RETHINKING INDIA'S GROWTH THROUGH THE PERSPECTIVE OF KNOWLEDGE AMONG CITIZENRY ON CIRCULAR ECONOMY: CIRCULAR ECONOMY THE KNOWLEDGE PERSPECTIVE

SAJJAN .S
Ph.D. Research Scholar, Department of Commerce
Bharathiar University, Coimbatore

KALEESHWARI .S
Senior Research Scholar, Ph.D. Research Scholar, Department of Commerce
Bharathiar University, Coimbatore

Abstract
Recreating the resource for sustainable development is that effectively utilizes waste by eliminating waste and collecting it. Therefore, the main goal of the concept is waste reduction, which enables economic growth and development. India is one of the developing countries adapting to new changes and new phenomena in technology. The circular economy is an inherent economic practice. This current research focuses on individual awareness, behavior, and knowledge to embrace and adapt to a circular economy in their daily lives. The authors attempt to analyze the circular economy concepts of reduce, reuse, and recycle that influence human behavior using questionnaires, and to ascertain the precise impact of demographic factors on circular economy concepts. Results were obtained using statistical tools such as dimensionality reduction with Anova. The study also concludes that it is well accepted among individuals and no similar differences in perceptions, behaviors, and knowledge of circular economy factors.
Keywords: *circular economy, awareness, knowledge, citizenry.*

Introduction

The concept of circulatory modulation has been developed for the manufacturing and consuming, which involving all important aspect of the reusing,repairing, refurbishing and recycling existing resource at most extend. So commonly indicates the reducing waste to exact minimum, which means a product at its end life, can be kept for recycling in the economy. So, a product can be used much productively again and again by creating further value to the existing old one.Circular economy has its benefits in protecting the environment, reusing and recycling may minimize the use of natural resources it will also increase the biodiversity growth.it will create more efficient and sustainable production producing products with reduction in energy and resource consumption. It reduces the raw material dependence, so recycling the raw materials will mitigate the supply, price volatility, availability and import dependency. This is not only maintenance and effective use but it is also about increasing the competitiveness, stimulates, innovation and boost economic growth and create jobs.

Review of Literature

Practically speaking, the Circular Economy (CE) can take three distinct forms that are connected to product design and business models. The first tactic entails designing durable goods and increasing product life in order to lengthen the product lifecycle and increase its usage. The second tactic connects the post-use stage with manufacturing by encouraging recycling in order to end the loop. The third technique (Bocken et al., 2016) focuses on simplifying and reducing overall consumption by minimising resource utilisation per product.

The application of these techniques is made easier by the 3R framework, which Kirchherr et al. (2017) describe as a guiding concept for use at various production stages. Since both the activity framework (Reduce-Reuse-Recycle) and the strategy framework

(slowing, closing, and narrowing the loop) are important components of the Circular Economy (CE), we conceptualise its core principles in this research as an amalgamation of both.

A promising strategy to strike a balance between economic expansion and environmental protection is the idea of a circular economy (CE). It is, nevertheless, a contentious idea with a range of ramifications in numerous fields (Korhonen et al., 2018).

The idea is sometimes referred to as a sustainable initiative that aims to gradually cut off economic activity from depleting finite resources and removing waste from the process (EMF, 2015). By reducing waste and pollution, extending the useful life of products and materials, and reviving natural systems, the Circular Economy intends to achieve a fundamental shift in thinking that will result in economic, environmental, and social advantages (EMF, 2015).

As discussed by Kirchherr et al. (2017), scholars and practitioners have used a variety of R frameworks throughout the years, ranging from 3R to 10R, with regard to the core concepts underlying Circular Economy (CE). Within a 10R paradigm, Reike et al. (2018) have critically investigated numerously.

Norzaharah, Abdul, Fathiyah (2023) The purpose of this study was to determine undergraduate students' degree of understanding regarding the circular economy idea. This study employs a quantitative methodology by surveying 35 undergraduate students at Universiti Teknologi Malaysia with a questionnaire. The strong reliability of the questionnaire items is indicated by the Cronbach's alpha rating of 0.93. Using SPSS software version 20, the collected data was examined and presented in a descriptive manner. The study's findings indicate that the circular economy knowledge domain consists of seven components, each of which has a high mean value. This demonstrates how well-versed UTM undergraduates are in the circular economy. The findings of this study offer stakeholders a significant advantage in developing suitable programs and curriculum for undergraduate students in higher education establishments.

