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Innovating Musical Composition Through Urban Noise: A Case Study in Experimental Sound

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ABSTRACT

The journey from concept to finished product is fascinating and intricate. It begins with a spark of inspiration, an idea that ignites the creative fire within. This concept serves as the foundation upon which the entire project is built. This research used a qualitative method with a case study approach. This research uses two types of data, including audio data of musical compositions and literature sources from articles and journals. The first step is to collect audio samples. This involves scouring libraries, recording sessions, and creating custom sounds to fit the project's vision. Each sample is carefully chosen for its timbre, texture, and emotional impact, which adds depth and richness to the final composition. The steps used are (1) audio data collection; (2) audio editing; (3) composing has four themes: exposition, development, recapitulation, and experimental; and (4) mixing and mastering, for blending all the elements of the track to create a polished and professional sound, and prepares the final blend for distribution, ensuring it sounds great on all playback systems. This involves applying EQ, compression, and limiting to maximize the loudness and clarity of the track.

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1. INTRODUCTION

In the 21st century, technology can manipulate almost anything sound can. When discussing technology, look no further than "digitalization" (Born & Devine, 2015). In this era, digital can change almost all fields of art, one of which is music. Digitalization in the art of music is a transition between analogue and digital. In the past, in the music production process, recording companies used tape as the recording medium (Pras, *et al.,* 2013), and if, when recording, the player made a mistake, the player had to start over from the beginning, whereas nowadays, even though If the player makes a mistake, the recording can continue without starting over. Apart from that, nowadays, music production does not need to rent a recording studio; just by using a laptop or computer at home, we can make music equivalent to large ensemble music using a technology called VSTi (Virtual Studio Technology Instruments) (Herbst & Albrecht, 2018). With this technology, production costs or even no costs can be reduced because VSTi can emulate real musical instruments. Therefore, all production needs are available on VSTi. This VSTi uses MIDI as a controller, driver, and player for the VSTi. Digital has changed various effects in sound, such as equalizers, compressors, reverbs and other filters in the form of plugins; this makes the price more affordable than original analogue effects, which reduces the costs of producing a piece of music. In making this composition, we used VST based on history; this VST was created in 1996 by one of the largest audio companies in the world, namely Steinberg, together with DAW (Digital Audio Workstations) (Turchet & Fischione, 2021).

Cubase 3 is a revolutionary DAW capable of processing MIDI, recording audio and having an all-in-one feature for its time. This VST format is open, which means any company can use it; this causes other audio companies to use and develop the same technology. VST is not the only format; apart from the VST format, there are also other formats, namely AAX, RTAS, and AU (Theremini, 2014). VST format is mainly widely used in Windows OS. Popular DAWs that use VST include Ableton, Cubase, FL Studio, Cubase, and Studio One. AU (Audio Units) format is only available on Mac and popular DAWs such as Logic Pro, FL Studio, Ableton, Garage Band, and Digital Performer (Studio, 2021) And AAX Format is used for plugins in DAW Pro tools. When using a DAW, the feature that is always used is MIDI (Musical Instrument Digital Interface). MIDI is a technology that contains musical code that functions.

Converting notation and other parametric musical elements into data makes music digital inseparable from MIDI. MIDI was popularized in 1983 (Loy, 1985) based on history. Before the popularity of MIDI, musical instruments could not be connected, which limited the creativity of musicians at that time. Finally, the Manufacturers Association (MMA) created a MIDI technology (Loy, 1985). This MIDI makes musicians change; what is meant by change is how it works; in this context, the musician can create complex compositions even though the musician does not understand music theory (Loy, 1985). The negative effect is that it causes musicians to feel that it is easy to make music and that they do not need to learn to make music (Fulford *et al.,* 2011). It becomes a process of fooling and eliminates the value of musicians who learn music. However, the positive effect of MIDI is that it helps musicians speed up the composing and editing process to save time and resources for studying and analyzing music from the MIDI files themselves (Folkestad, *et al.,* 1998). With the existence of MIDI since 1983, the music industry has developed and has various music genres (Théberge, 2004).

