Price Sensitivity. *Mediterranean Journal of Social Sciences*. doi: 10.5901/mjss.2014.v5n20p3098

Amoah Mensah, A., Quaye, D. and Mensah, I. (2018). Customer relationship management practices affecting customer loyalty supporting small airline carriers in Ghana. *International Journal of Electronic Customer Relationship Management*, 11(4), 411.

Boettger, T. (2019). What Drives Customer Inspiration? A Goal-Systemic Perspective. *SSRN Electronic Journal*.

Chow, C. (2014). Customer satisfaction and service quality in the Chinese airline industry. *Journal of Air Transport Management, 35*, 102-107.

Cohen, L., Manion, L., Morrison, K., & Bell, R. (2011). *Research methods in education* (1st ed.). London: Routledge.

Creswell, J., & Plano Clark, V. (2011). *Designing and conducting mixed methods research* (1st ed.). Thousand

de Lange, R., Samoilovich, I., & van der Rhee, B. (2013). Virtual queuing at airport security lanes. *European Journal of Operational Research, 225*(1), 153-165.

Easterby-Smith, M., Thorpe, R. and Jackson, P. (2012). *Management Research*. London: Sage.

Fornell, C., Mithas, S., Morgeson, F., & Krishnan, M. (2006). Customer Satisfaction and Stock Prices: High Returns, Low Risk. *Journal of Marketing, 70*(1), 3-14.

Kattara, H., Weheba, D., & El-Said, O. (2008). The impact of employee behaviour on customers' service quality perceptions and overall satisfaction. *Tourism And Hospitality Research, 8*(4), 309-323.

Oaks: Sage. Creswell, J. (2014). *Educational research* (1st ed.). Harlow, Essex: Pearson.

Service Quality, Brand Image and Customer Satisfaction Influence Loyalty (Study on Citilink Airline Passengers). (2019). *European Journal of Business and Management*.

Sinha, A., Sinha, A. and Sinha, A. (2018). *Using SPSS, New Delhi* Panjab Publication.

An Elaborative Study in the Market Potential of Home Automation and Security Products: A Case Study of Chitwan District in Urban Nepal

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Abstract

The objective of this study was to make people aware of automation products and its importance in the field of human convenience and security and also to focus on security, energy management and comfort. Quantitative research approach was used in this study. The research was conducted in two phases, i.e. collective interview with the guardians of the students by distributing the questionnaire to the students and providing them necessary guidance to fill the questionnaire and field visit to different institutes, banks, homes, hotels, industries in the year of 2018. The sampling technique was Random, Quota and convenience sampling. The results show that around 78.2 % families had Wi-Fi connection in their homes where 61.3 % was male and 37.1 % was female. Out of 124 members participating in research, 48.4 % of respondent was graduate student. The results show that approximately 96.8 % respondents show their interest in technology product. Among them 60.2 % respondents were between the age group of 30-50. The results also show that 90.3 % of family had more than three family members where 27.3 % respondents had monthly income above Nepalese Currency 90,000. About 51.7 % respondents perceived that security was the key feature of automation products whereas only 17.7 % responded that energy management and comfort were major issues for automation. The results importantly highlighted that approximately, 82.3% were familiar with home automation and 89.5 % respondents trusted in home automation products. The results also show that 84.7 % people showed interest in keeping home automation products. The empirical studies reveal that home automation is the most customized and reliable automation services. This study has tried to relate the advancement in the field of automation and the market potential of those products in Chitwan, Nepal. The implication of this research will be beneficial to city people who have the lack of deep knowledge of automation products and uses. The limitation of this study is the concern of proportion of the sample population of male and female participants.

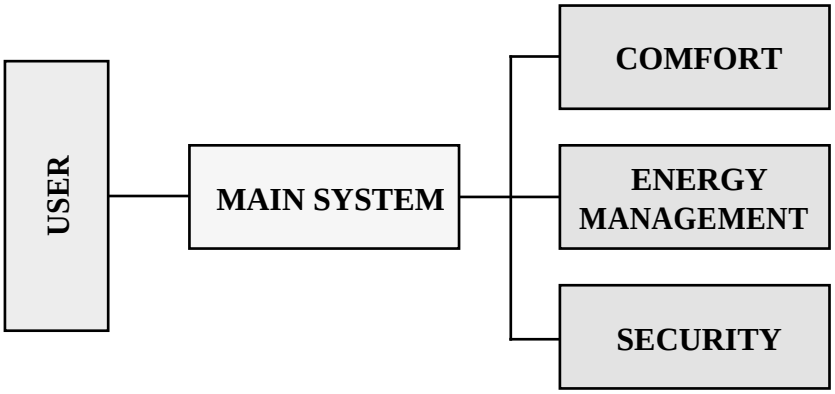
Keywords: *Home Automation, Security, Comfort, Smart Home*

Introduction

Background of Study

Home automation is derived from two different words “Home” and the “Automation” where home is the place where we live inside the four walls and “Automation” means the act of implementing the controls of equipment with advance tech usually involving electronic hardware (Asadullah & Raza, 2016). Therefore “Home automation” gives the sense of smart house. All home automation system controls the lighting, temperature, comfort, entertainment and other appliance inside house and with essential features about

security such as fire alarm and cctv cameras which are getting popularity now days (Asadullah & Raza, 2016). The objective of home automation is all about comfort, efficient operation, reduction in energy consumption and increasing the life standard. Certainly, with elderly and disabled people can get quality of life because of the home automation (Asadullah & Raza, 2016). It is doubtless to say that a home automation is connected with the "server" which is also known as hub. User can control home activities within one click, even it he is far away from his house. The user needs to connect with any internet source from anywhere so he/she can get notification instantly gadgets like cell phone laptops etc. Where every gadgets and house equipment are connected with IOT so that every object can complete task and communicate with user each other. The table below shows more clearly how automation is connected with user. The control & automation is limted to the user alone (Asadullah & Raza, 2016).



Block diagram Home Automation

The automation industry is in a re-evaluation stage with significant technological advancements. Developments in automation industry, introduction of upgraded devices and technology, also known as Smart Home and Smart Building, has changed the way products and services are being delivered. With focus on enhancing consumer experience, these technologies are witnessing continues research and development to equip the products as per compatibility with Smart & Sustainable Home and Building projects (YANG, 2005). The market for home automation is forecast to grow steadily to become US$ 116.26 Billion by 2026 from US$ 64.67 Billion in 2017, at a CAGR of 6.8 % (Transparency Market, 2017)

Moreover, the market for home automation products and solutions in developing economies across the globe such as China, India, and Brazil, are witnessing increasing adoption due to significant rise in disposable income of the mid-income group and rising preference for luxurious lifestyle (Transparency Market, 2017). Furthermore, other Asian countries, for instance Indonesia, Taiwan, and South Korea, are projected to fuel the growth of the home automation market during the forecast period in this geography (Transparency Market, 2017). This research is initially trying to understand the necessary outlet showing, 55.6 % choose online store, showing people interest in using technology with 46 % people thought that this kind of product is very preferable to Home. Respondents view on the Products like automatic water pumps which are available in the market with the price ranging from NRs. 1500-2500 Nepalese Rupees (NRs) and remote-controlled lights and fans whose price in the market is NRs 15000-20000 were about 10.5 % people strongly agreed in the requirement of automatic water pump in present scenario. Products like. Market research showed that about 72.7 % people had income level less than NRs. 90,000. Even though people of Chitwan are aware of automation, Home automation is a completely new market.

Problem Statement

Problem definition

We are living in the 21st century but still follow traditional methods for comfort, security, and energy management. Presently we have system that can be easily installed, cost efficient, and able to provide genuine home automation to consumers. We are wasting the energy (more specifically electrical energy) in different fields such as Agriculture, Hospitals, Education, and Apartments etc (Transparency Market, 2017). which can be due to unwanted operation of different loads or equipment.

The market of Home solution is wide and includes variety of consumers of different age group starting from kids to senior citizens. The demand and type of solutions vary as per the consumer. The main problem we encountered from the on-field survey was problems with an integrated system capable of controlling their comfort, security, and energy management issues. This research surveyed for the likeliness of a single integrated system incorporating all the components of a home network which solves the issues of comfort, security, and energy management to fit the present scenario.

Market Potential:

The market potential of is very high as it consists of 579,984 population (Statistics, 2017).

Target Market: Map of Nepal showing Chitwan

It has an area of 2,238.39 km^2 and in 2011 had a population of 579,984 (279,087 male and 300,897 female) (Statistics, 2017). Chitwan has a huge opportunity for home automation product. Bharatpur is major commercial and service Centre of Chitwan as well as Nepal and major destination for higher education, health care and transportation in the region (UNFCO, 2009). At present Bharatpur is the largest business area of Chitwan. Chitwan district is also known as the medical city of Nepal. There are many top-rated medical institutions in the district are located in Bharatpur. High rank schools, hotels, apartments, hospitals and industries are also present in abundant amount (UNFCO, 2009). Hence market potential of home automation products in Chitwan is very high.

Research Methodology

Research Approach

Initially exploratory design procedure was used for convenience and to get tentative idea about the market. Later conclusive research was conducted to get precise idea of the market. Under conclusive research design procedure, we conducted causal research procedure by formulating questionnaire that was asked to 120 respondents.

Population and Sampling

The population of Chitwan is 579,984 population (Statistics, 2017) which is relatively larger as compared to other cities of Nepal. But for our convenience we selected 120 samples for our research. The sample included respondent from Bharatpur and its nearby areas. The sampling was carried out through convenience, quota and random sampling procedure.

Questionnaire and Administration

Home automation (HA) is one of the new concepts for comfort, security and energy management. After the formulation of questionnaires, the research was divided into two parts. In first part different students at Oxford College of Engineering and Management were included by providing them questionnaire. Each and every student of the class was provided with proper instruction and was asked to fill the questionnaire through their guardian. The answered questionnaire was collected in the next day.