Varkey, Roopali (2023) The purpose of this article is to evaluate dental professionals' and technicians' attitudes and understanding regarding the circular economy and BMW management. Techniques The design of this study was cross-sectional. 640 people were included in the sample, which was estimated based on the results of the pilot study. The five groups' knowledge differed in a way that was statistically significant ($p < 0.001$). Although technicians had the lowest mean overall attitude scores (7.50 ± 1.84), the majority of participants had positive attitudes toward the circular economy. The knowledge and attitude ratings showed a positive linear association.In conclusion Compared to other dental professionals and technicians, dental faculty members possessed a notably greater level of expertise.

Mariana Cardoso, Marie,Pia (2024) Behavior and decision-making, such as how businesses apply Circular Economy (CE) strategies, can be influenced by perception and awareness. On the other hand, empirical study on this subject is scarce. Thus, we evaluated the opinion and awareness of representatives from water-intensive and bio-based industries toward the CE concept based on interviews and a survey with 10 enterprises in Sweden. According to our findings, CE is primarily considered to mean zero waste, with ecodesign and resource efficiency serving as its guiding principles. Important components of CE that are either missing or only partially addressed include consumption, social aspects, the regenerative role of CE, cooperation, and industrial symbiosis. The main benefit from implementing circular strategies is economic, and the main barrier is the lack of financial resources.

Statement of the Problem

The model of economy on circulation which reduces the space between the manufacturing and atmospheric cycle. It restores destructions with replacing it with the natural energy sources which eliminates the harmful chemist. So, it is based on the nature’s cycles and designs of the production and reusing energy.it makes the distinction between the technical and biological cycles. It regenerates living system with the help of reusing and reducing the usage of resources. Since the unique concept circular

economy is a new dimension which occupies a major contribution from the resource's reduction and efficient use of existing resources by reusing it. This study has been made on analyzing the current understanding of the individuals of the society in carrying forward the usage of circular economy concept in the day-to-day life. And to get a clear picture on the knowledge and people's behavior towards the reuse reduce and recycle concept. With the help of questionnaire and statistical tools the study has been analyzed and results have been derived. the above problem is discussed using the research problem:

- What level of knowledge does the citizenry have?
- Is there any difference among the demographic factor their knowledge level of citizenry?

Aim and Purpose

- To investigate the knowledge level amongcitizenry on circular economy in Tamilnadu.
- To examine the difference among citizenry on knowledge level on circular economy based on demographic factor in Tamilnadu.
- To analyze the impact of demographic factors on Knowledge level of citizenry on circular economy in Tamilnadu.

Presumptions

- There is no significant difference among knowledge level and demographic factors of citizenry in Tamilnadu.
- There is no significant impact of demographic factors on Knowledge level of citizenry on circular economy in Tamilnadu

Methods and Analysis

Analytical research has been carried out.

Data Source

The data are primary source of information, gathered among the informant with the help of a well-structured questionnaire.

Sample Size

The study has selected 152 respondents for the analysis.

Sampling Technique

Random sampling method has been adopted for the study.

Tools used for the Study

Researcher has used analytical tools likely to test the reliability, factor loading and ANOVA and regression

Investigation and Examination

Table 1 Population Tally of the Informants

Sl. No	Characteristics	Category	Frequency	Percentage
1	Gender	Male	38	25.0
		Female	114	**75.0**
2	Age Group	15-17	0	0
		18-20	4	2.63
		21-23	30	19.73
		24-26	24	15.78
		27-29	36	**23.68**
		Above 30	22	14.47
		Above 40	10	6.57
		Above 50	4	2.63
3.	Educational Qualification	10th	0	0
		12th	0	0
		Under Graduate	16	10.52
		Post Graduate	76	**50.00**
		Professionals	60	39.47
4.	Occupation	Students	50	**32.8**
		Government employee	24	15.78
		Private Employee	38	25.0
		Self Employed	6	3.94
		Unemployed	12	7.89

Source: computed using Spss

Table 1 Reliability Test for the Knowledge of Citizenry on Circular Economy

Reliability	
Cronbach's Alpha	N of Items
.929	21

Source: computed using Spss

The Cronbach's alpha value of .929 is above the required value, indicating good consistency among items, and the instruments developed for the study are reliable. It can be concluded that all variables are reliable as the values are above .929, which is acceptable.