In making music using motorized sound, we uses sampling techniques. Sampling, in this case, is inserting recorded sound from something we record, for example, the sound of people

laughing, musical instruments, surrounding sounds, and other sounds, into the DAW, after which the ADSR (Attack Decay Sustain Release) is tweaked again and given filter effects and other necessary effects depending on the musical composition to be created. Apart from that, some people interpret sampling as taking part of a song's existing structural area and combining the parts of our music to create newer music. If we conclude from these two sampling terms, we can interpret that sampling is a process of editing existing audio files created in such a way. Process Sampling from an existing song is not just using that sampling; there must be a license from the song owner or owner of the song's rights to not result in copyright infringement (Schuster, *et al.,* 2019; Sirois & Martin, 2006). After obtaining permission, the form of granting permission will be a written license agreement in the form of a letter made by a notary or a private deed. Indonesia's licensing agreement will be registered with the Directorate General of Intellectual Property (DJKI) of the Ministry of Law and Human Rights to have legal consequences for third parties.

2. METHODS

A composer is a person who creates or writes music, both vocal music (singer and choir) and instrumental music (piano solo, ensemble, big band, orchestra) or a combination of both instrumental and vocal elements (opera, operetta, musical, broadway, gospel) in various genres (Classical, Jazz, Pop) (Heru, 2017). Creativity is essential for creating works of art, especially music. Every human being has the creativity to create something; from this creativity, humans can enter ideas or thoughts into something they want to realize. To incorporate these ideas and objects into works of art, an artist must go through a creative process, which is a crucial stage to create a work of art that suits your wishes. This research used a qualitative method with a case study approach. A case study is a method for understanding problems carried out in an integrative and comprehensive manner to obtain an in-depth understanding of the problem and the problems it faces to resolve it and obtain good personal development (Susilo, 2010). This research uses two types of data, including audio data of musical compositions that we created using DAW Ableton Live and from literature sources such as articles, journals, and information on the internet related to this research.

3. RESULTS

DAW is software that functions for recording, editing, mixing and mastering audio and processing midi to become a piece of music. DAW adopts essential tools from recording studios, such as mixing consoles, outboard gear, and tape (Boon, 2020). The machine becomes one in the form of a computer program. Based on its history, in 1930, Bell Labs created Pulse Code Modulation (PCM) to convert analogue signals to digital ones for the first time (Kester, 2015; Pahlavan & Holsinger, 1988). PCM is a digital audio standard found in computers, CDs, cellphones and other audio devices (Zhu & Wang, 2008). After years of experimentation, in 1975, an audio company called Soundstream began working on their first digital audio recording using a tape drive (Fine, 2008; Lehning, 2020). An analogue-to-digital converter then transfers the data to a PDP-11/60 digital computer for editing using a digital audio processor program for random digital editing access' with built-in code for cross-fades and splices and uses terminals to display sound waves (Smillie & Weiss, 1996; Coleman, *et al.,* 1987).

Before the existence of DAW software in 1979, Fairlight introduced the product. He invented a CMI synthesizer and digital sampler with a built-in CRT monitor using the QDOS operating system (Théberge, 2020). CMI technology played an essential role in developing

recording systems using hard disks, and pattern sequencing is thought to have influenced the development of MIDI (Loubet & Couroux, 2000). In the early 80s, the idea of a software-based DAW became closer when personal computers, such as the Apple II, Commodore Amiga, and Atari ST, developed processing capable of processing digital audio (Collins, 2005). In 1983, Dave Smith introduced MIDI; before MIDI was invented, musical instruments could not be connected to a single computer, and MIDI could connect musical instruments to computers (Grimshaw, 2004). In 1985, Personal Computer Atari released their newest product, the 520 ST, adding the feature of having a built-in MIDI port (Yavelow, 1987).

