



## Toward Effective Electoral Affairs: The Implementation of E-Voting in the Village Chief Executive Election 2021

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### Article Info

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Chief

**Abstract:** The purpose of this study is to determine the effectiveness of the election of Village Chief Executive in Sleman regency in the Special Region of Yogyakarta. Where at first it was implemented traditionally or conventionally which later changed to use the e-voting system. The method used in this study is a qualitative type. The data used is data obtained from previous research (books, journals, and articles). To measure the effectiveness of e-voting, researchers use Duncan's theory of effectiveness, where this theory has three indicators, namely: 1) Goals of Achievement, 2) Integration, and 3) Adaptation. The results of this study are: 1) the Sleman community gets convenience in using or executing e-voting when conducting digital elections, which is shown with a percentage of 50.00%. This is supported by the increase in voting rights from 2020 to 2021. Then, 2) the intensified socialization is a form of direct socialization, because it is considered more effective, it can be seen with a percentage of 61.00%. And the last one is 3) the people of Sleman can adapt from conventional elections to a digital system, namely e-voting. The Sleman regency government also collaborated with seven universities in Indonesia to make the election of village heads successful by e-voting.

**Kata Kunci:**  
E-Voting;  
Efektivitas;  
Sleman;  
Kepala Eksekutif Desa;  
Pemilihan.

**Abstrak:** Tujuan penelitian ini adalah untuk mengetahui efektivitas pemilihan Kepala Pelaksana Desa se-Kabupaten Sleman di Daerah Istimewa Yogyakarta. Dimana pada awalnya diterapkan secara tradisional atau konvensional yang kemudian berubah menggunakan sistem e-voting. Metode yang digunakan dalam penelitian ini adalah jenis kualitatif. Data yang digunakan adalah data yang diperoleh dari penelitian sebelumnya (buku, jurnal, dan artikel). Untuk mengukur efektivitas e-voting, peneliti menggunakan teori efektivitas Duncan, dimana teori ini memiliki tiga indikator, yaitu: 1) Tujuan Pencapaian, 2) Integrasi, dan 3) Adaptasi. Hasil penelitian ini adalah: 1) masyarakat Sleman mendapatkan kemudahan dalam menggunakan atau melaksanakan e-voting saat melakukan pemilu digital, yang ditunjukkan dengan persentase sebesar 50,00%. Hal ini didukung oleh peningkatan hak suara dari 2020 ke 2021. Kemudian, 2) sosialisasi

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*yang diintensifkan merupakan bentuk sosialisasi langsung, karena dinilai lebih efektif, dapat dilihat dengan persentase 61,00%. Dan yang terakhir adalah 3) masyarakat Sleman dapat beradaptasi dari pemilu konvensional ke sistem digital, yaitu e-voting. Pemkab Sleman juga menggandeng tujuh perguruan tinggi di Indonesia untuk menyelesaikan pemilihan kepala desa melalui e-votin*

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## INTRODUCTION

Based on the Law of the Republic of Indonesia (UU RI) No. 6 of 2014 concerning Villages, which says that villages are legal community units that have territorial boundaries that are authorized to regulate and manage government affairs, community interests of the right of origin, and or traditional rights that are recognized and respected in the government system of the Unitary State of the Republic of Indonesia (NKRI).

Villages have the power to organize and determine the implementation of their government system, namely by means of village chief executive elections (Mustawan, 2021). The election of the village chief executive is one of the most important aspects in a village government, because with the village chief executive election process, it will later produce a leader (village chief executive) who will determine the implementation of development and the implementation of the village government itself. Within the scope of the village, the supreme leader is held by a village chief executive himself, who has been elected by the general public in an election of the village chief executive. The election of the village chief executive is included in the participation of political attitudes of the community in the implementation of democratic parties at the village level (Grobongan, 2013).

The village chief executive is the head of the village government who organizes and leads the village. In fact, the village chief executive is a village-level government official who has duties, functions, and obligations, and also has the authority to organize village households and carry out the duties assigned by the government and local governments. In carrying out his duties, a village chief executive is assisted by village officials who are in accordance with the Work Procedure Organization (SOTK). In general, the village chief executive has duties such as organizing village government, carrying out village development, village community development, and empowering village communities (Bangun, 2020).