Table 2 KMO and Bartlett's Test for the Knowledge of Citizenry on Circular Economy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.795**
Bartlett's Test of Sphericity	Approx. Chi-Square	567.719
	df	21
	Sig.	**.000**

Source: computed using Spss

According to the table, the KMO statistic is higher than .795, comfortably exceeding the threshold value of 0.5. The Bartlett's test for sphericity producing a highly significant result of .000 supports the conclusion that the sample size is enough for conducting factor analysis and encourages further testing.

Table 3 Explaining the Select Variables of Knowledge Level

Variables	Explanation
K1	[Saving water and Electricity every day is a circular economic effort]
K2	[Reusing or Recycling goods in circular economy does not only aim to reduce waste on earth, but the most important thing is to reduce the exploitation of natural resources.]
K3	[The 5R strategy, which includes the behaviours of Reuse, Reduce, Refurbish, Repair, and Recycle, is the essential tenet of the circular economy.]
K4	[The circular economy view opposes the conventional economic view,namely production use waste in order to reduce acts of exploitation of nature.]
K5	[Promoting a circular economy requires effective waste management and reduction of various waste types.]
K6	[A circular economy emphasizes a business owner to be responsible for people's welfare]
K7	[A circular economic endeavour is choosing beverages in glass bottles rather than plastic ones.]

Table 4 ANOVA for Test of Significant Difference among Gender and Knowledge Level of CITIZENRY on Circular Economy

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
K1	Between Groups	7.533	1	7.533	7.708	**.006**
	Within Groups	144.627	148	.977		
	Total	152.160	149			
K2	Between Groups	3.521	1	3.521	4.478	**.036**
	Within Groups	116.373	148	.786		
	Total	119.893	149			
K3	Between Groups	2.203	1	2.203	2.848	.094
	Within Groups	114.490	148	.774		
	Total	116.693	149			
K4	Between Groups	2.966	1	2.966	3.428	**.056**
	Within Groups	128.074	148	.865		
	Total	131.040	149			
K5	Between Groups	.572	1	.572	.807	.371
	Within Groups	104.922	148	.709		
	Total	105.493	149			
K6	Between Groups	.133	1	.133	.151	.698
	Within Groups	129.627	148	.876		
	Total	129.760	149			
K7	Between Groups	.005	1	.005	.003	.955
	Within Groups	227.995	148	1.541		
	Total	228.000	149			

Source: computed using Spss

The table presents the findings of a one-way ANOVA investigating the association between gender and citizens' levels of Circular Economy understanding. Notably, for variables K1, K2, and K4, the significance level is lower than 0.05. Consequently, we affirm that there is a significant difference in gender influence and reject the null hypothesis for these parameters. Contrarily, variables K3, K5, K6, and K7 show a significance level over 0.05, supporting the null hypothesis and showing no appreciable gender-related knowledge variance.

Table 5 ANOVA for test of significant difference among age group and knowledge level of Citizenry on circular economy

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
K1	Between Groups	4.338	6	.723	.703	.648
	Within Groups	149.215	145	1.029		
	Total	153.553	151			
K2	Between Groups	5.520	6	.920	1.157	.333
	Within Groups	115.322	145	.795		
	Total	120.842	151			
K3	Between Groups	7.639	6	1.273	1.668	.133
	Within Groups	110.676	145	.763		
	Total	118.316	151			
K4	Between Groups	9.490	6	1.582	1.887	.087
	Within Groups	121.563	145	.838		
	Total	131.053	151			
K5	Between Groups	9.448	6	1.575	2.344	**.034**
	Within Groups	97.394	145	.672		
	Total	106.842	151			
K6	Between Groups	4.937	6	.823	.942	.467
	Within Groups	126.642	145	.873		
	Total	131.579	151			
K7	Between Groups	19.477	6	3.246	2.227	**.044**
	Within Groups	211.365	145	1.458		
	Total	230.842	151			

Source: computed using Spss

The results of a one-way ANOVA comparing Age groups and Citizenry Knowledge levels about Circular Economy are shown in the table. The null hypothesis for variables K5 and K7 is rejected since the significance value for those factors is less than 0.05. This suggests a significant difference between age groups. Contrarily, variables K1, K2, K3, K4, and K6 have significance values above 0.05, supporting the null hypothesis and suggesting that there is no appreciable difference in knowledge levels between age groups.