In the same year, an audio company called Digidesign created audio editing software called Sound Designer, which was used to edit samples from a keyboard sampler (James, 2010). Ultimately, the software will be connected to Apple-compatible hardware and become a sound tool. The National Association of Music Merchants (NAMM) introduced an audio workstation with a 2 track recording feature (Fritz, 2000). Then, within two years, it developed and became a DAW with the name Pro Tools (Anthony, 2018). In the 90s, many recording studios used Pro Tools as an innovative platform (Reuter, 2022). Pro Tools has a high-quality multitrack digital recording feature, a growing rack, and an easy-to-understand DAW interface.

Garbage's debut album, 1995, was the first release, with Pro Tools producing the music. Steinberg Cubase released a DAW for the Atari Falcon030 computer in 1993 (Stuart, 2003 Wiflihani, *et al.,* 2019), which featured 8 Track Audio Recording and a Native-only player hardware but has a built-in DSP effect on the computer. In 1994, Pro Tools developed a feature to allow the party of plugins (McGrath & Love, 2017). Therefore, several companies, such as Waves and Jupiter Systems, started making the program's EQ, Reverb, and other DSP options. In the same year, Digidesign created a multi-channel 24-bit digital audio bus, and this discovery was handy for Pro Tools plugin developers.

Propellerhead's Rebirth was formed in 1997 (Power & Jansson, 2004). What makes them unique is that they feature exact emulations of the TR-808 Drum Machine and TB-303 Bassline Synth . It was the first time home music producers recreated some of their favourite sounds without purchasing the original instruments. Moreover, this became the idea for audio companies to create emulation plugins. Digital Audio Workstations continued to evolve over the next 20 years. However, the essential functions of DAW were created in the late 90s, changing the concept of recording music from previous eras, which could already use a Personal Computer (Théberge, 2020).

Because PCs are cheaper, more affordable, and even have better specifications. Almost anyone can make music and record high-quality audio at home; because of this, they create different genres and styles of music. Electronic music and modern pop music would be different if there were no such technology; in fact, the subgenre of electronic music is constantly increasing every year. On the other hand, despite the sophistication of technology for making music, some music producers are nostalgic for producing certain music using analogue methods. In essence, to create extraordinary musical works, we must fight for the music despite the limited features of the DAW.

4. DISCUSSION

As an audio producer, transforming an idea into a final result is captivating and complex. The process commences with a moment of inspiration, a notion that kindles the artistic passion within. This concept acts as the fundamental basis for the entire endeavour. Initially, it is necessary to gather audio samples. The process includes extensively researching collections, meticulously documenting sessions, and crafting bespoke sounds that align with

the project's artistic concept. Every sample is meticulously selected based on its timbre, texture, and emotional resonance, enhancing the depth and complexity of the final piece. After changing the sample into a new form, the editing process is where the manipulation of beats, melodic stretching, and stacking sounds occurs, resulting in a new transformation. The task commences with audio editing. It is the place where the basic materials transform and

After processing the audio, it continues with the stage of writing musical ideas such as melody, harmony and rhythm to form a musical work. Composing music involves technical and creative aspects, necessitating a profound comprehension of music theory and a discerning ability to judge what sounds pleasing. The final stage involves the process of mixing and mastering. Mixing is the skilful process of harmonizing and merging all the components of the music in order to produce a refined and expertly crafted sound. The process entails modifying levels, changing panning, and applying effects to generate a sense of depth and dimension. After completing the mix, the subsequent and final phase is mastering. The process involves finalizing the mix to provide optimal sound quality across all playback systems. The process entails utilizing EQ, compression, and limiter techniques to optimize the volume and definition of the music.