The functions of the village chief executive are: 1) Organizing Village Government, such as governance, setting regulations in the village, fostering land issues, fostering peace and order, making efforts to protect the community, population administration, and structuring and managing areas. implementation of the rights and obligations of the community, community participation, socio-cultural community, religious, and labor. 3) Community empowerment, such as socialization tasks and community motivation in the fields of culture, economy, politics, environment, family empowerment, youth, sports, and cadet reefs. 4) Maintain partnership relationships with community institutions and other institutions and carry out other duties in accordance with applicable regulations and laws (Bumiayu, 2021). The village chief executive also has an authority in carrying out his duties. Some of its authorities include: 1) leading and organizing village government, 2) appointing and dismissing village officials, 3) holding the power of managing village finances and assets, 4) establishing village regulations (perdes), 5) setting the village revenue and expenditure budget (APBdes) (Harruma, 2022).

The village chief executive also has rights, such as: 1) proposing the organizational structure and work arrangements of the village government, 2) submitting drafts and enacting village regulations, 3) receiving a fixed income or salary every month, along with benefits, and other legitimate receipts, and obtaining health insurance, 4) obtaining legal protection for the obligations carried out, 5) mandating the implementation of duties and other obligations to the village officials, 6) receive guidance and guidance in the context of carrying out their duties (Patoloan, 2021). In addition, the village chief executive also has an obligation, some of his

obligations include: 1) upholding and practicing Pancasila, implementing the 1945 Constitution of the Republic of Indonesia, and maintaining and maintaining the integrity of the Unitary State of the Republic of Indonesia, and Bhinneka Tunggal Ika, 2) improving the welfare of the village community, 3) maintaining the peace and order of the village community, 4) obeying and enforcing regulations legislation, 5) carrying out a democratic and gender-just life (Desa, 2020).

Just like other elections, the election of the village chief executive also uses a principle, the principle is the principle of Direct, General, Free, Secret, Honest, and Fair or LUBER JURDIL. The principle of "Direct" means that a voter has the right to cast his vote in the process of direct election and should not be represented by anyone. The principle of "General" means that a general election can be followed by all people who already have the right to vote in all regions in Indonesia. The principle of "Free" means that voters do not get coercion from any party when exercising their right to vote. The principle of "Secret" means that elections are conducted in secret and only the voter knows what he or she is voting for. The principle of "Honest" means that elections are conducted democratically and according to what has been established. And the principle of "Fair" means that the general election is conducted with the same treatment of all voters to exercise their voting rights (Arvindo, 2021).

The village chief executive elections are generally carried out conventionally or traditionally, namely in a way where residents who already have the right to vote to come directly to the polling station (TPS) are located, to exercise their voting rights in village chief executive elections in various regions in Indonesia. Conventional elections usually still use ballot boxes, papers that contain images of village chief candidates, ink to mark that someone has exercised their right to vote, and needles to vote for paper. The election of village chiefs conventionally has advantages such as, 1. This method of election is the most common way carried out by people in various regions in Indonesia, and there is no need for more explanation to potential voters. 2. There will be no system failures in the vote calculation process, because the vote calculation process is carried out manually. However, this conventional system also has its drawbacks, such as 1. It takes a lot of time to count the results of the votes, 2. Requires a large amount of human labor to take care of all the equipment in the voting process and vote counting. (Dukung, 2020).

Along with the development of the times into the digital era, elections have also transformed into a more modern level, namely using the Electronic Voting or E-voting system. An e-voting system is a system that utilizes electronic devices or gadgets to help process digital information for ballots, count vote results, and send vote results from the general election process. (Inti, 2020). The e-voting election system has a number of advantages compared to manual or conventional election systems, such as: 1) Easy to calculate, the e-voting system in the context of counting votes and data tabulation can calculate results faster and more accurately than conventional manual counting systems by opening the ballot papers one by one and making records which is quite a waste of time. 2) Easy in its implementation, Voter confusion can lead to voter turnout, especially by vulnerable voters (such as illiterate or elderly voters). 3) Preventing fraud, however, it is possible that using an e-voting system can actually cause even more sophisticated fraud.