In second part the research was conducted on targeted area like hotel and restaurant, educational institute, home etc. Both the approach gave positive and sound feedback regarding the need of automation products. This research was based on the study of demand of technology so the prepared questionnaires were for urban area pertaining to high class and middle-class family.

The research was conducted relating to technology and taking reviews through well-structured and chronological questionnaires. The questionnaire was divided into three parts (consent, screening and respondent field questions). The time of interview was around 10-15 minutes. On screening part, personal and demographic information of the respondent as well as their willingness in the technology was taken. It clarifies which income group, gender and what age group of people was interested in technology products.

Data Analysis

A separate column is provided for unanswered questions (unanswered questions have no label in the figure)

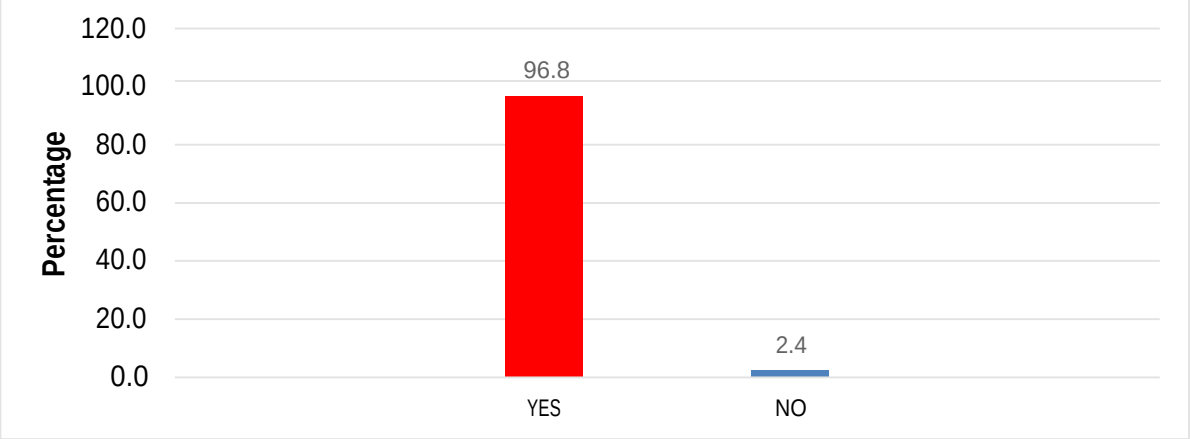


Figure 1 : Interest in keeping the technology Products

The bar diagram indicates that out of 120 respondents taken into our survey 96.8 % showed interest in technology products. This result supports the cause of our research as people are preferring technological products over traditional products like conventional switches.

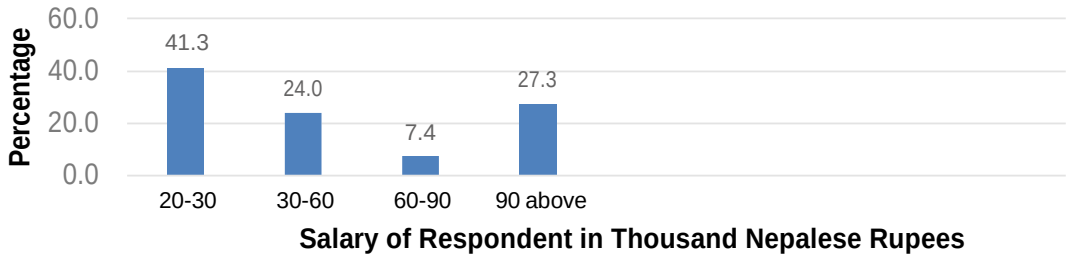


Figure 2 : Salary Level of the Respondent

If salary of the respondent were below 60-90 limit there would have been no reason for us to carry out the survey as our products targeted to preferably middle-class and high-class people. As in the graph it is clearly shows that our 7.4 % of respondents had salary above 60-90 thousand and 27.3 % had salary above 90 thousand which clearly indicates the interest and inclination of people with high income towards the technology products.

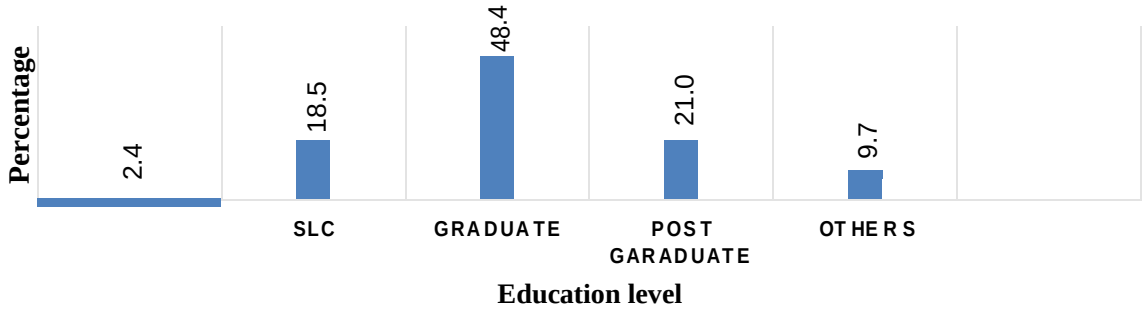


Figure 3 : Respondent Education Level

The survey that we carried also tried to corelate the tendency of respondents to use technology products with education. As the bar depicts, only 18.5 % were just SLC passed also showed their interest in technology products. This clearly indicates the possibility in that areas.

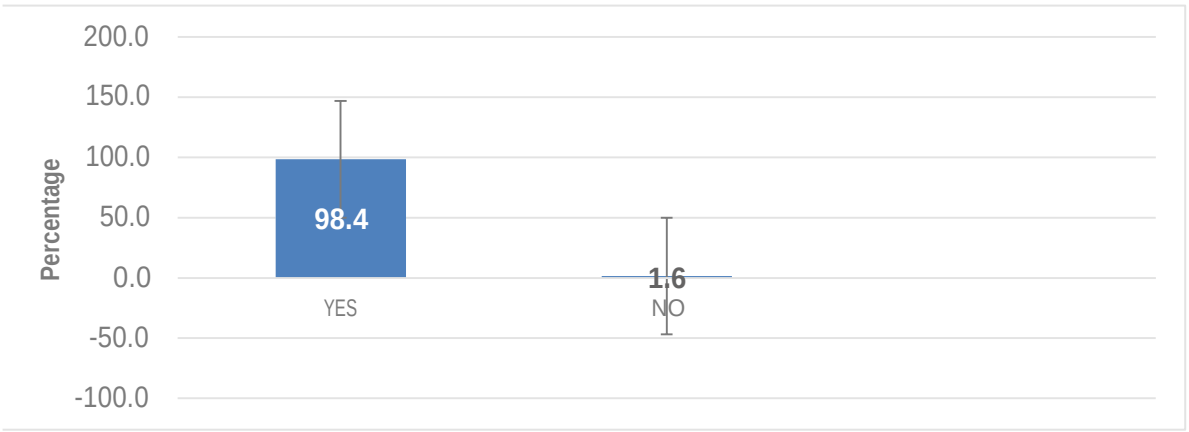


Figure 4 : WIFI Connection in Respondent House

As our product was based on Wi-fi so we had to understand the popularity of internet among our respondents, almost every respondent had a Wi-Fi connection at their home or using any forms of internet services.

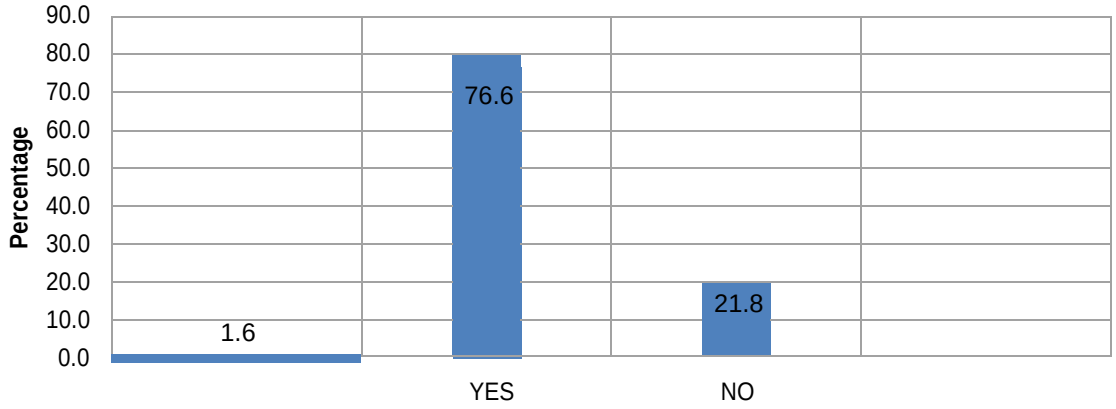


Figure 5 : Ownership of the house

In this section respondent had to verify whether they owned any house, if the respondents had no house then probably there was no need to keep any automation products. Surprisingly 76.6 %v respondents had their own house.

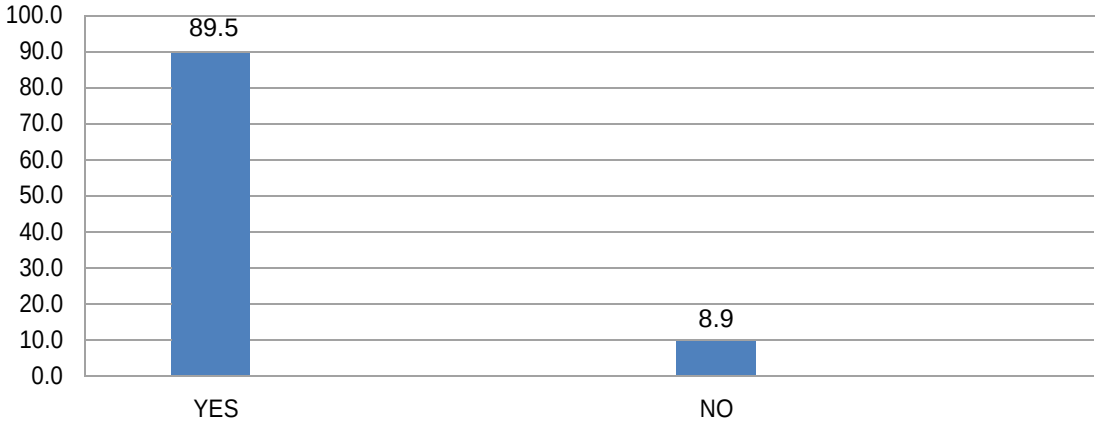


Figure 6 : Respondents Home Automization Product

8.9 % respondents did not trust the reliability of automation products rest of the respondents showed their trust in these kinds of products.

