



## PREFERENCES OF MUSICAL ELEMENTS IN RINGTONE SELECTION: A SURVEY STUDY IN UNIVERSITY OF SARGODHA



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### ABSTRACT

*Usage of mobile phone is growing rapidly in all over the world and nowadays, mobile phones have advanced features. The concept of ringtone selection in the coming generation is increasing day by day. This study is conducted about the musical elements (tone color, rhythm, melody and tempo) of ringtone. The objective is to examine the elements that are mostly preferred during ringtone selection. For this purpose, a questionnaire was designed and sample size of 380 respondents (students) was selected from the University of Sargodha, Punjab, Pakistan by using simple random sampling technique. Bivariate analysis was used and the results conclude that the most frequently used elements during the ringtone selection are rhythm and tempo. Moreover; chi-square test for association reveals that age and tone color have a significant relationship.*

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**Keywords:** Chi-square test, Mobile phone, Musical elements, Questionnaire, Ringtone, Sargodha.

### Contribution/ Originality

This study is purely designed to examine the preferences about musical elements (tone color, rhythm, melody and tempo) in the selection of ringtone for smart phones. The findings provide the evidence that mostly ring tones are selected on the base of rhythm and tempo, and the choice of the tone color depends on the age of the respondent.

### 1. INTRODUCTION

In very initial days of history, pigeons were considered as a loyal source to convey messages. Later, the concept of letter was introduced. Then, with the development of technology, telephone was invented by Alexander Graham bell in 1876, and today is the era of wireless communication which gives rise to mobile phones. A mobile phone is a small moveable radio, phone, which is used to talk anywhere, anytime without wires.

In ancient days, people were using clocks to see the time and to set alarms. They used monophonic sound system, to listen the music, radio, T.V and computers for entertainment and camera is used to capture the snaps and videos. With the passage of time these all functions such as text messaging, video games, recording, videos, speakers, alarm clock, calendar, calculator, etc. are available in a mobile phone. The music system is also an important feature in mobile phones. Music is found everywhere and relates to our soul. Pitch, melody, rhythm, tempo, etc. are the basic elements of music. Life is nothing without melodies and harmonies and music has the capability to express all kinds of feelings. For some people, music is the life or a passion and for others music is an amusement.

Now a day's, music could be settled as ringtones. In earlier stages, when different telephones were placed together, it was difficult to identify that which phone was ringing. To overcome this problem AT&T (American telephone & Telegraph) made first ringtone. In starting, ring tones were simple such as beep, but with the advancement in the industry of music, ring tone becomes more attractive and take the place as polyphonic and master ringtones. Today, music is also downloadable for mobile phones. A finish mobile operator, Radiolinja which is known as Elisa, made the first downloadable mobile ringtone service in 1998. Nowadays, every person has a personal mobile phone and a choice to select music as a ringtone according to their psychology, personality and taste. Ringtone also shows the cultural phenomenon of that person. This study is carried out to observe which musical element is frequently preferred by students of the University of Sargodha, Sargodha, Punjab, Pakistan.

## 2. LITERATURE REVIEW

The selection of ringtone increases day by day. Many researchers conducted research on musical ringtones like as; [Kellaris and Kent \(1993\)](#) studied the responses produced by music changing in tempo, tonality and texture. Classical and pop-style compositions were made. From the measured response, three dimensions such as pleasure, arousal and surprise were arisen. Variance analysis was applied and found that musical element tempo has a main effect on both pleasure and arousal while tonality has a main effect on both pleasure and surprise. However, texture plays a moderate role in the effectiveness of tempo and toning on the pleasure and arousal. [Rentfrow and Gosling \(2003\)](#) examined the structure and personality associated with the music preferences. Moreover; [Sullivan et al. \(2003\)](#) provide a study on sensation seeking and music preferences with the objective of investigating the relationship between awareness pursuing and music preferences. The aim of the study was to duplicate the outcomes of previous studies that relate numbers of peoples to the high level of the sensory pursuing specific type of music. The correlation test was used to measure the relationship between sensations seeking and music choice, and the result revealed that sensation seeking was found to be positively correlated with rock or loud music and negatively related with religious music.

[Zendel et al. \(2003\)](#) examined that musical power and rhythmicity has impacts on drivers. The study showed that any sort of variation in music can affect excitement level. The researchers also described that rhythmicity should have a different effect on driving at different volume level. The Analysis of variance used to analyze rhythmicity (high, medium, low) and finding depicts that no significant effect or interaction were found in original data, but when the speed data was adjusted to lower variance, a significant interaction was found. Further; [Mutispaugh et al. \(2003\)](#) studied the importance of music versus music experience in a choice of ringtone. Music importance, music experience and several personalities were taken as explanatory variables. The correlation test was used to analyze data and result revealed that music's importance was positively correlated with agreeableness and preference for rhythmic music.