Table 6 ANOVA for test of significant difference among educational qualification and knowledge level of Citizenry on circular economy

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
K1	Between Groups	7.368	4	1.842	1.852	.122
	Within Groups	146.185	147	.994		
	Total	153.553	151			
K2	Between Groups	6.415	4	1.604	2.060	.089
	Within Groups	114.427	147	.778		
	Total	120.842	151			
K3	Between Groups	3.158	4	.790	1.008	.405
	Within Groups	115.157	147	.783		
	Total	118.316	151			
K4	Between Groups	7.064	4	1.766	2.094	.085
	Within Groups	123.989	147	.843		
	Total	131.053	151			
K5	Between Groups	3.897	4	.974	1.391	.240
	Within Groups	102.945	147	.700		
	Total	106.842	151			
K6	Between Groups	4.017	4	1.004	1.157	.332
	Within Groups	127.562	147	.868		
	Total	131.579	151			
K7	Between Groups	2.790	4	.697	.450	.773
	Within Groups	228.053	147	1.551		
	Total	230.842	151			

Source: computed using Spss

The results of a one-way ANOVA examining the association between educational attainment and citizenry's level of knowledge on circular economy are shown in the table that is currently being given. All of the components (K1, K2, K3, K4, K5, K6, and K7) had significance values in this analysis that are greater than 0.05. Since there is no evidence of a substantial difference in knowledge levels between educational backgrounds, the null hypothesis is accepted.

Table 7 ANOVA for test of significant difference among Employment Level and knowledge level of Citizenry on circular economy

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
K1	Between Groups	12.632	4	3.158	3.294	**.013**
	Within Groups	140.920	147	.959		
	Total	153.553	151			
K2	Between Groups	12.714	4	3.178	4.321	**.002**
	Within Groups	108.128	147	.736		
	Total	120.842	151			
K3	Between Groups	4.939	4	1.235	1.601	.177
	Within Groups	113.377	147	.771		
	Total	118.316	151			
K4	Between Groups	2.186	4	.546	.623	.647
	Within Groups	128.867	147	.877		
	Total	131.053	151			
K5	Between Groups	5.000	4	1.250	1.804	.131
	Within Groups	101.842	147	.693		
	Total	106.842	151			
K6	Between Groups	2.040	4	.510	.579	.678
	Within Groups	129.538	147	.881		
	Total	131.579	151			
K7	Between Groups	6.210	4	1.552	1.016	.401
	Within Groups	224.632	147	1.528		
	Total	230.842	151			

Source: computed using Spss

The results of a one-way ANOVA analysis that looked at the association between employment level and citizens' familiarity with the circular economy are shown in the table. For the components K1 and K2, it is noteworthy that the significance value is below 0.05. In light of these findings, we reject the null hypothesis for these variables, indicating a substantial difference in Employment Level. Contrarily, factors K3, K4, K5, K6, and K7 exhibit a significant value over 0.05, allowing the null hypothesis to be accepted and showing no significant difference regarding the impact of employment level on knowledge.

Table 8 Model Summary on Gender and the Knowledge level of Citizenry on Circular Economy

Model	R	R Square	F
1	.367[a]	.135	3.157

Source: computed using Spss

The table explains the model summary for the Gender and the Knowledge level of Citizenry on Circular Economy. The R value indicates the relationship between Gender and Knowledge level of citizenry at .367. and the R square value shows the variation.