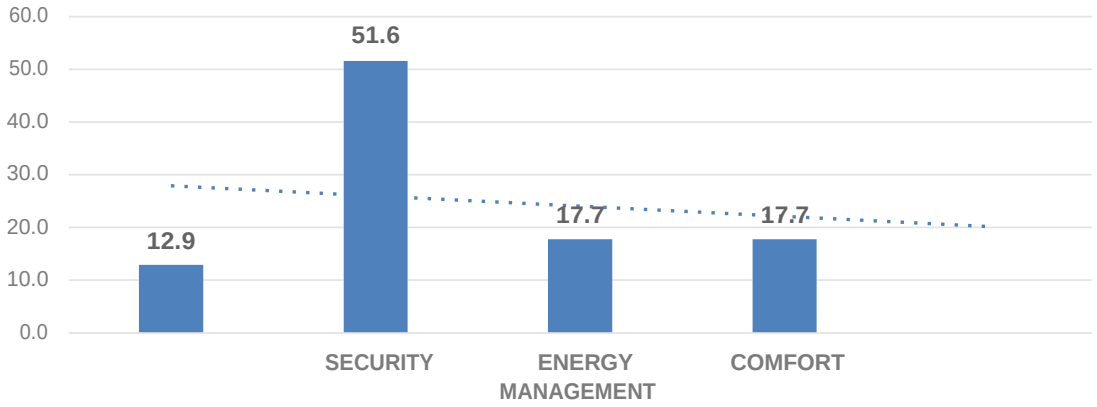


Figure 7 : Respontent's Rating for Automization System

As the main agenda of our research was to identify whether the respondents find security, energy management or comfort as main priority of automation products. 51.6 % of the respondents explained and answered in the favor of security and 17.7 % respondents answered in the favor of energy management and comfort. Rest 12.9 % did not find any of them important.

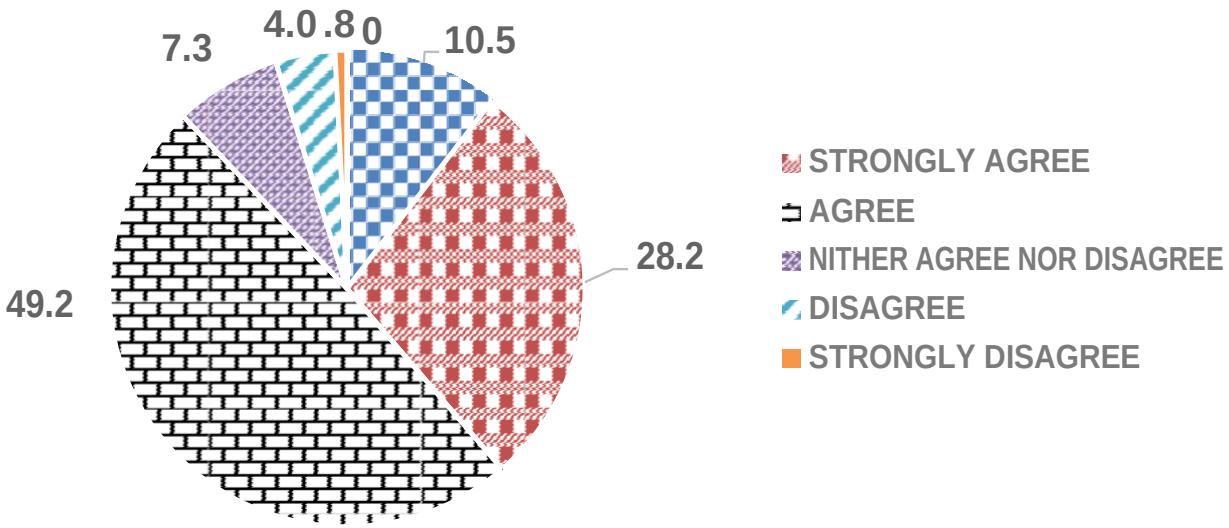


Figure 8 : Respontent's Mentality in the Workability in terms of Security by Home Products

49.2 % respondents agreed that home automation kept their home secure only 4 % showed dis-agreement in the workability of automation products. But 28.2 % respondent strongly agreed to the workability in terms of security.

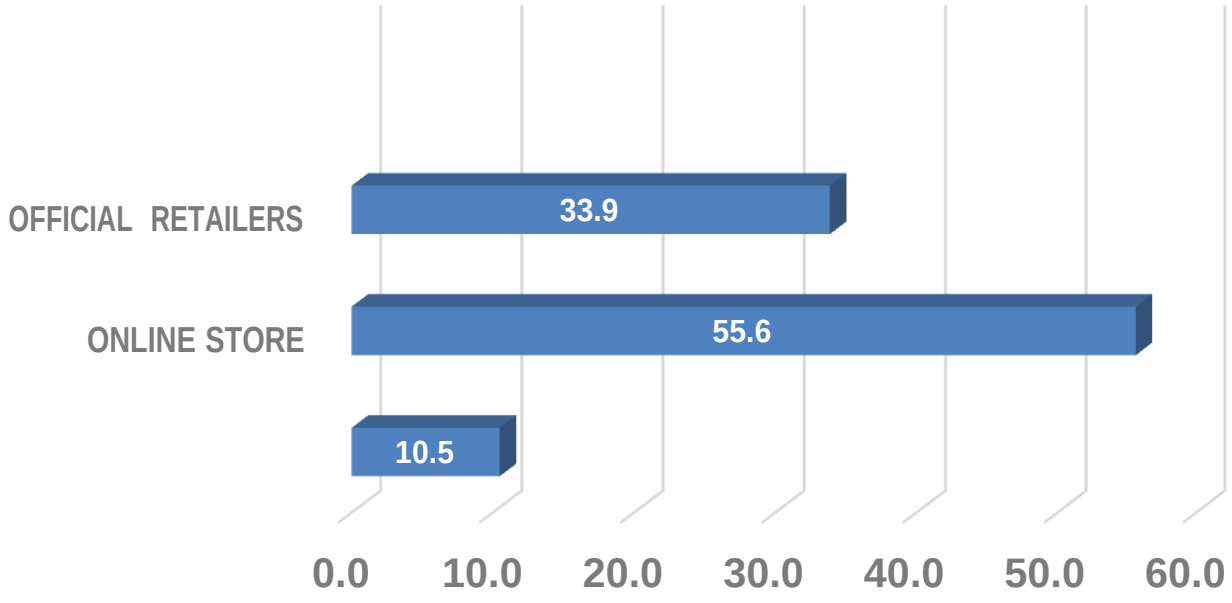


Figure 9 : Respontent's Choice of Outlets

On the todays competitive market there are two types of outlets namely: official retailers and online store. As anticipated by the people's interest in technology products 55.6 % respondents chose online store over official retailers. But around 10.5 % of respondents did not like to answer the question.

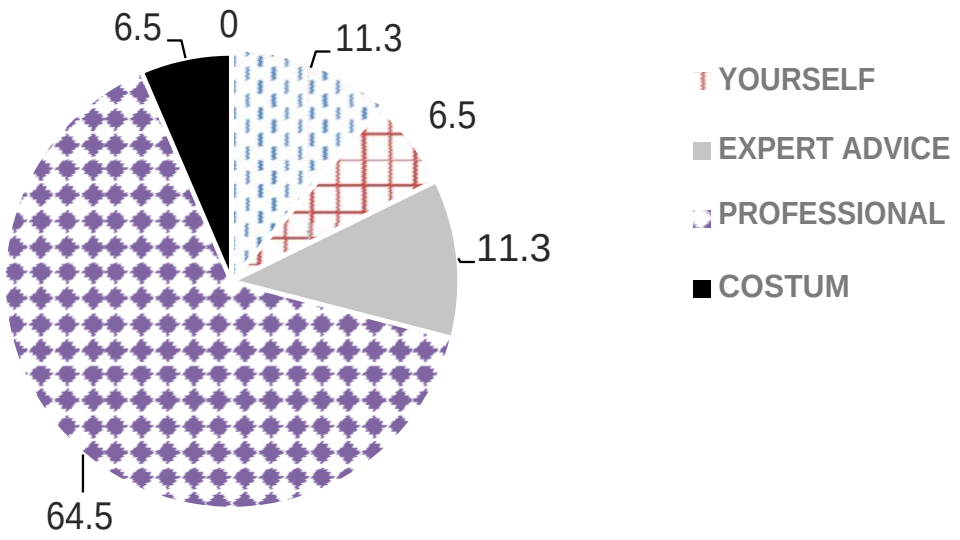


Figure 10 : Method of Installation of Home Automization Product

As Nepal being a developing country, we hoped that no respondents would like to install these automation technologies by themselves but interestingly about 6.5 % of respondents find installing these automation products by themselves. But 64.5 % would seek professional's help to install these automation products in their home. Some 11.3 % would seek expert advice and rest 6.5 % respondent would like to take the custom service provided by the company.