However, if the General Election Commission is able to overcome and minimize the new fraud model in the e-voting system, then e-voting is better than the voting system. Moreover, this can reduce fraud in the election by voting more than once because the e-voting system will detect voters through their e-KTP. 4) Reduce costs, the e-voting system is also able to reduce the costs that must be incurred at the time of the election. This is because, in conventional elections, the General Election Commission (KPU) must print large numbers of ballot papers, ballot boxes and voter identification cards. However, with e-voting, the KPU only needs to provide an electronic machine using the voter's e-KTP, which can be used repeatedly (Fachri, 2021). In addition to advantages, the e-voting system also has several disadvantages, such as: 1) Hacking, every program and server in the computer has problems that are detected or undetected, such as bugs or interference from viruses. Hacking threats can also occur in computer systems. 2) More socialization is needed, because not all people feel familiar with gadgets, so more socialization is needed for the community, especially among the elderly who find it difficult to use gadgets.

One example of a region in Indonesia that has implemented e-voting in village chief executive elections is Sleman regency. Sleman is one of the regions in the Special Region of Yogyakarta (DIY), the capital of Sleman is in Kapanewon Sleman (Sleman, 2006). Reporting from

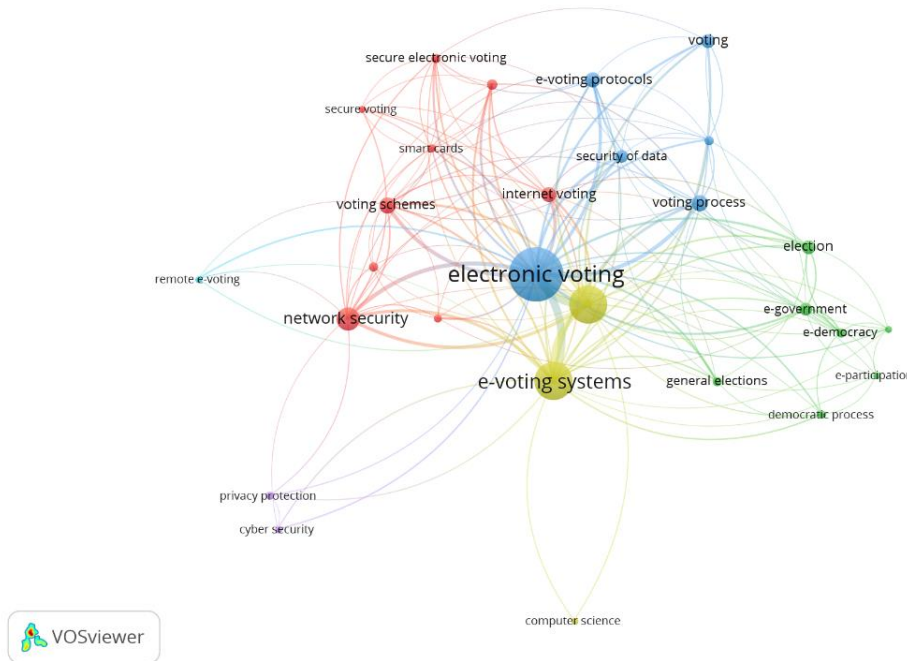
the official website of the Sleman Regency Government, where it is explained that there will be as many as 35 villages that will use e-voting innovations in the voting process in the village chief executive election in Sleman. The Head of the Sleman Regency Communication and Information Service, Eka Suryo Prihantoro, also emphasized that the village chief executive election mechanism using e-voting will use a touch screen computer where there are candidates for the village chief executive candidate, then voters only need to use a smart card to conduct elections. All kinds of risks and possible obstacles in the village chief executive election process using e-voting have also been prepared to anticipate problems during the voting process and counting the number of votes (Hidayat, 2019).

Research from (Indra Permana et al., 2016) on plans to use Smart Cards in elections, explains that e-voting elections have several advantages over conventional elections, such as saving time and resources, especially in a more accurate, and fast vote counting process. This is in line with the findings of (Fauzin, 2019) which said that with the implementation of elections that use an e-voting system, it will result in more efficient elections in terms of time, budget, and ease of implementation. Research from (Hardjaloka & Simarmata, 2016) that for some regions in Indonesia, it is already possible to implement e-voting in every general election. Research from (Anistiawati, 2021) said that from the complexity of the 2019 presidential election process which is still conventional, which also caused riots at some point which resulted in casualties, the e-voting election system can be the solution to the problem. The results of research from (Lubis et al., 2022) which states that the implementation of the 2024 elections is expected to use the e-voting system, so that it can be carried out quickly, precisely, accurately, effectively, and of course the implementation of the principles of "LUBER" and "JURDIL" in order to produce leaders and representatives of the people who run the wheels of government in a "Good Governance" manner.