[Chiou et al. \(2005\)](#) described that today's worldwide music industry is facing a greater threat piracy. In this study the hypothesis testing was used to check the factors which influence the customer's attitudes towards the music piracy. The outcome displayed that the attributive satisfaction, perceived prosecution risk, magnitude of consequence are the factors that played a vital role on customer's attitude and behavior towards the illegal downloading and plagiarized music products. [Schnieder \(2009\)](#) examined the ringtone technology in situating youthful identities in contemporary society. Moreover, [Ying et al. \(2013\)](#) studied the preference of musical elements in the musician and non-musician societies. Two groups were made, group 1 was music students and Group 2 was non-music students. Then a comparison study was made between two groups and after applying some statistical methods, researcher found major differences between them. On the same line, this study is designed to observe the selection preferences about musical ringtone elements in the University of Sargodha, Sargodha, Punjab, Pakistan.

### 3. RESEARCH METHODOLOGY

This study is about to investigate the musical elements that are mostly preferred during ringtone selection. For this purpose, a questionnaire was designed, 7 musical elements (tone color, tempo, rhythm, melody, popularity, loudness, personality) and categorical scale (positive, negative and neutral) were utilized in our study. A sample of 380 respondents (students) was selected from the University of Sargodha by the use of Cochran Formula (Kotrlík and Higgins, 2001). Bivariate analysis and chi-square test for association (Akhtar *et al.* (2014) have applied to make the inferences about the response. Software named “SPSS” (Statistical packages for social sciences) is used for the survey analysis.

### 4. RESULTS AND DISCUSSION

The purpose of this study is to find out that which type of musical elements are mostly preferred in selection of ringtone. In this stated study, participation rate is about 59% female and 41% male respondents, while among of them, 54% were belonging to undergraduate and 46% are graduate students.

**Table-1.** Gender wise analysis of the study variables (count)

1)			You prefer the tone color		
			Positive	Negative	Neutral
Gender	Male		85	9	62
	Female		95	17	112
2)			You give importance to the musical element tempo		
			Positive	Negative	Neutral
Gender	Male		89	20	47
	Female		120	24	80
3)			You prefer rhythm in ringtone selection		
			Positive	Negative	Neutral
Gender	Male		90	22	44
	Female		137	26	61
4)			During ringtone selection you have concerns on melody		
			Positive	Negative	Neutral
Gender	Male		86	22	48
	Female		122	35	67
5)			You choose the tone which is popular		
			Positive	Negative	Neutral
Gender	Male		82	28	46
	Female		136	33	55
6)			When you select ringtone you see its loudness		
			Positive	Negative	Neutral
Gender	Male		69	25	62
	Female		109	40	75
7)			You choose a ringtone that represents your personality		
			Positive	Negative	Neutral
Gender	Male		97	16	43
	Female		143	25	56

Responses (in count) of each question with respect to gender is presented in Table-1. The finding depicts that 22% male and 25% female respondents positively prefer the tone color. About the importance to musical element tempo, 23% male and 32% female respondents are in favor while 24% male and 36% female respondents positively prefer the rhythm during ringtone selection. However, 23% male and 32% female respondents have concerns on melody when they select ringtone. Further the rate of respondents that mostly selects the ring tone due to popularity are 22% from the male category and 36% are females. Mostly, people are very conscious about their personality, so

they prefer the things that are suited to their personalities. In our study, 18% male respondents and 28% females are personality conscious while selecting the ringtone of their smart phones.

Age is a very important factor that change the thoughts, ideas, feelings and living style of an individual. The age wise analysis of the variables under consideration is given in Table-2. In age wise study, 24%, 20% and 3% respondents positively preferred the tone color during selection of ringtone and in the selection of tempo as an important factor 25%, 27% and 4% out of 380 respondents give importance to musical element tempo having the age group 18-20, 21-23 and 24-above years respectively. Similarly, positive preference about rhythm in ringtone selection is 29% from 18-20 years age group while the percentage of 21-23 and 24-above years old respondents are 26% and 5%. Further, 27%, 24% and 4% respondents have positive concern on melody having the age group 18-20, 21-23 and 24-above while 29% having age group 18-20 years, 26% having 21-23 years and 3% from 24-above years prefers the ringtone which is popular in the society.