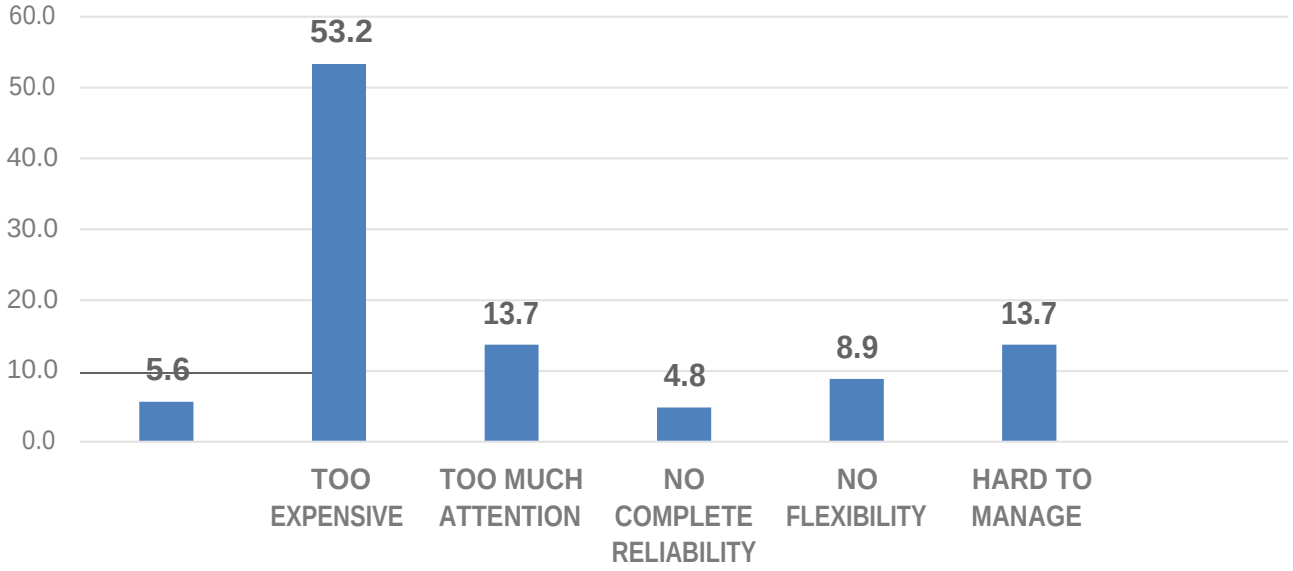


Figure 11: Expectation of Respondents to adopt Home Automization

As 41.3 % of our respondents had their income level between 20-30 thousand Nepalese rupees, around 53.2 % respondent marked "Too Expensive" as the main reason of not buying the automation products. Around 13.7 % thought it requires too much attention where as 13.7 % thought it would be hard to mange despite showing interest in technology. Others choices like no complete reliability and no flexibility we not the major concerns of the respondents.

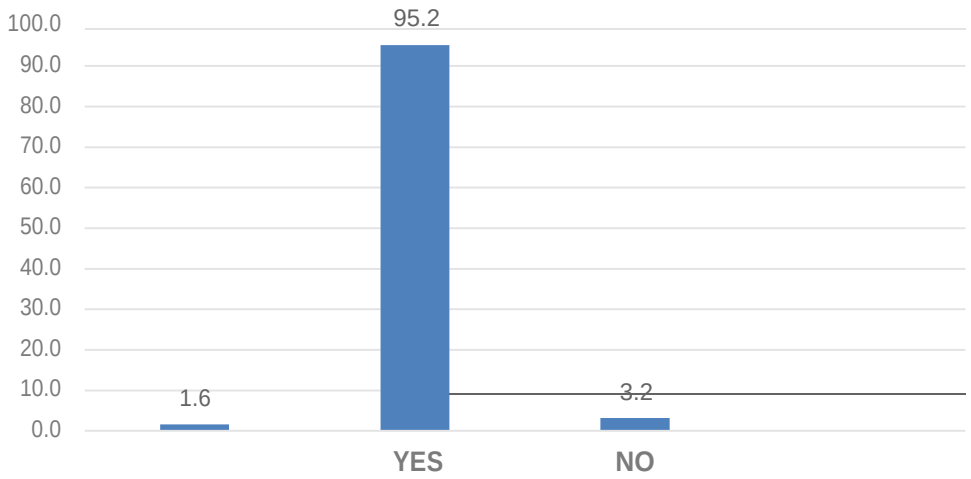


Figure 12: Recommendation of Automization

As this was the main question in our entire survey, 95.2 % respondents would like to recommend the automation products to their friends and relatives.

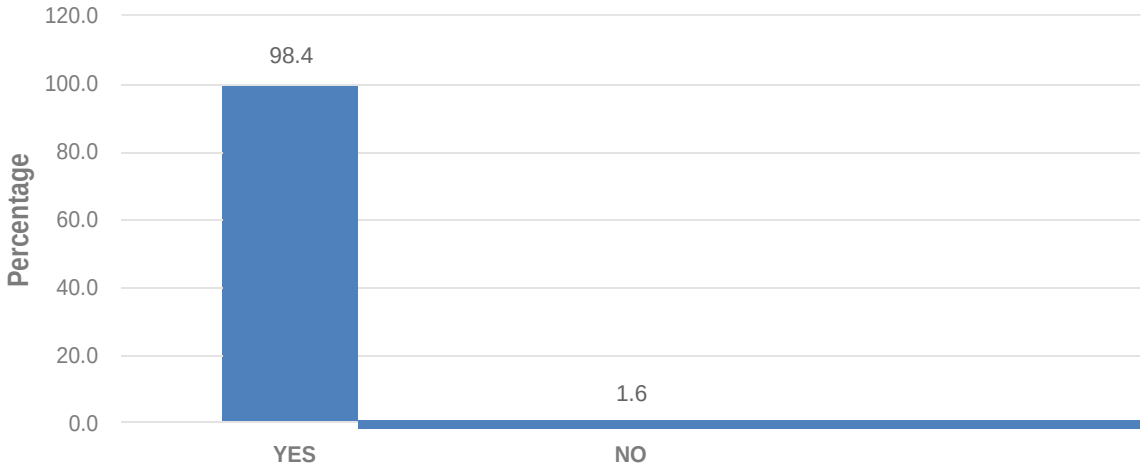


Figure 13: Demand of Automization Product in Future

98.4 % of the respondents answered YES to the question regarding the demand of automation in future, what we conclude out of this huge sublimation that they don't think that automation is the present need of general public of Chitwan, rather it to be a future need.

Summary of Findings

As seen from the data which was gathered from the survey it is clear that there is huge potential of automation products in Chitwan district of Nepal. Many respondents showing interest in technology products proves the future of these technologies in Nepal as well. This research also shows that with the increase in the salary of respondents the tendency to use automation for comfort and energy management increases. But as if for moderate respondents with salary of 60-90 thousand Security remains to be most important. Ownership of a house, Wi-Fi connections and educational qualifications of respondents had direct connections with the whether to select or not select automation for their household. But as most respondents answered NO for the possibility of using automation products in the present scenario, we found the research to be far cited than for this present scenario.

Discussion

From our survey we concluded that Home Automation could be a well-suited technology in near future. Reasons monitored that people are not likely to purchase Digital security system and Home Automation System includes-they are expensive, hard to maintain, high false alarm rate etc. Major sector where future of product can be seen includes home, industries, schools etc. Only 6 % of people disagreed to use products made in Nepal which put light on the interest of Nepalese people to use Nepalese products. During our survey respondent's we found that price of the product played a vital role for 47.6 % of our respondent. 53.2 % people thought that the expense of automation product will be the main aspect of not using automation product, but unexpectedly only 13.7 % thought that this kind of product will be hard to manage at the first place. We also tried to find that what would change the mind of respondent for adopting automation products, impressively 41.9 % agreed in transparency of the investment and cost rather than affordable price which was just 29.8 %.

Our plan is to generate awareness and find out the market potential for the need of home automation system. The home automation revenue is expected to rise as people become aware of its capabilities. Some recommendations that this research provides that will ensure good customer relations are as regular maintenance, relevant percentage of discount, a year warranty and scheme for custom installments, easy graphical user interface and application control system, security and EMI scheme and remote info sharing.

References

Asadullah, M., & Raza, A. (2016). An overview of home automation systems. *2nd International Conference on Robotics and Artificial Intelligence (ICRAI),* . Rawalpindi, Pakistan.

Statistics, C. B. (2017). *National Population and Housing Census 2011.* Kathmandu: Government of Nepal.

Transparency Market, R. (2017). *Home Automation Market*. Retrieved July 18, 2018, from https:// www.transparencymarketresearch.com/home-automation-market.html

UNFCO, U. F. (2009). *An Overview of the Central Development Region (CR).* UN House, Pulchowk, Kathmandu, Nepal: United Nations Resident and Humanitarian Coordinator's Office.

YANG, J. (2005). DISCOVER INTEGRATED APPROACHES TO SMART AND SUSTAINABLE HOUSING DEVELOPMENT. *2005 World Sustainable Building Conference.* Tokyo.

Appendix 1

One question had relations with other, so that there will be uniformity of response.

On the session 1:

Answers to the questions below were our key concerns.

1. Are you interested in technology products?
   Reason: It shows will of the respondent in buying home automation products.
2. Family Monthly Income (in thousands, Nepalese rupees)
   Reason: Family income determines the capacity of the respondent to buy our product.
3. Gender
   Reason: Which gender is more likely to buy our products?

4. Whether they own that house or not?
5. Education status of the respondent.
6. Do they have Wi-Fi connection in the house?

   Reason: Our product as a full package is internet based hence Wi-Fi is the essential part of the survey

On the session 2:

Following questionnaire had important role:

1. Do you trust in home automation products?
2. How would you like to link with us?
3. If you were to install home automation products, how would you prefer to do?
4. Which of these places you prefer to have automation systems?
5. Do you recommend automation products to your friends/relatives?
6. Do you see demand of home automation products in FUTURE?
7. If this product is available in the market from today, how likely would you be to buy the product?
8. What would change your mind about adopting automation?
9. Are Automatic water pumps the most essential product in today's scenario?
10. Will Home automation would make your home secure?

Code Book for questionnaires

We used code book for coding and to serve as documentation of the layout and code definition of the data file. It will ease us on data analysis and decoding of the survey research. Code book is given below**.**

Concerns

We discussed on the behavior categories for the data analysis because it is not easy to determine the respondent response in demographic classification. Demographic classification is also included so that more accurate analysis of data is obtained.