Based on the findings of (Susmanto et al., 2022) on the results of the e-voting simulation carried out on the Geuchik election system in Lueng Bata District, which produces recapture data that is so fast and precise, so it is hoped that the implementation can be carried out transparently, efficiently, and professionally. The findings of (Rokhman, 2017) show that the application of e-voting in Indonesia must first go through an in-depth study. Especially e-voting is required to maintain the principles of "LUBER" and "JURDIL", and is in line with the principles of international institutions, such as eligibility and authentication, uniqueness, accuracy, integrity, verifiability and auditability, reliability secrecy and non-coercibility, flexibility, convenience, certifiability, transparency, and cost-effectiveness. In his research, (Hutagalung, 2012) revealed that with the innovation of e-voting, it is considered to be able to facilitate the stages of elections and regional elections, especially during the registration stage which only requires an ID card.

E-voting is also considered to be able to facilitate the recapitulation of vote calculations which will later be sent to the KPU from local polling stations. The findings from (Haryati et al., 2014) about voting under the name 'Poll Site E-Voting' system, which shows that the system is considered a user-friendly system for its users, and is considered low-risk, and is considered effective in calculating the results of votes. Research from (Risnanto, 2018), has shown that the innovation of the e-voting application can process vote results on a small, medium, and large scale, and only requires relatively low costs in its operation, and the results of the application's work are considered fast and accurate because it can work automatically. Meanwhile, the findings from (Fatmawati & Suparto, 2020) in the E-Voting research in Pemalang Regency, concluded that the obstacle that often occurs when conducting village chief executive elections using the e-voting system is data verification which sometimes experiences errors.

Previous research searches were also carried out by conducting bibliometric analysis using VOS Viewer, the results of the analysis can be seen in figure 1. below:

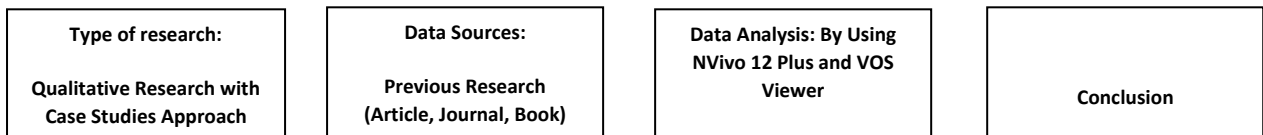


**Figure 1. Bibliometric Analysis VOS Viewer**  
**Source: Processed by Author, 2022.**

Based on the results of Bibliometric analysis from previous studies using VOS Viewer, it can be concluded that previous research focused more on voting schemes, secure voting, e-voting protocols, voting processes, elections, e-government, e-democracy, and e-participation. The lack of research that examines the effectiveness of e-voting in village chief executive elections. This research is quite interesting because the implementation of e-voting in the realm of village government is related to the digitization of democracy in Indonesia, which in this case, researchers examined Sleman Regency which has applied e-voting in village chief executive elections. Therefore, the purpose of this study is to fill in the research gaps by focusing on the study on the effectiveness of the application of e-voting for village chief executive elections in Sleman Regency. The theory used in this study is Duncan's theory of effectiveness. This theory has three indicators, namely, 1) Achievement of Goals, 2) Integration, and 3) Adaptation.

**RESEARCH METHOD**

This research uses a qualitative type of research with a case study approach. According to Denzin & Lincoln (2011: 3-4) qualitative research is an attempt to rationalize and interpret or interpret the reality of life based on what the researcher understands. Therefore, this type of research usually involves a large amount of evidence in the form of field data that describes the natural and problematic events of the life of each individual human being (Al-Hamdi et al., 2020). According to Denni in (Subadi, 2006), a case study is a study that examines completely and intensively the facets, issues, and perhaps events about the geographical setting over and over again.



