

# Minimalist Design Verification based on Expert Reviews

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**Abstract**—Business is the field that needs people to understand the related information in simple way in order for them to digest and get engage with the business. Minimalist is the concept to deliver information in the simplest but aesthetically pleasing way. The minimalist website is really important for entrepreneurs in order to attract people to visit their websites for purchasing goods or obtaining services. Websites' interfaces that are hard to explore due to its complex designs could decrease the accessibility of the websites. Consequently, users will stop visiting the website and cause a loss of profit to the entrepreneurs. Hence, to address this issue, the current study aims to design entrepreneur's website interfaces that apply the minimalist principles in order to produce a minimalist entrepreneur's website. A number of studies have found nine minimalist principles. However, based on the reviewed literatures in the minimalist design domain, there were three (3) minimalist principles that are less employed in the minimalist design studies. Those three design principles are getting started fast (Principle 1), exploiting prior knowledge (Principle 4), and reasoning and improving (Principle 9). Thus, the current study only focuses on these three minimalist principles. This study consists of two phases. This paper emphasizes on the first phase of the current study which is to verify the minimalist design based on the expert reviews. This study adopts the quantitative method, which uses a survey to collect the related data. 10 designs that applied those three (3) minimalist principles were given to the experts. They chose the minimalist design based on the certain criteria such as the design achieving the level of users to be able to start fast in exploring the website information, the design is exploiting the current design guidelines such as Gestalt law in well applied, and the last one is each of the website design interface has their own reasoning and improvising on the locating the elements of the interface. As a result, from the expert reviews, the current study found that there are seven (7) designs which are able to be considered as a minimalist website design, namely Designs 1, 5, 6, 7, 8, 9, and 10. These seven (7) designs will be applied as interfaces in the entrepreneur's website for further investigation in Phase 2 of this study.

**Index Terms**—Entrepreneurs; Minimalist Principles; Web Design; Website

## I. INTRODUCTION

Minimalist principles are the study from years back that have recently started getting more attention from people after what happened to the Google search engine [1][5][9][10]. The search engine applied the concept of minimalist which means users are able to start browsing for the information that they want straight away, without being shown other news such as Yahoo. As a result, Google search engine has become the best search engine in the world and it is also one of the most popular products from Google [10]. Subsequently, with

regard to positive acceptance towards Google search engine, this study will implement the minimalist principles on business websites. As known, business is a risky field which really needs to be well control with more concerns [7].

There are two major problems that motivate this research. Firstly, end users usually lack knowledge in exploring the websites for the first visit [7]. Thus, this situation requires them to spend more time in exploring the website [7][8]. In the business environment, customers should be able to explore the websites in a quick time. Otherwise, users will normally end visiting the website once they have found that it is hard and takes a long time to explore. This will cause loss profit in business because the customers will visit other websites to purchase goods that they need [7][9]. Another reason for choosing the minimalist approach is because minimalism is a program in the sense of being able to fix complex situations for a better environment [2][9].

Secondly, the problem exists when there are websites that have been developed by web developers without following website design guidelines, in which they design the websites based on their feel and style [8]. This situation could make the design of the website's interface become complex. Consequently, the websites will be difficult to explore and the complex design could decrease the accessibility of the websites [9][8]. This situation will increase the users' stress level in finding information needed when there are too many elements on the website itself [8][9][5].

To address these problems, this study intends to design an entrepreneurs' website interface based on the minimalist principles in order to simplify the website's interfaces. Therefore, the users could explore the websites easier and less time consuming.

In the same vein, previous studies have suggested nine principles that make up the minimalist design which are getting started fast, training on real tasks, reading in any order, exploiting prior knowledge, coordinating system and training, supporting error recognition and recovery, using the situation, developing optimal training designs, reasoning, and improvising [2][3]. However, this study only focuses on three principles which are Principle 1: getting started fast, Principle 4: exploiting prior knowledge and lastly, Principle 9: reasoning and improvising. These three principles were selected because they involve the minimalist approach and were less employed in previous studies [2][3].