To obtain the effective output of the data of HA we revised the questionnaires many times consulting with senior and our team members. The main purpose of analyzing data is to obtained useable and useful information. Questionnaires was made to analyze the each of the response of the individual so data were analyzed by using frequency distribution and visual technique based upon the behavior classification and draw inference. We used statistical analysis (regression) to relate dependent and independent variable.

The study of internet addiction among adolescent of Oxford College of Engineering and Management (OCEM)

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Abstract

The primary objective of this study was to determine the prevalence of internet addiction (IA) among contributory factors and to determine the association between socio-demographic variables and influencing factors of using internet among Oxford College of Engineering and Management (OCEM) students. The quantitative approach along with the survey study was used as a research method and the survey questionnaire was used as the research instrument. Participants were selected through simple random sampling. The cross sectional analytical study was conducted among 169 adolescents of OCEM students. The results show that prevalence rate of non-addictive internet users were 20.1% while 79.9% were addictive users. Among addictive users, 38.5% were found mild addiction, 40.8% were found moderate addiction, only 0.6% were found in severe addiction. The results also shows that the prevalence of internet addiction was significantly high among young generation. Internet addiction was also statistically significant with various demographic variables and internet use factors. The previous studies reveal that internet has become an integral part of contemporary life, bringing huge benefits in terms of expanding access to knowledge, information, social interaction, and entertainment and further noted that around 40% of the today's world population has an internet access. The implications of this study will be beneficial to parents, educational leaders, school and college principals to understand the internet addiction problems and to formulate new academic policy to minimize the over use of internet during teaching and learning activities. It is also recommended that internet addiction can affect the physical and mental health of the students so that the problem of internet addiction should be prevented through it's awareness program on the negative effects of over use of internet.

Keywords: *Prevalence; Internet addiction; Inter addiction; youth of OCEM*

1. Introduction

Internet was established in the early 1960 by the U.S. Department of Defense primarily for military purposes. Since then, the continual improvement of the internet technology has provided an extraordinary level of public accessibility to wide range forms of communication Intra-organizational and inter-organizational email; data storage, management transfer, social websites like Facebook, twitter, and so forth. Due to the development and spread of cheaper and more user-friendly computer technology and software (e.g., portable computers, Microsoft Word), the use of the internet has increased dramatically (Wanajak, 2011). Today around 50 % of the world population has an internet connection. In 1995, it was

less than 5 %. The number of internet users has increased tenfold from 1999 to 2013 and reached first billion in 2005, second billion in 2010 third billion in 2014 and penetration population of internet in the world is 46.1% till July 1, 2016. As of, June 30, 2016 internet users in Asia is 49.5% with the highest users and lowest user in Africa with 9.8 %. Similarly, In China Penetration population of internet user is 52.2 %, in India 43 % and in Nepal 63 % *(*Internet Live Stats, 2019*).* A cross sectional descriptive study was conducted to determine the prevalence of IA and contributor factors to determine internet related behavior patterns among students of Science, using stratified random sampling method. Of 236 participants, 74.6% were females. The study revealed that 50.8 % had mild addiction, 40.7 % moderate and 1.3 % had severe addiction. The finding of the study concluded that prevalence of IA is significantly high (Adhikari B, 2015).

2. Literature Review

A cross-sectional school-based study was conducted in four cities in China among 13,723 students (aged 12-20 years) to evaluate the associations between problematic Internet use and physical and psychological symptoms. The Multidimensional Sub-health Questionnaire of, Pittsburgh Sleep Quality Index and demographic variables were used to measure adolescents sleep quality, physical and psychological symptoms respectively. Problematic internet use was assessed by the 20-item Young IA Test. Prevalence rate of internet Addiction, physical symptoms, psychological symptoms, and poor sleep quality were 11.7 %, 24.9 %, 19.8 %, and 26.7 %, respectively. Excessive internet use may not only have direct adverse health consequences but also have indirect negative effects through sleep deprivation (Van Ameringen, Simpson, Patterson, Turna & Khalesi, 2016). A cross-sectional survey was conducted among 17,599 students in eight cities of China to test the relationship between Problematic internet use and psychosomatic symptoms and life satisfaction among Adolescents. PIU was assessed by the 20-item Young IA Test (YIAT). About 8.1 % of subjects showed PIU. Adolescents with PIU were associated with males, high school students, urban, eastern and western areas, upper self-report family economy, service type mostly used for entertainment and relieving loneliness and more frequency of internet use. Compared with normal internet users, adolescents with PIU were more likely to suffer from psychosomatic symptoms ($P<0.001$), including lack of physical energy ($P<0.001$), physiological disfunction ($P<0.001$), weakened immunity ($P<0.001$), emotional symptoms ($P<0.001$), behavioral symptoms ($P<0.001$) and social adaptation problems ($P<0.001$). Adolescents with PIU had lower scores on total and all dimensions of life satisfaction (all $P < 0.001$) (Bozkurt, Özer, Şahin & Sönmezgöz, 2017).

Multistage sampling was conducted in the sampling procedure where student participants from Baguio City were selected. The IA Test was used. Total of 1059 valid questionnaires were analyzed. Findings suggest that adolescents are frequent online users and that there are significant differences in terms of gender, school type, and online behaviors; social desirability had a strong positive relationship with adolescent IA(Waldo, 2014). A survey was administered among 1097 adolescents aged between 11 and 18 years to explore the addictive symptomatology among British adolescents. A convenience sampling technique was used. Only 71.8 % correctly completed all the Problematic Internet Entertainment Use Scale for Adolescents [PIEUSA; PIEUSA items] (i.e. was., 1097 out of 1528 participants). The results indicated that prevalence of online problem users was 5.290 and most of them were younger males that

engaged in online gaming for more than two hours most days. The majority of online problem users displayed negative addictive symptoms, especially 'loss of control' and 'conflict' (Lopez-Fernandez, Honrubia-Serrano, Gibson & Griffiths, 2014). In distinct to my research a cross-sectional survey with a sample size of 3560 students was conducted among high schools in Connecticut, USA. Demographic data, characteristics of internet use, health measures and risk behaviors were assessed. the overall prevalence was about 4% with no significant difference between genders. (Desaaiet,al.. 201l) In distinct to my research a cross sectional study was conducted among adolescents of ages 13 to 18 years, registered on the secondary school registry in Guangzhou city using a stratified random sampling technique. IA was assessed using the Internet Addiction Test (IAT). The majority of respondents were classified as normal users of the internet (n = 1,392, 89.2%), with 158 (10.2%) moderately and 10 (0.6%) severely addicted to the Internet. (Lam et, al, 2009).

3. Research design

The Strategic plan structure of data were taken from OCEM student of class 11 and 12. The study was examined to IA with youth. It was descriptive, analytical and cross tab in nature. The sample survey data were collected from youth. The study was based on those students coming from rural and urban areas from the different places. A Cross-sectiona1 analytical study design among 169 students was used to assess IA among adolescents of 11^{th} and 12^{th} grade, whose age ranges between 15 to 19 years of OCEM College.

3.1 Inclusion criteria and Exclusion criteria

The study included adolescents of 11^{th} and 12^{th} grade with age ranging from 15 to 19 years, were available and willing to participate in the study. Those students whose age ranged below 15 years and above 19 years and absent were excluded from the sample population.

3.2 Data Collection Procedure

Permission was obtained from the concerned authorities. Pre-testing was done among 10% of samples. The objectives of the study were informed to the respondents and written consent was taken. Parental consent form was distributed to those whose age is $\leq$ 18 years and signature of parents were taken as the permission to involve their child in the research. All the respondents who met the inclusion criteria were given a structured self-administered questionnaire. Respondents were assured for confidentiality of information as it was only used for study purpose. Similarly, a cross sectional survey was conducted between May and June 2010, using a self-administered questionnaire distributed to randomly selected 770 secondary schools students, using 20-item Young's IA test. and the Center for epidemiological studies depression scale with questions related to demographic, social, academic and internet use factors. 716 Students answered the questionnaire 391 are males and 325 are females. Prevalence was 5.3%, with male predominance. IA was associated with a lower degree of school performance, more hours using internet everyday (Cohen, Manion, Morrison & Bell, 2011).

4. RESULTS

4.1 Internet Addiction and Socio-Demographic Variables

In this digitalized world, the internet has become a fundamental tool for information, entertainment and social communication. It has been widely adopted especially by adolescents, as a low-cost, easy-to-access platform for social interaction and leisure activities. Currently, 93% of adolescents and young adults go online in the USA and almost 70% adolescents in Europe spend 2–4h daily on computer-games surfing and chatting via the internet (Tsitsika et al., 2016). Given this high usage and amount of time spent on internet use, internet addiction, often referred to as 'problematic internet use' (PIU), is a growing concern. The reported prevalence of PIU varies widely, from 1% to 9% in Europe, 1 % to 12 % in the Middle East and 2 % to 18 % in Asia. PIU in adolescents and young adults appears to be associated with negative health consequences, such as Depression, low educational performance, Attention Deficit Hyperactivity Disorder, daytime sleepiness, alcohol abuse and injuries (Mangoulia, 2014). It was found that socioeconomic variables seem to increase the risk of childhood and adolescent obesity. Indeed, previous research suggests an inverse correlation between childhood obesity and parental occupation, education and income level (Moreno, 2011).

All the collected data were reviewed, checked and organized daily for the completeness and accuracy. Coding and organizing was done before data entry. The data were entered and analyzed in the SPSS version 20. Mann-Whitney U & Kruskal-Wallis H test was used to find out the association between Internet Addiction, socio-demographic variables and Internet use factors. Data has been presented in different table form.