**Figure 2. Research Roadmap**  
**Source: Data Processed by Author, 2022.**

The data obtained will be analyzed using Qualitative Data Analysis Software (QDAS) with NVivo 12 Plus. Where the discussion will be divided into three parts according to the indicators

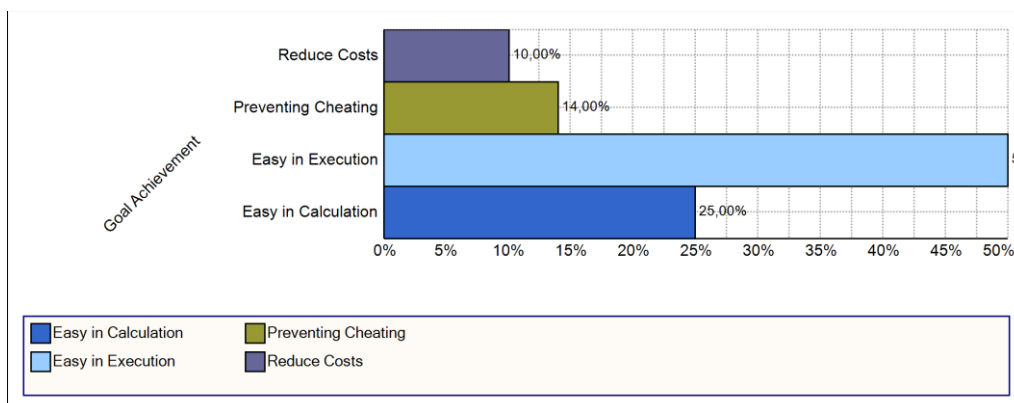
of Duncan's theory of effectiveness, namely: 1) Achievement of Goals, 2) Integration, and 3) Adaptation.

**RESULT AND DICUSSION**

Effectiveness is often defined as a quality or quantity of output of a good or service offered. In an organization, effectiveness can be measured by observing the effectiveness or not of the organization in carrying out its duties. Effectiveness can also be interpreted as being right on target, especially in a policy or innovation that has been pre-designed and then applied to the general public. In this study, researchers used Duncan's effectiveness theory which has three indicators, the first indicator is Goal Achievement, the second indicator is Integration, and the third indicator is Adaptation. The full explanation can be seen below:

**1. Achievement of Goals**

In the first indicator, Goal Achievement can be interpreted as the entire effort to achieve goals should be viewed as a process. Therefore, in order for a goal achievement to be guaranteed success to the end, a stage is needed, both in the achievement of its parts and also the stages of its periodization. Goal achievement also has several factors, such as, the period of time and also the target which is the main target. In this indicator, the researcher will discuss the achievement of the goal of conducting village chief executive elections using e-voting in Sleman, which can be seen in figure 3. below:



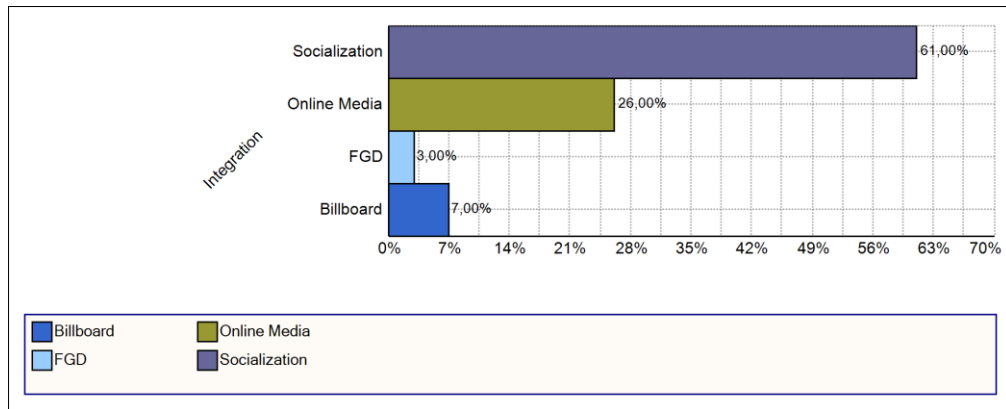
**Figure 3. Goal Achievement Graph (Crosstab Query Analysis using NVivo 12 Plus)**  
**Source: Processed by Author, 2022.**