4.1. Creation Concept

All works of art always start with a concept. The inspiration for making music using the sounds of motorbikes and cars was when we were in a park close to a very noisy road, and the sound of the vehicles was loud. The park's function, which should be calm and cheerful, becomes the opposite. However, we got the idea to create music using vehicle sounds from this incident. Overall, this composition has two nuances, including abstract and dance feel. For the abstract, our interpretation at that time was that we were worried and anxious because we were disturbed by the sound of vehicles, while the feel of dance was because the music used EDM style, namely, house music has a four-on-the-floor beat using a tempo of 120 BPM. Four on the floor is a rhythmic pattern used in dance music genres, including disco, progressive house, tropical house, future house and others; the kick drum sounds on every beat (1,2,3,4). Four on the Floor was popularized in disco music in the 1970s. Initially, electronic music consisted of two main genres; the first was French electronic music, which used sound material recorded and manipulated via tape. Then, from this flow, concrete music, electroacoustic music and soundscape are formed. This music is generally a soundscape mixed with concrete experimental music. Starting from a moment and condition, then realizing it in musical composition. Therefore, to be accepted by the public, the presentation media is a project showcase, making it easy for readers to understand.

4.2 Audio Sample Collection

When making music, the composer usually prepares specific musical instruments for later use arrangement. It is the same as making a composition from vehicle sounds, collecting various kinds of sounds produced by vehicles and then editing them for arrangement and collecting these audio samples using two methods, including recording directly using the Zoom H1n recording device and taking from the internet, then recording directly into the DAW using audio loopback of the sound interfaces. *Audio loopback* is a system that can record sound from specific applications to other applications, such as Zoom meetings, Skype, and WhatsApp. Some sound interface hardware features, such as Presonus, Steinberg, Evo, and others, have a loopback feature. Apart from hardware, there are software for loopback, namely Voice Meeter, Synchronous Audio Router and many more. After getting data from

direct recording and recording using loopback audio, 14 sounds from vehicles were selected based on their frequency type. We can see the audio data in the following table.

Table 1. Type of vehicle, type of sound, and frequency range of sampling

No	Vehicles	Type of Sound	Frequency Range	Frequency Name
1	Toyota Kijang	Starter	600-10.000 Hz	Upper Middle
2	Honda Brio	Horn	3000 – 17.000 Hz	High
3	Ambulance	Siren	400-3000 Hz	Middle
4	Toyota Starlet	Horn	600-10.000 Hz	Upper Middle
5	Honda Brio	Close the door	20 – 60 Hz	Sub Bass
6	Nissan Skyline GTR	Exhaust	60-200 Hz	Bass
7	Yamaha RX King	Exhaust	600-10.000 Hz	Upper Middle
8	Formula One	Exhaust	600-10.000 Hz	Upper Middle
9	Daihatsu Terios	Alarm	400-3000 Hz	Middle
10	Toyota Starlet	Cigarette lighter	3000 – 17.000 Hz	High
11	Cars	Crash	60 - 10000 Hz	Bass-High
12	Toyota Starlet	Close the door	400-3000 Hz	Middle
13	Toyota Starlet	Hand brakes	400-3000 Hz	Middle
14	Honda Mobilio	Seat belts	3000 – 17.000 Hz	High

The frequency range calculations were analyzed using VST Span from an audio company called Voxengo.

4.3 Audio Editing

Producing music in this digital era is closely related to audio editing. *Audio editing* is a process that is carried out after the recording process is complete. In this process, the audio results that have been recorded will be perfected using specific effects according to the needs of the musical composition. Then, the audio will be edited in waveform form. Waveform is a form of audio wave in visual form; this wave shows changes in amplitude over a certain amount of time; if the sound being recorded is very loud and fast, then the wave will be complete and fill the entire volume, while if it is soft and slow the wave will be stretched and only a little fill the volume. Waveform is very helpful in audio editing and allows us not to listen to the audio.