Table 1. Internet Addiction and Socio-Demographic Variables

Factors	Categories	N	Z score	P-value
Age	15 to 17	136	1.192	0.233
	18 to 19	33		
Sex	Male	87	3.475	0.001*
	Female	82		
Marital Status	Married	2	7.56	0.45
	Unmarried	167		
Educational Faculty	Science	86	3.932	0.000*
	Management	83		
Education Level	11	84	2.255	0.024*
	12	85		

*Significance level at 5%, *p<0.005

The results show that the association between IA scores and socio-demographic variables. It is found that IA is statistically significant with sex *(z=3.47, p=0.01,* education faculty *z=3.932, p=0.000,* education level *z=2.255, p=0.*024 (see in the Table 1*).* Likewise, the results show that the academic performance of the respondent are also associated with Internet Addiction. However it is not statistically significant to other variables. The current study has supported the previous findings of Stavropoulos, Alexandra & Motti-Stefanidi (2013) because both the current and the previous studies have highlighted that there is significant association between the internet user students and academic performance. This study also

support the previous study of Heo, Oh, Subramanian, Kim & Kawachi (2014) because both studies the similar findings that there was significant associations between addictive Internet use and ages of students, school grade and marital status. It was further found that female students in girls' schools were more likely to use Internet addictively than those in coeducational schools. Our results also revealed significant gender differences of addictive Internet use in its associated individual- and school-level factors.

4.1 The Internet Use Factors

The use of the Internet has allowed us the convenience of accessing anything at our fingertips. In adolescents especially, the Internet has become a readily accessible means for entertainment, communication, education and information retrieval. Nonetheless, the negative impact of addiction has pervasively affected day to day function; school performance and relationships with their parents; Worst of all, extensive Internet use may generate adverse effects on the psychosocial development of adolescents, which may result in many of them experiencing mental health problems including depression, loneliness, low self-esteem, and anxiety. An increasing number of studies have revealed that addictive online behaviors are very similar to alcoholism, substance addiction and pathological gambling. With the increased popularity of the Internet, Internet addiction has emerged as a social and mental health issue among youths. Although official diagnostic criteria do not currently exist, Young defined Internet addiction as the excessive, obsessive–compulsive, uncontrollable, tolerance-causing use of the Internet, which also causes significant distress and impairments in daily functioning. Internet addiction has the following types: cyber-sexual addiction, cyber-relational addiction, game addiction, information overload, and net compulsions. In recent years, Internet addiction has been reported in both Western and Eastern societies among adult and adolescent groups. Several studies have also examined the prevalence of Internet addiction during the past few years. Although data from those studies reported inconsistent occurrence rate of Internet addiction, there is no doubt that Internet addiction has emerged as a rapidly growing problem in young people that has attracted world-wide attention. Adolescence is a critical period for addiction vulnerability, when compared to adults, adolescents are more likely to adopt patterns of excessive Internet use. Generally speaking, Internet addiction is common among adolescents, and related factors are found at both home and school. Close attention should be paid by both parents and teachers to these factors. Effective measures are needed to prevent the spread of this problem.

Table 2. Association between IA and Internet use factors

Factors		N	Z score	p-value
Internet access at home	Yes	168	0	1
	No	1		
Own gadget	Yes	163	2.188	0.29
	No	6		
Type of gadget owned Computer	Yes	39	1.461	0.144
	No	124		
Smart Phone	Yes	123	0.654	0.513
	No	39		
Ipad/Tablet	Yes	38	1.029	0.304
	No	125		

Alternative to use if don't own gadget	Family members	5	3	0.77
	Internet Café	1		
Time of using internet more	Evening	72	3.791	0.000*
	Night	97		
Purpose of internet use study	Yes	120	2.26	0.024*
	No	49		
Online Games	Yes	71	3.619	0.000*
	No	98		
Chatting	Yes	152	535.5	0.001
	No	15		
Gambling	Yes	12	1.656	0.098
	No	157		
Pornography	Yes	27	2.668	0.008*
	No	141		
Social network sites	Yes	126	2.417	0.016*
	No	43		
Blogs	Yes	6	0.166	0.868
	No	163		
Downloading movies	Yes	6	1.128	0.855
	No	163		
News	Yes	6	0.142	0.254
	No	163		
Online shopping	Yes	18	1.142	1.142
	No	151		
Communicated with strangers	Yes	119	3.554	0.000*
	No	50		
Exchange phone number	Yes	50	3.206	0.001
	No	119		
Exchanges photos with strangers	Yes	52	4.315	0.000*
	No	117		
Met online friends	Yes	40	4.279	0.000*
	No	129		
Cyber bullying	Yes	8	0.685	0.493
	No	161		
Family relationship effects	Yes	23	4.031	0.000*
	No	146		
Health effects	Yes	53	2.154	0.031*
	No	116		

Kruskal Wallis Test

Factors		N	H	df	P-value
Experience of using internet	<6 months	4		3	0.037*
	6 months to 2 years	43			
	>2 years to 5 years	66			
	>5 years	56			
Average hour of internet use per day	<2 hours	84		3	0.000*
	2-3 hours	40			
	>3-5 hours	27			
	>5 hours	18			

Sleeping hour	<7 hours	47		2	0.641
	<7 to 8 hours	104			
	>8 hours	18			
Monthly expense	100-500 rupees	69			0.003*
	>500-1000 rupees	53			
	>1000 rupees	47			

The results indicate that Internet addiction is associated with various socio-demographic and internet use factors. This study revealed that prevalence rate of addictive internet users were 79.90 % and non-addictive internet users were 20.1%. Internet addiction has been classified as none users which was 20.l%. The results further show that mild, addiction was 38.5%, moderate addiction was 40.8% and severe addiction was 0.6%. Likewise, among all of the respondents' age group, adolescents of 17 years (34.91 %) were found to more addicted whereas, 15 years (1.18 %) group adolescents were less addicted than other groups. Regarding sex, male (45 %) were highly addicted than female (34.9%). Likewise, 89.9% use Internet for chatting, 70.4 % for study purpose, 74.6 % for social networking sites. 62.7 % for downloading movies/music, 42.0% for online games, 23.1% for news, 16.0 % for pornography. 10.7 % for online shopping. 7.1 % for gambling and 3.6 % for websites/blogging. The study revealed that 50.8% had mild addiction. 40.7 % modern and 1.3 % had severe addiction. (see in the Table 2). This study has supported the previous study of Wu et al. (2016) because both studies have found that a variety of related factors have significant effects on Internet addiction, for example, parental control, per capita annual household income, academic performance, the access to Internet and online activities. The results also show that Internet addiction was negatively correlated with social support and positively associated with depression.

Discussion & Conclusions

The results show that, addictive internet users (79.9%) were higher than non-addictive internet users (20.1%) among the respondents. Moderate Addiction was highest among others (40.8%) followed by mild addiction (38.5%). Likewise severe addiction has only 1 (0.6 %). The results also show that the academic performance of the respondent were also associated with Internet Addiction. However it was not statistically significant to other variables.

Internet addiction is becoming a significant problem among adolescents. IA is growing problem, which has psychological, physical, and social impact on adolescents' life, and requires preventive strategies as well as therapeutic interventions. IA is statistically significant with sex, educational faculty, educational level and academic performance of the respondents. IA is strongly significant of using internet more at night time. IA score is affected by the purpose of using 1ntemet. lA score is significant to online games, chatting, viewing' pornography, using social networking sites, respectively. IA score is highly significant with Communicating with strangers, exchanging phone numbers, exchanging photos with strangers meeting online, Family relationships and health. IA scores were significantly affected by experience in using the internet, those who has been using internet for > 5 years are highly affected than others. Daily average internet using hours is also significant to those who use internet> 5 hours a day and monthly expenditure is also significant to IA.

References

Adhikari B, M. (2015). Internet Addiction and Associated Factors among Health Sciences Students in Nepal. *Journal Of Community Medicine & Health Education*, *05*(04). doi: 10.4172/2161-0711.1000362

Bozkurt, H., Özer, S., Şahin, S., & Sönmezgöz, E. (2017). Internet use patterns and IAin children and adolescents with obesity. *Pediatric Obesity*, *13*(5), 301-306.

Christakis, D.A., Moreno, M.M., Jelenchick, L., Myaing, M.T. & Zhou, C., (2011). Problematic internet usage in US college students: a pilot study. *BMC medicine, 9* (1), l.

Cohen, L., Manion, L., Morrison, K., & Bell, R. (2011). *Research methods in education* (1st ed.). London: Routledge.

Hawi, N. (2012). Internet Addiction among adolescents in Lebanon. *Computers in Human Behavior*, *28* (3), 1044-1053.

Heo, J., Oh, J., Subramanian, S., Kim, Y., & Kawachi, I. (2014). Addictive Internet Use among Korean Adolescents: A National Survey. *Plos ONE*, *9*(2), e87819. doi: 10.1371/journal.pone.0087819

Internet Live Stats. (2019). Internet Live Stats - Internet Usage & Social Media Statistics. Retrieved 21 November 2019, from https://www.internetlivestats.com/

Lam, L.T., Peng, Z.W., Mai, J.C. & Jing, J.(2009). Factors associated with Internet Addiction among adolescents. *Cyber Psychology& Behavior, 12*(5), pp.551-555

Lopez-Fernandez, O., Honrubia-Serrano, M., Gibson, W., & Griffiths, M. (2014). Problematic Internet use in British adolescents: An exploration of the addictive symptomatology. *Computers In Human Behavior*, *35*, 224-233.

Mangoulia, P. (2014). Internet Addiction and Psychopathological Symptoms in Greek University Students. *Journal Of Addictive Behaviors Therapy & Rehabilitation*, *03*(03). doi: 10.4172/2324-9005.1000125.

Moreno, M. (2011). Problematic Internet Use Among US Youth. *Archives Of Pediatrics & Adolescent Medicine*, *165*(9), 797-801.

Stavropoulos, V., Alexandraki, K., & Motti-Stefanidi, F. (2013). Recognizing internet addiction: Prevalence and relationship to academic achievement in adolescents enrolled in urban and rural Greek high schools. *Journal Of Adolescence*, *36*(3), 565-576.

Tsitsika, A., Andrie, E., Psaltopoulou, T., Tzavara, C., Sergentanis, T., & Ntanasis-Stathopoulos, I. et al. (2016). Association between problematic internet use, socio-demographic variables and obesity among European adolescents. *The European Journal Of Public Health*, *26*(4), 617-622.