Based on figure 3. above, it can be concluded that with the changes made by Sleman regency in the previous traditional or conventional village chief executive elections, then switched to using the e-voting system, ease in execution or ease in using the e-voting system, which received a percentage of 50.00%, then there was an ease in calculating the number of votes indicated by a percentage of 26.00%, then there was preventing fraud both in the process voting, as well as the calculation of the number of votes shown with a percentage of 14.00%. Likewise, public participation in exercising their voting rights also increased, from 73.9% in 2020 to 76.36% in 2021 (Nila, 2021). This cannot be separated from the intensive socialization of e-voting carried out by the Sleman regency government to its people.

**2. Integration**

In the second indicator, namely the Integration indicator, it can be interpreted as a measurement of the level of an organization's ability to hold socialization, consensus

development, and communication. In other words, indicator integration is a process that concerns socialization. In this indicator, the researcher will discuss what media are used in socializing the use of e-voting in the village chief executive election in Sleman regency which can be seen in figure 4. below:



**Figure 4. Integration Graph (Crosstab Query Analysis using NVivo 12 Plus)**  
**Source: Data Processed by Author, 2022.**

Based on figure 4. above, it can be concluded that the media to socialize about understanding e-voting in the Sleman community, direct socialization techniques have the largest percentage, which is 61.00%, followed by socialization using online media, which is 26.00%, then there are billboards of 7.00% and Focus Group Discussion (FGD) of 3.00%. The Sleman district government collaborated with speakers from the Agency for the Assessment and Application of Technology (BPPT) in intensifying the socialization of understanding e-voting (Burhan, 2019). The Sleman Regency Government also uses online media in its socialization which is found on the official YouTube channel owned by the Sleman Regency Government, namely Sleman TV.

### 3. Adaptation

In the last indicator, namely adaptation can be interpreted as the ability of an organization to be able to adapt itself to the environment. Adaptability is also the ability to dynamically change standard operating procedures when the environment undergoes a change. Therefore, adaptation to this is a process of self-adjustment carried out with the changes that occur. If it is associated with the election of village chief executive in Sleman regency which was initially carried out conventionally, then carried out using the e-voting system. Thus, it can be concluded that people in Sleman Regency, especially those who already have the right to vote, adjust to start moving from conventional elections to digital systems. The success of community adaptation cannot be separated from the intensive socialization carried out by the Sleman Regency Government (PEMKAB) through the Village Community Empowerment Service (DPMD) which was also attended by the Sub-District, Head of District, and TNI (Sleman, 2019). The Sleman Regency Government also collaborated with seven universities in Indonesia to make the election of village chief executive successful with an e-voting system, including: 1. Universitas Muhammadiyah Yogyakarta (UMY), 2. Universitas Negeri Yogyakarta (UNY), 3. Universitas Pembangunan Nasional (UPN), 4. Universitas Islam Indonesia (UII), 5. Universitas Gadjah Mada (UGM), 6. Universitas AMIKOM, 7. Universitas Teknologi Yogyakarta (UTY) (Suryana, 2019).



## CONCLUSION

Based on the explanation above, a conclusion can be drawn that with the rapid development of technology today, the voting system has been pushed to the lowest level in the government system in Indonesia. Voting that is generally and known to many people is traditionally or conventionally, but now it is turning to the e-voting system. This makes a significant change in the running of the democratic party process at the village level. However, this encourages Indonesia to adjust to globalization and also the digital world.

The results of this study prove that the implementation of e-voting in Sleman district can be said to be running smoothly and effectively. Using Duncan's theory of effectiveness, it can be concluded that the people of Sleman have the convenience of using or executing e-voting when conducting elections digitally, which is shown with a percentage of 50.00%. This is supported by the increase in voting rights from 2020 to 2021. Then, the intensified socialization is a form of direct socialization, because it is considered more effective, it can be seen with a total percentage of 61.00%. And the last thing is that the people of Sleman can adapt from conventional elections to a digital system, namely e-voting. The Sleman regency government also collaborated with seven universities in Indonesia to make the election of village chief executive successful by e-voting.

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