**Table-2.** Age wise comparison of each variable under consideration (count)

1)			You prefer the tone color			
			Positive	Negative	Neutral	
Age	18-20		93	13	83	
	21-23		77	8	83	
	24-above		03	01	02	
2)			You give importance to the musical element tempo			
			Positive	Negative	Neutral	
	Age	18-20		94	28	67
		21-23		101	16	51
24-above			14	00	09	
3)			You prefer rhythm in ringtone selection			
			Positive	Negative	Neutral	
	Age	18-20		110	30	49
		21-23		99	17	52
24-above			18	01	04	
4)			During ringtone selection you have concerns on melody			
			Positive	Negative	Neutral	
	Age	18-20		102	32	55
		21-23		92	24	52
24-above			14	01	08	
5)			You choose the tone which is popular			
			Positive	Negative	Neutral	
	Age	18-20		110	34	45
		21-23		97	23	48
24-above			11	04	08	
6)			When you select ringtone you see its loudness			
			Positive	Negative	Neutral	
	Age	18-20		90	34	65
		21-23		76	26	66
24-above			12	05	06	
7)			You choose a ringtone that represents your personality			
			Positive	Negative	Neutral	
	Age	18-20		131	20	38
		21-23		98	17	53
24-above			11	04	08	

Loudness in the ringtone is generally harmful, but many people take this as a significant feature of the ringtone. Our findings in the above portrait also depicts that every age group prefers it with high percentage while in selecting the ringtone that is suitable for a person’s personality, 34% are in favor of positive response having the age group 18-20 years and for 21-23 and 24-above year groups have 26% and 3% response ratio respectively.

## 5. HYPOTHESIS TESTING

Hypothesis testing plays an important role in every study for checking the significance level of a statement from a practitioner. In this section, we compare the responses of each question with respect to study variables (Age and Gender) in term that either there exists any relation between them or not. For such purpose we used the chi-square test for association which have following hypothesis;

$H_0$ : Response of specified question is not associated with study variable.

$H_1$ : Response of specified question is associated with study variable.

If the probability value (P-value) is less than the desired level of significance (0.05) then there is the evidence to reject the null hypothesis, which means that there is an association between both variables otherwise no association between them.

**Table-3.** Chi-square test of association between attributes

Attributes	Chi-square value	df	P-Value	Conclusion
Gender*tone color	5.389	2	0.068	Insignificant
Gender* tempo	1.413	2	0.493	Insignificant
Gender*rhythm	0.670	2	0.175	Insignificant
Gender*popular	2.500	2	0.287	Insignificant
Gender*loudness	1.566	2	0.457	Insignificant
Gender*personality	0.342	2	0.843	Insignificant
Age*tone color	10.048	4	0.040	Significant
Age* tempo	7.811	4	0.099	Insignificant
Age*rhythm	6.818	4	0.146	Insignificant
Age*popular	2.822	4	0.588	Insignificant
Age*loudness	2.157	4	0.707	Insignificant
Age*personality	8.801	4	0.066	Insignificant

In order to check the relationship between gender and personality, p-value 0.843 shows that there is no association between gender and personality. This means that respondents give insignificant importance to select ringtone that represent their personality. Although checking the association between gender and tone color, p-value 0.068 revealed that there is no association between gender and tone color. Gender and tempo also show an insignificant relationship at p-value 0.493. To find the relationship between gender and rhythm p-value 0.175 conclude that these two attributes are independent. When we check the association between gender and popular, we find that there is no association between gender and popularity which indicates that respondents are insignificant in choosing a popular ringtone.

Checking the association between age and tone color, p-value 0.040 shows that there is a significant relationship between age and tone color, while p-value 0.099 concludes that there is no relationship between age and tempo. Age and rhythm show an insignificant relationship, and Age and popular also have no relationship at p-value 0.588. Further, p-value 0.707 also reveals that age and loudness are independent, and Age with personality also have an insignificant relationship at 0.066 p-value.

## 6. CONCLUSION AND RECOMMENDATION

This study is purely designed to find the preferences of students affiliated with the University of Sargodha, Punjab, Pakistan about the musical elements in the selection of ringtone for their smart phones. The proposed study concludes that respondents mostly prefer rhythm and tempo elements when they select ringtone for their cell phones. Although, Age and tone color have a significant relationship, which the evidence that as the Age increase the choice of tone color for mobile ringtone also fluctuated. Further research can be carried out to get more useful information about selection of mobile ringtones, by enhancing the sample size and more musical elements.

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