Van Ameringen, M., Simpson, W., Patterson, B., Turna, J., & Khalesi, Z. (2016). Internet Addiction or psychopathology in disguise? Results from a survey of college-aged internet users. *European Neuropsychopharmacology*, *26*, S700-S701.doi: 10.1016/s0924-977x(16)31834-x.

Waldo, A. (2014). Correlates of Internet Addiction among Adolescents. *Psychology*, *05*(18), 1999-2008.

Wu, X., Zhang, Z., Zhao, F., Wang, W., Li, Y., & Bi, L. et al. (2016). Prevalence of Internet addiction and its association with social support and other related factors among adolescents in China. *Journal Of Adolescence*, *52*, 103-111. doi: 10.1016/j.adolescence.2016.07.012

Wanajak, K. (2011). *Internet use and its impact on secondary school students in Chiang Mai, Thailand* (Doctoral). Cowan University.

Correlation and Regression Analysis Using SPSS

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Abstract

The objective of this study is to share knowledge on how to use Correlation and Regression Analysis through Statistical Package for Social Science (SPSS). This study has used secondary data to demonstrate the way of using very popular statistical tool on using correlation and regression analysis for novice researchers. Among various statistical tools, correlation and regression analysis are mostly used tools in many research works., e.g. the field of management, medicine, social science and education. However, not all the researchers may know whether the tools are fit to use, how to carry the analysis and how to interpret the obtained results. The results shows that novice researchers need to know the proper knowledge and skill to analyse the quantitative data. The implications of this study is willing to share the knowledge on correlation and regression analysis and the way of analyzing through very popular software package SPSS.

Keyword: *Statistical tools, Test of Significance, p-value, Hypothesis, Dependent and Independent variables*

1. Introduction

In quantitative study, researcher willing to use very famous statistical tool regression & correlation, however due to lack of sufficient knowledge on regression & correlation analysis their desired havenot fulfilled or even they use the tool, the tool haven't been properly used. To provide clear cut idea on correlation regression, its use way of interpretation of output of analysis, this research article has been prepared. Relation between two or more variables can be studied by using Correlation and Regression. Two variables are said to be related if change in the value of one variable changes the value of other variable. Here the term change implies either increase or decrease in the value of variable. Relationship between variables can be studied by the method of correlation or regression. Such an analysis of relationship can be carried for quantitative or qualitative variable however this paper includes only the analysis of relationship between quantitative variables. Those variables which are measurable and thus have unit are quantitative variables. Study of relationship between two quantitative variables at a time is simple regression or simple correlation and relationship between more than two quantitative variables may be partial correlation or multiple correlation or multiple regression according to the objective/nature of study and variables included in the study (Sthapit, Yadav, Khanal, & Dangol, 2017).

Strength of relationship between two or more variables is studied by using Correlation. Correlation is statistical tool that measures how strong relationship exists between variables. Value of correlation lies in between -1 and +1. Nearer the value of correlation to zero weak is the relationship between the variables, similarly if the value of correlation close to one implies higher (close) relation between variables. Hence correlation is a value which tries to explain degree of association between variables whereas regression tries to explain the relationship between variables using a mathematical function. (Gupta & Kapoor, 2014).

1.1 Correlation Analysis:

The correlation analysis refers the degree of relationship between variables. But it does not explain about which of the variable is cause and which one is the effect. Study of correlation between two variables is called simple and between more than two variables may be partial or multiple.

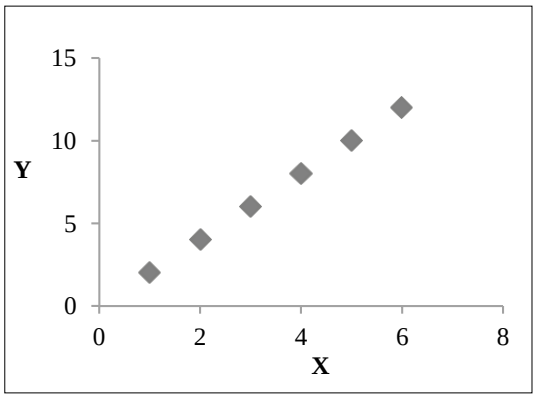
Correlation can be studied by two methods, diagrammatic method and mathematic method. Diagrammatically it is studied with the help of scatter diagram which cannot provide exact value of correlation in all case. Mathematically many methods and formulae are there however Karl Pearson's Method is widely used (Magnello, 2009).

1.2 Diagrammatic method:

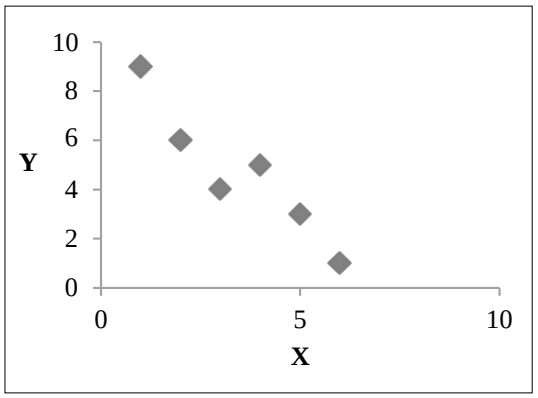
Diagrammatically correlation can be studied by scatter diagram. This is presented in figure-1. To plot a scatter diagram, a dot is provided for each pair of data for X and Y, plotting the value in X axis and That of Y on respective Axis. More closer and the arranged point shows higher correlation between two variables. Analysis of the strength of relationship is based on the trend which is seen in scatter diagram. If increase in the value of one variable makes increase in the value of other variable, (direct relationship), then the correlation is said to be positive whereas if the scatter shows opposite trend to that then the relation is negative. (Shrestha, Khanal, & Kafle, 2014).

Following scatter diagram helps to clearly the different types of correlation between two variables X and Y.

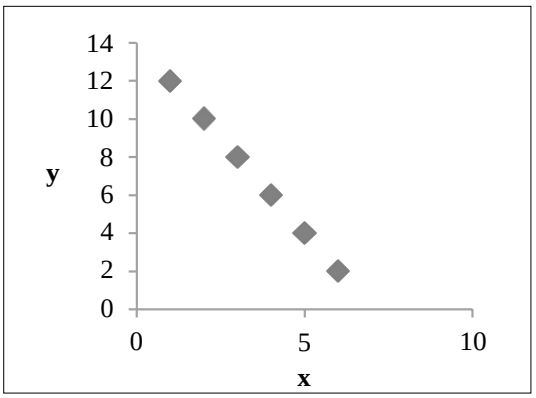
Fig-1: Scatter diagram



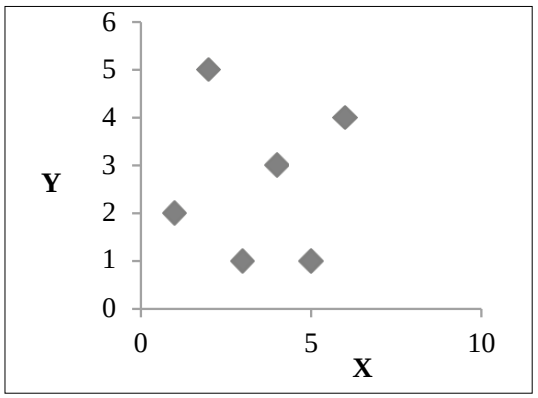
Perfect Positive correlation(r = +1)



Highly negative correlation



perfect negative correlation(r = -1)



No correlation (r =0)

(Fig Source: (Shrestha, Khanal, & Kafle, 2014))

1.3 Karl Pearson's correlation coefficient:

This is mathematical method to study the degree of association between two variables. It is used to study the correlation between two quantitative variables and denoted by r. Formula to calculate Karl Pearson's correlation coefficient is as follow (Sthapit, Yadav, Khanal, & Dangol, 2017) -

$$r = \frac{\text{cov}(X, Y)}{\sigma_x \sigma_y}$$

$$\text{or, } r = \frac{n\Sigma XY - \Sigma X \Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

1.4 Spearman's rank correlation:

To study the degree of association between two variables whose values are written in rank, rank correlation is used. For quantitative variables ranks can be provided according to their increasing or decreasing order of magnitude. Rank correlation is denoted by r_s. and its formula for calculation is as

$$r_s = 1 - \frac{6\,\Sigma d^2}{n^3 - n} \text{ ; When the ranks are not repeated.}$$

$$= 1 - \frac{6\left[\Sigma d^2 + \frac{1}{12}(m_1^3 - m_1) + \frac{1}{12}(m_2^3 - m_2) + \ldots\ldots\ldots\ldots\right]}{n^3 - n} \text{ ; when ranks are repeated (Magnello, 2009)}$$

1.5 Kendal tau:

It also rank correlation and can be used in the case where spearman's rank correlation can be calculated. It is denoted by ɩ(tau). Formula to calculate Kendal tau is as

$$\tau = \frac{\quad}{(\ )} \text{ ; when ranks are not repeated}$$

$$\frac{\quad}{\sqrt{(\ )}\ \sqrt{(\ )}} = \text{ ; when ranks are repeated}$$

(Gupta & Kapoor, 2014)

1.6 Interpretation of Correlation Coefficient:

Correlation calculated using any formula and method stated above can be interpreted as below

If r = 1, the correlation is said to be perfect positive.

If r = -1, the correlation is said to be perfect negative.

If r = 0, the variables X and Y are said to be uncorrelated.

If $0 < r \geq 0.4$, low correlation.

If $0.4 \leq r < 0.7$, moderate correlation.

If $0.7 \leq r < 1$, high correlation.

The value of correlation coefficients nearer to +1 or -1 be interpreted as very high positive or negative correlation and nearing zero is considered as very low (Gupta & Kapoor, 2014).