There are 14 vehicle sound samples. The sound sample that was first edited was the starter sound from a Kijang car using the stretch technique; in fact, almost all audio samples were edited using the stretch technique because this technique is necessary to lengthen or shorten an audio sample to suit your needs. Arrangements. The critical thing for editing audio, especially for composition needs like this, is arranging each sound to be on tempo. Because this DAW is based on a gridline, the music algorithm is created based on a mathematical series. Then the second is tuning, which creates melodies. All sound samples are tuned using equal temperament. Equal temperament is one of three methods of tuning musical instruments, especially the piano. The three methods are 1) Pythagorean tuning, 2) Just Intonation tuning, and 3) temperament method. In Pythagorean tuning, all quint intervals are tuned to completely pure consonants. With this tuning, the terms major and set major intervals become sharp because they are 22 cents wider or with a ratio of 81:80; one cent is 1/1200th of an octave. Even though it sounds comfortable melodically, it will feel disturbing harmonically (Temperley, 2007). When tuning the sound of a vehicle, the author measures the tuning size using a piano because the piano is a type of music with an equal temperament.

Figure 1. Gridline and Waveform

In this case, the gridline is the tempo in visual form; the gridline is a reference for perfecting the audio so that it follows the tempo; from bars 1-3, the starter sound has been looped with a 1/16 rhythm until bars 4-11 the audio is shortened using transients so that the attack is significant. It is thick and sounds more musical.

Figure 2. Tuning

After the rhythmic composition process, the next step is to tune the sound using an audio editor. You can see in the picture that there are numbers (+2 – 15), which is the value of the per semitone transpose, and the number fifteen is cent. As written above, to measure the tuning using a piano. For each audio sample, to tune and adjust the rhythm of the audio, use the same method, arrange and position the audio with a gridline, and then adjust the tone so that it can be combined with the sound of other vehicles to make it more musical.

Figure 3. Sampler and MIDI

After the starter sound, there is a bass sound in bar 12 from the Nissan Skyline GTR with a sound that starts to be melodic. This editing uses the Ableton Live sampler, and then the sound is input into a piano roll using MIDI. Before being put into the piano roll, the sampler box has a green colour; this is the audio sample selected for use as a bass sound.

4.3 Composing

If we analyze music in general based on the equalizer, all the frequencies are filled, starting from sub, bass, low, mid, middle, upper middle, middle and high (20Hz – 20kHz). An example is the EDM song entitled Titanium by David Guetta. The following is a picture of the frequency range of the Titanium song.

Figure 4. Titanium song frequency range

It is the same with this composition, and we made sure the entire frequency range was filled so that the composition was solid from an audio perspective.

Figure 5. The theme of each chart

This composition has four themes: exposition, development, recapitulation, and experimental.

- Exposition

The exposition part is the introductory part or foundation of all parts of this composition. This section introduces what sounds will be used in the next section.

Figure 6. Exposition

In bar 1, the music starts with the sound of the car starter (red box); in real life, to start the vehicle, we have to start our vehicle. Like this composition, the music will be more realistic if it starts with the vehicle starter. The sound of the car starter in bar 3 becomes a rhythmic note of 1/16, and in bar 2, the author adds Doppler fx to the sound of Formula 1 (yellow box). The sound of Formula One is tuned using the note D. Formula 1 becomes the transition to lead to bar 3 because, in bar 3, there is an alarm sound and a car horn (blue box). You include the car alarm sound after Formula 1 because the car alarm will usually go off if there is a hard touch or loud sound. This car alarm pattern uses a 1/8 rhythm with the note G, and then in bar 7, there is a variation in tone due to the increase in the sound of the horn. In bar 11, the sound of the Skyline GTR car (purple box) increases because the exhaust character is bass, so in this composition, it becomes bass. Apart from that, the sound of the car door closing (green box).

Enter at the same time as the bus. Because of its potent attack, this sound is made into a kick with a four-to-floor pattern. In bar 17, there is a transition using the sound of a car crash because, in this sound, there is the sound of tyres slipping and the impact of other vehicles as well as the sound of breaking glass; this is, in general, musical compositions, such as fill-ins and crash sounds on drums.