Table 9 Coefficient for Gender and the Knowledge level of Citizenry on Circular Economy

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	1.677	.110		15.318	.000
	K1	-.156	.051	-.338	-3.048	**.003**
	K2	.033	.088	.064	.381	.704
	K3	-.086	.072	-.162	-1.185	.238
	K4	.141	.048	.282	2.904	**.004**
	K5	-.034	.074	-.061	-.462	.645
	K6	.030	.059	.059	.506	.614
	K7	.050	.037	.132	1.357	.177

Source: computed using Spss

The table of coefficient between Gender and the Knowledge level of Citizenry on Circular Economy. The significant value of K1 and K4 is below 0.05 which shows the impact between gender and knowledge level of citizenry. And rest of the variables such as K2, K3, K5, K6, K7 has a significant above significance level. Which indicates no impact of these factors with respect to gender.

Table 10 Model Summary on Age Group and the Knowledge level of Citizenry on Circular Economy

Model	R	R Square	F
1	.319[a]	.102	2.338

Source: computed using Spss

The table explains the model summary for the Age group and the Knowledge level of Citizenry on Circular Economy. The R value indicates the relationship between Age group and Knowledge level of citizenry at .319. and the R square value shows the variation.

Table 11 Coefficient for Age group and the Knowledge level of Citizenry on Circular Economy

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.671	.333		14.038	.000
	K1	.423	.157	.303	2.692	**.008**
	K2	-.322	.268	-.204	-1.200	.232
	K3	-.020	.222	-.012	-.090	.929
	K4	.222	.148	.147	1.504	.135
	K5	-.254	.226	-.152	-1.127	.262
	K6	-.103	.179	-.069	-.577	.565
	K7	-.021	.112	-.018	-.187	.852

Source: computed using Spss

The table of coefficient between Age group and the Knowledge level of Citizenry on Circular Economy. The significant value of K1 is below 0.05 which shows the impact between gender and knowledge level of citizenry. And rest of the variables such as K2,K3,K4,K5,K6,K7 has a significant value above significance level indicating no impact of these factors with respect to age group.

Table 12 Model Summary on Educational Qualification and the Knowledge level of Citizenry on Circular Economy

Model	R	R Square	F
1	.251[a]	.063	1.378

Source: computed using Spss

The table explains the model summary for the Educational Qualification and the Knowledge level of Citizenry on Circular Economy. The R value indicates the relationship between Gender and Knowledge level of citizenry at .251. and the R square value shows the variation.

Table 13 Coefficient for Educational Qualification and the Knowledge level of Citizenry on Circular Economy

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.223	.181		23.281	.000
	K1	.178	.086	.239	2.079	**.039**
	K2	-.340	.146	-.405	-2.326	**.021**
	K3	.010	.121	.011	.080	.936
	K4	-.012	.081	-.015	-.152	.879
	K5	.114	.123	.128	.928	.355
	K6	-.065	.098	-.081	-.666	.507
	K7	.038	.061	.062	.616	.539

Source: computed using Spss

The table of coefficient between educational qualification and the Knowledge level of Citizenry on Circular Economy. The significant value of K1 and K2 is below 0.05 which shows the impact between educational qualifications and knowledge level of citizenry. And rest of the variables such as, K3,K4,K5,K6,K7 has a significant value above 0.05 representing no impact of these factors with respect to educational qualification.

Table 14 Model Summary on Employment and the Knowledge level of Citizenry on Circular Economy

Model	R	R Square	F
1	.353[a]	.124	2.925

Source: computed using Spss

The table explains the model summary for the Employment and the Knowledge level of Citizenry on Circular Economy. The R value indicates the relationship between Gender and Knowledge level of citizenry at .353. and the R square value shows the variation.

Table 15 Coefficient for Employment and the Knowledge level of Citizenry on Circular Economy

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.335	.303		7.703	.000
	K1	-.272	.143	-.211	-1.899	**.060**
	K2	-.377	.244	-.259	-1.542	.125
	K3	.110	.202	.075	.544	.587
	K4	.253	.135	.181	1.877	**.052**
	K5	-.092	.206	-.059	-.446	.656
	K6	.042	.163	.030	.254	.800
	K7	.201	.102	.191	1.958	**.052**

Source: computed using Spss

The table of coefficient between Employment and the Knowledge level of Citizenry on Circular Economy. The significant value of K1, K4 and K7 is below 0.05 which shows the impact between employment and knowledge level of citizenry. And rest of the variables such as K2, K3, K5, K6 has a significant value above significance level revealing no significant impact of these factors with respect to employment.