1.7 Partial correlation:

Correlation between two variables keeping the effect of remaining variable constant is partial correlation. If we are interested to study the relationship between two variables X_1 and X_2 while there exists another variable X_3 then the correlation between X_1 and X_2 keeping the value of X_3 constant is partial correlation between X_1 and X_2 keeping X_3 constant, denoted by $r_{12.3.}$ Value of partial correlation lies in between -1 and +1.

$$r_{12.3} = \frac{\qquad\qquad}{\sqrt{(\qquad)\ (\qquad)}}$$

1. 8 Multiple Correlation:

Correlation between predicted and the actual values of the dependent variable in a linear regression model that includes an intercept. In other words it is the relationship between dependent variable and joint effect of independent variable on dependent variable In statistics, the coefficient of multiple correlation is a measure of how well a given variable can be predicted using a linear function of a set of other variables. If X_1 be dependent variable which is described by X_2 and X_3 then the correlation between actual value of X_1 predicted value of X_1 is denoted by $R_{1.23,}$ in other way, it is the correlation between dependent variable X_1 and joint effect of X_2 and X_3 on X_1 The value of multiple correlation lies in between 0 and 1.

$$R_{1.23} = \sqrt{\qquad\qquad}$$

1.9 Regression analysis:

Regression analysis tries to study the relationship between two or variables with the help of equation, the equation is called regression line. The line is also called line of best fit since it is obtained by the method of least square. Least Square Method is estimation of parameters of regression equation by minimizing the error sum of square of dependent.

Regression analysis established the nature of relationship between two or more variables and then estimates the unknown variable (dependent variable) with the help of known variable (independent variables). In other words there are two types of variables in a regression analysis. The variables, which is used to predict the variable of interest is called the independent or explanatory variable or predictor, and the variable whose value is to be predicted is called the dependent variable or explained variable or regressed. (Montgomery, 1982)

1.10 Simple regression:

If relationship between two (one dependent and other independent) variables is studied at a time then the regression is called simple, whereas the study of more than two variables at a time is multiple.

If Y is a dependent variable and X is an independent variable then regression equation of Y is-

$Y = a + b X$

Where,

a = y intercept = constant = value of Y when X = 0

b = regression coefficient = slope coefficient = change in the value of Y per unit change in the value of X.

1.11 Multiple Regressions:

Let 'y' is the dependent variable and x_1, x_2, x_3 ..... x_k be the 'k' independent variables. Then the multiple regression model is defined as

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots\ldots\ldots\ldots + \beta_k x_k + e$$

Where,

y = dependent variable and x_1, x_2, x_3 …… x_k are independent variables.

β_0 = y-intercept.

β_1 = Slope of y with variable x_1 holding the remaining variables x_2, x_3 …,x_k constant or Regression coefficient of y on x_1 holding the remaining variables x_2, x_3 …… x_k constant. And so on. (Dendukuri & Reinhold, 2005)

Some pre-requisities to carry linear regression model are

- There is linear relationship between quantitative dependent and independent variables
- There is no presence of autocorrelation of residuals.
- The mean of residuals is zero.
- There is equal variance of residuall or presence of homoscedasticity.
- The independent variables are uncorrelated with errors.
- There is absence of multicollinearity. (Zaid, 2015)

1.12 SPSS

SPSS refers to Statistical Package for Social Science. It is statistical software which eases to compile and analyze data. We can compile or entry collected primary data or secondary as same as Microsoft Excel. Its menu bar is helpful to analyze the data thus entered easily. Many statistical analysis can be carried using SPSS (Arkkelin, 2014).

Many researchers have applied the correlation and regression analysis in their thesis, articles and their documents, however; they are not yet confident for the appropriate use of correlation and regression analysis and how to fit these statistical tools in their research works. In some cases, their interpretation may mislead their research studies. Many novice researchers are willing to use correlation and regression analysis but they don't know how to use these tools during their data analysis. The primary objective of this study is to share knowledge on regression and correlation analysis and required conditions to use in their research paper.

2. Method & Materials

This study is based on sampled secondary data of 423 maternity women respondents admitted in Chitwan Medical Sciences(CMS), Bharatpur, Chitwan, Nepal during the period 2017 July to August 2017 for maternity. The data used in this study were accessed via library of Chitwan Medical Sciences. The sample data of infant's ages and weight were entered into computer software (SPSS) and analyzed using regression and correlation. Different published articles were googled through online resources, for example, google, bookboon.com, uef.fi, and http://www.oxfordcollege.edu.np. All the research materials were embedded in correlation and regression analysis. The collected materials were initially observed their abstracts, methods and findings to find the deep knowledge on the research phenomenon.

3. Results & Discussion

To study the association between quantitative variables, correlation analysis can be carried in SPSS. To start this analysis, at first select Analyze then define the variables between which variable researchers wants to determine correlation and then choose Pearson's correlation, Kendal tau or spearman's according to the nature of data. For test of significance tail of the test can be defined. After completing these actions

and clicking on ok button an output window will show result of correlation analysis as in

Table 1. Correlation output table using SPSS

		Age of respondent in month	Height of respondent in cm
Age of respondent in month	Pearson Correlation	1	.853**
	Sig. (2-tailed)		.000
	N	423	423
Height of respondent in cm	Pearson Correlation	.853**	1
	Sig. (2-tailed)	.000	
	N	423	423
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 1 is correlation analysis output table for correlation between age and height of respondents. The correlation coefficient is 0.853 which is high degree of positive correlation between height and weight of the respondents. Also the correlation coefficient is significant as its p-value is 0.00 and is less than significance level($\alpha = 5\ \%$).

To find out how these two variables are related regression analysis is carried. To carry this analysis researcher has selected 'Analyze' then 'Regression' and then 'Linear' successively. Then researcher define dependent and independent and independent variable and then clicking on 'Ok', following output table is obtained as shown in Table-2, Table-3 and Table-4.

Table 2. Model Summary

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.853[a]	.728	.727	7.67832

a. Predictors: (Constant), Age of respondent in month

Table 2 shows coefficient of determination (R square) 0.728, which means 72.8% variation in dependent variable (Height) is explained by independent variable (Age).

Table 3. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66311.832	1	66311.832	1124.755	.000[b]
	Residual	24820.758	421	58.957		
	Total	91132.590	422			

a. Dependent Variable: Height of respondent in cm

b. Predictors: (Constant), Age of respondent in month

Table 3 tries to test overall goodness of fit of fitted regression model. From above table it can be concluded that the fitted model is significant as P-value of F statistics is 0.00 and it is less than level of significance level($\alpha = 5\%$).

Table 4. Coefficient table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	59.350	0.679		87.373	0.000
Age of respondent in month	0.811	0.024	0.853	33.537	0.000

a. Dependent Variable: Height of respondent in cm

Coefficient table helps to determine the regression equation, the column Unstandardized Coefficients and its sub column 'B' provides the regression coefficients. First one is constant or y intercept and second one is regression coefficient of height (Y) on age(X). Hence the regression equation using coefficient table is

$$\widehat{Y} = 59.35 + 0.811\ X$$

The regression coefficient of height on age is found to be 0.811 which implies that any child which is one month elder than other child is 0.811 centimeter taller than earlier. Also, the regression coefficient is

significant as p-value (0.00) is less than level of significance level ($\alpha = 5\ \%$).

4. Discussion

The results show that using correlation and regression via SPSS is useful for the novice researchers. The results also highlighted that the using correlation and regression is embedded only in quantitative data. In practical life researcher can find many quantitative variables which are related to each other, their degree of relationship can be measured by correlation and how two or more variables are related can be described by an equation, e.g. an equation is regression equation. Manually, the calculation of regression equation and correlation is very complex for big data ,so it requires software via SPSS which is very easy and faster. The results also highlighted that correlation and regression are two key data analysis tools in quantitative approach because Logistic Regression Model helps in predicting probability of occurrences of y dependent variable to x independent variables, when the dependent variable is dichotomous. Researchers can use dichotomous variables, e.g. health status(sick or not), employment status(employed or unemployed), labour force participation (part or not part of the labour force) and family planning method (which type). The results also summarized that Logistic Regression Analysis is more flexible method because it makes no assumptions about the nature of relationship between independent and dependent variables. The limitations of this study are the secondary data analysis, limited research materials, limited knowledge on statistical tools, limited literature review, limited areas of research knowledge, limited knowledge on correlation and regression analysis. Due to these limitations of this research, the current research cannot give the guarantee for the radiality and validity of data and findings. It is recommended that future research has to focus on rich literature review and primary research on how correlation and regression can be effectively use in data analysis processes of quantitative methods. It is also recommended that a details steps of correlation and regression analysis has to focus in future research study to make helpful for the novice researchers.

Reference

Arkkelin, D. (2014). *Using Spss to Understand Research and Data Analysis.* Valparaiso: Valparaiso University.

Dendukuri, N., & Reinhold, C. (2005). Correlation and Regression. *American journal of Roentgenology*, 3-18.

Draper, N. R., & Smith, H. (2011). *Applied Regression Analysis.* Noida: Wiley India Pvt. Ltd.

Gujarati, D. N., C, P. D., & Gunasekar, S. (2015). *Basic Econometrics.* New Delhi: McGraw Hill Education (india) Pvt. Ltd.

Gupta, S. C., & Kapoor, V. K. (2014). *Fundamentals of Mathematical Statistics.* Mumbai: Sultan Chand and Sons.

Magnello, M. (2009). Karl Pearson and the Establishment of Mathematical Statistics. *MInternational Statistical Review / Revue Internationale De Statistique*, 3-29.

Mehta, B. C., & Kapoor, K. (2005). *Fundamentals of Econometrics.* Mumbai: Himalaya Publishing House.

Montgomery, D. (1982). *Introduction to linear Regression Analysis.* New Delhi: Willy.

Shrestha, M. P., Khanal, P. R., & Kafle, S. C. (2014). *Business Statistics.* Kathmandu: Sabdartha Publication.

Sthapit, A. B., Yadav, R. P., Khanal, S. P., & Dangol, P. M. (2017). *Fundamentals of Statistics.* Kathmandu: Asmita Publication.

Zaid Mohamed Ahmed, (2015). Correlation and Regression Analysis; Statistical Economic and Research and Training Centre for islamic countries.