- Development

Figure 7. Development

The development theme is the exposition development, which starts from bar 19. Rhythmically, the pattern is still the same; it is just that there is a change in rhythmic type; the rhythmic type in this bar uses shuffle, although overall, the rhythm is the same as the

previous theme, and changing the rhythmic type to shuffle sounds very different. Apart from that, there are additional sounds, namely, the sound of closing the starlet car door (yellow box) to fill beats 2 and 4 (backbeat) in music generally; what fills the backbeat is the snare, and the door handle as percussion to fill the empty rhythmic bars so that sounds solid.

- Recapitulation

The recapitulation occurs after the movement development section and usually presents the musical theme of the movement exposition once again. However, this composition is different; the recapitulation of development changes in terms of theme or, in other words, there is no connection between the themes of exposition and development; this section seems like an introduction to the next theme.

Figure 8. Recapitulation

In bar 27, the overall beat, rhythmic and melodic patterns change entirely because of a combination of recapitulation and exposition. The sound of the door closing from the Brio, if the previous theme was four to the floor, then in this section, the theme of the Brio closing the door becomes more rhythmic. Apart from that, Nissan Skyline GTR (blue box), if in the previous theme, the bass was melodic, in this section, it just becomes ambience without tuning and is made as natural as possible; the sound of the horns from several cars is muted. Then, there are additional seat belts and a handbrake sound section (red box). The sound pattern of the seat belt is an arpeggio because, as an object, it is made into an object. After all, the sound of the doors closing in these two cars does not have a clear beat pattern. Therefore, the sound of the seat belt is made into an arpeggio as the centre of attention. Apart from that, for rhythmic sounds, there is the addition of a handbrake sound; this handbrake pattern is used as a tempo for the closing beat pattern of the two cars, so listeners do not get too dizzy to follow the beats.

- Experimental

This section is the climax of all the themes because it is more expressionistic than the other themes. Because all the interpretations are stated in this section, it might sound unclear to some people, but from the creator's side, there is a unique sense of satisfaction with this theme.

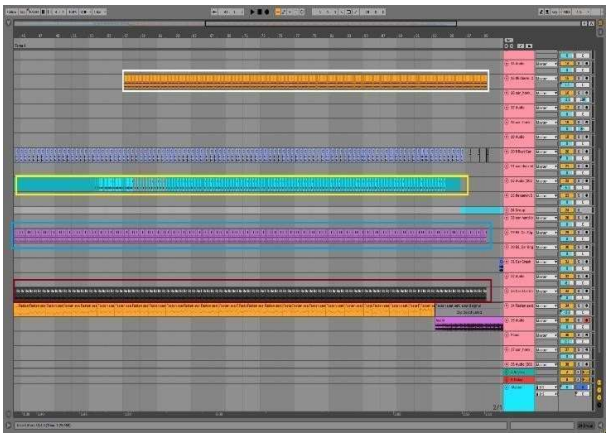

Figure 9. Experimental

The experiment here is more about the use of rhythms and effects. When at bar 44, the sound of the Starlet car door (yellow box) sound becomes 1/64 rhythmic, and the Brio car door becomes two taps as a tempo accent. Because from bar 44 to bar 46, there is a decrease in tempo from 120 bpm to 20 bpm in bar 46, and the value of the starlet door note becomes 1/128. Two objects are the centre of attention: the sound of the seat belt and the starlet door. The seat belt sound still uses the same arpeggio pattern to maintain the identity of the previous theme. In bars 46 to 52, there is an increase in tempo from 20 BPM to 500 BPM and the use of rhythmic starlets between 1/32 and 1/128. In bar 52, the author adds a stretcher effect to create a glitch. Then, the sound of the seat belt changes tonality for each bar. Then, from bar 52 to bar 58, decrease the tempo from 500 to 20 BPM again. In bar 58, the author adds a panning effect from the left ear to the right with speed according to the tempo. Apart from that, from bar 58 to bar 62, there is another increase in tempo from 20 BPM to 1000 BPM with a starlet rhythm of 1/64 to 1/128, and then the seat belt pattern is made more random. In bars 91 to 102, there is a decrease in tempo from 1000 bpm to 20 bpm, and then the seat belt tone is made to pitch down; after that, it is followed by the sound of the starlet door, which has been designed using a resonant effect, the sound does not sound like the sound of the starlet door because it is so rhythmic. from 1/128. Then, this song ends with the sound of a car crash, which is used as an exposition theme when transitioning to development.