Findings of the Study

- The factors K1, K2 and K4, have a significant difference among the gender
- Factors such as K3, K5, K6 and K7 has no difference among gender on knowledge.
- The factors K5and K7, has a significant difference among the Age group
- Factors such as K1, K2, K3, K4 and K6 has a difference among Age group on knowledge.
- The factors such as K1, K2, K3, K4, K5, K6 and K7 have no difference among educational qualification on knowledge.
- The factors K1and K2, has a significant difference among the employment level
- Factors such as K3, K4, K5, K6 and K7 has no difference among Employment level on knowledge.
- The significant value of K1 and K4 shows the impact between gender and knowledge level of citizenry.
- And rest of the variables such as K2, K3, K5, K6, K7 has no significant impact of these factors with respect to gender.
- The significant value of K1 shows the impact between gender and knowledge level of citizenry.
- And rest of the variables such as K2, K3, K4, K5, K6, K7 has no significant impact of these factors with respect to age group.
- The significant value of K1 and K2 shows the impact between educational qualifications and knowledge level of citizenry.
- And rest of the variables such as, K3, K4, K5, K6, K7 has no significant impact of these factors with respect to educational qualification.
- The significant value of K1 and K4 shows the impact between employment and knowledge level of citizenry.
- And rest of the variables such as K2, K3, K5, K6, K7 has no significant impact of these factors with respect to employment.

Conclusion

Circular economy is one such concept taking towards the sustainable environment and sustaining to utmost goal. It helps in tackling the environmental challenges with respect to 5 R 's concept. The economy with Reducing, Reusing, Refurbishing, Repairing and Recycling will help in reducing the waste and increase the recycling of used products to maintain balance in the economy.in accordance with resilient alternative in balancing and minimizing the waste and pollution as a goal towards climate control, this paper which is focusing on the knowledge among citizenry of Tamilnadu on circular economy. Is clearly helping in understanding the knowledge among individual on circular economy 55% of population are familiar of the concept and they are 85.5% of the individual reuse and recycle. And with respect to the difference on the level of knowledge gender, Age group and the employment which makes difference with respect to certain factors under knowledge. And there is impact of the demographic factors on the familiarity of the citizenry. So the knowledge level of a person on circular economy is decided and influenced by the demographic factors and it is much evident from the results of the analysis that almost the respondents are much aware and they are already into the practice of circular economy but still the policy makers must stress on focusing the stringent measure to full-fledged spreading the concept to achieve the goals made towards the circular economy and it will be more complimentary in near future.

References

1. Bocken, N.M., de Pauw, I., Bakker, C., van der Grinten, B., 2016. Product design and business model strategies for a circular economy. Journal of Industrial and Production Engineering 33 (5), 308–320.
2. Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: An analysis of 114 definitions. Resources, Conservation and Recycling 127, 221–232.

3. Korhonen, J., Nuur, C., Feldmann, A., Birkie, S.E., 2018a. Circular economy as an essentially contested concept. Journal of Cleaner Production 175, 544–552.
4. Mariana,Maria,Pia(2024) Perception and Awareness of Circular Economy within water-intensive and bio-based sectors: Understanding benefits and barrier, Journal of cleaner production,Volume 464,July 2024,142725.
5. Norzaharah,Abdul,Fathiyah (2023) A study on level of students knowledge towards circular economy, International Journal of Academic Research in Progressive Education and Development, Volume 12, Issue 3.
6. Reike, D., Vermeulen, W.J.V, Witjes, S, 2018. The circular economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options. Resources, Conservation and Recycling 135, 246–264.
7. Varkey,Anil,Roopali (2023) Knowledge and Attitude Toward the Practice of Circular Economy in Conjunction with Biomedical Waste Management Among Dental Practitioners and Technicians in Belagavi, India, Journal of Laboratory Physicians, 2023.
8. Vrijhoef, R. (2011). Supply Chain Integration in the Building Industry: The Emergence of Integrated and Repetitive Strategies in a Fragmented and Project-driven Industry. Retrieved from (29 Jan 2022) https://books.google.nl/books?id=34p26fH5Z%5C_ kC. Winch, G. (2010). Managing construction projects: an information processing approach. UK.: Blackwell Pub.