- Mixing and Mastering

A digital musical work never goes through mixing and mastering. The purpose of mixing and mastering is to perfect the composition results so that it is more worthy of listening; it is the same with this music because the vehicle sounds rough; it has to go through the mixing and mastering stages to make it sound soft. On each track, the effects used are the equalizer and compressor. However, each setting is different because each sound has a different character. The mixing effects are achieved using products from waves; for mastering, it is ozone 8. This plugin can detect excess signals to be compressed automatically. Also, ozone is needed to calibrate loudness so that the volume level is equivalent to the current music.

Figure 10. Ozone

5. CONCLUSION

Making music but not from musical instruments is a challenge in itself to create it. Almost all sounds in our lives can be manipulated if we know the basic concepts of tuning, types of timbre and frequency range. Of course, it all becomes more accessible with the help of technology. This music uses motorbikes and car sounds and has four themes: exposition, development, recapitulation, and experimental. In the exposition section, there is a starter voice as an opening; in each bar, there is an additional musical instrument as an introduction if the next theme will use the voice introduced during the exposition. This music uses a 4/4 time signature with an initial tonality in C major and an initial tempo of 120 BPM. Moving the theme from exposition to development uses the sound of a vehicle crash. This sound was taken from the internet and then recorded using loopback. The development theme is a theme that sounds very different just because of the change in rhythmic type because this theme uses shuffle as the main pattern of this development. Apart from the rhythmic changes, in this section, the chord progressions vi, IV, and V are added, and the addition of percussion from the sound of hand brakes and car door handles fills the empty rhythmic bars. After development is a recapitulation, the recapitulation in this work seems to be a combination of exposition because this theme is an introduction to the experimental; the sounds that are focused on this theme are the sound of the Skyline GTR car and the sound of the door closing on the starlet car, plus the sound of the seat belt using the arpeggio technique. This experimental theme will sound strange to autonomists but expressive if heteronomists listen to it. This section is the climax of the previous theme because it describes the vehicle's character and the sound of the vehicle itself. Because the sound of vehicles sounds very disturbing to some people, the interpretation will naturally be that way.

Electronic music is always synonymous with using many effects; the same is true with this music, which uses several effects, including sidechain. The sidechain effect when on exposition and development themes used sidechain because the kick pattern is four to the floor, and the function of this sidechain is to put pressure on other instruments. It means providing more space for the kick so the kick sound is more transparent without increasing its gain. After that, use an equalizer; the function of this equalizer is to tidy up the frequency range that is not needed, for example, the bass sound and the kick sound, both of which have

a low character; if the two sounds are put together they will sound broken, therefore between the two the sub must be lowered so that complement each other in terms of frequency. Apart from using an equalizer, you can use a compressor. The compressor functions to limit excessive signals. In this audio file, of course, the audio is not even; some sound very loud or too quiet. This compressor will increase the slow signal and reduce the loud signal. After using the compressor, the audio will sound even. Next is reverb; reverb is an emulation of room effects; in reverb, we can adjust the reflection of the sound we want so that it sounds like the room in our idea. The last one is wider and more comprehensive, is a plugin that can create mono stereo audio, for example, vocal sounds, someone records vocals in mono; mono means the sound that is only in the middle if we use headphones; if vocals are used wider, then the vocal sound will fill our right and left ears. Usually, this effect is used for backing vocals. However, this work fills in the ambience to make it sound wide. These are some of the effects used in this work. There are many more effects in producing music, and of course, the effect has its function for specific interpretation needs.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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