Recently, minimalist studies have shown that the principle of minimalist is not a traditional knowledge and still been continue in modern studies such Meyer (2015) in her studies stated that minimalist is a concept and trend that grown into an important level amongst web designers [6]. Furthermore, the Meyer's research also covered the concept of design that

match well with all the minimalist principles included the Principle 1, 4, and 9 that been used in this study. It is clear covered when Meyer obtained the results that stated the visual focus on primary content, flat graphic design, and restricted color palettes are important features of minimalist websites [6].

Furthermore, Marek (2016) used the concept of Principle 9 in his research [3]. In this study, the implementation of reasoning and improvising principle has been covered at the sector of deciding the result from experiment. The minimalist principle stated that the refutation of the source statement and lesson learned is actually extra and not only limited on the fix result of the experiment itself [3].

Further details of this paper are discussed in the following sections which are Section II explains the minimalist Principle 1; Section III explains minimalist Principle 4; Section IV explains minimalist Principle 9; Section V explains the methodologies; Section VI are discusses the data analysis and results respectively; Section VII states the conclusion, and the last part, Section VIII, discusses the acknowledgement.

## II. PRINCIPLE 1: GETTING STARTED FAST

The party that plays the main role in achieving this principle is the developers. Developers need to make damaging sacrifices of elements on the user interface (UI) to achieve this goal. In addition, some developers prefer to use many elements on their designs to show their effort in order to get more payment from the clients. This situation contributes to the visually complex design. Due to the effects, users will take a longer time to start exploring the website because computer users have very different abilities. However, for the most part, developers should be able to get first time visitors started reasonable quickly.

## III. PRINCIPLE 4: EXPLOITING PRIOR KNOWLEDGE

In order to exploit prior knowledge for designing, the minimalist approach should be based on another theory of design which this study refers to known as the Gestalt theories or the Gestalt principles. This is because this principle is suitable for designing applications . There are similarity, proximity, continuity, closure, area, and symmetry. It is not necessary to used all the 6 principles on one interface.

### A. Similarity

This principle shares the visual characteristics in order to organize them into groups or units.

### B. Proximity

This principle of proximity states that objects, which are closer together, tend to organize themselves visually into groups or units.

### C. Continuity

This principle of continuity predicts the preference for continuous part of its own group.

### D. Closure

This principle applies when we tend to see complete figures even when part of the information is missing. This principle is usually used on logos, such as the logo of the World

Wildlife Fund (WWF).

### E. Area

This principle states that the smaller of two overlapping figures is perceived as a figure while the larger is regarded as the ground.

### F. Symmetry

The principle of symmetry describes the instance where the whole figure is perceived rather than the individual parts that make up the figure.

## IV. PRINCIPLE 9: REASONING AND IMPROVISING

The reasoning and improvising principle includes the controversial aspect of minimalism. The minimalist increases the level of learning to become higher. Users usually prefer to be told exactly what to do rather than learning continuously by exploring by them.

## V. METHODOLOGIES

This study adopted a survey in order to verify whether the entrepreneur's website interfaces design for this study is a minimalist or complex design. The following designs are for a homepage of the website simultaneously and are selected for the verification survey because those all the designs is inspired by theories and implementing all the three (3) selected minimalist principles. Each of the design applies the selected principles which are getting started fast, exploiting prior knowledge, and reasoning and improvising.

Getting started fast focuses on providing the design that is able to help end users start exploring the interface in a faster way. The next principle which is exploiting prior knowledge is focusing on referring the previous knowledge or studies by other experts in the design and minimalist field before developing the minimalist website design. The latest implemented principle which is reasoning and improvising is focuses on providing a design which has already been shown to users exactly what to do rather than continuously exploring them. This type of design is important because usually end users have limited knowledge regarding any interface designs.

### A. Experts

Three (3) design experts were involved in the verification process. They are from public and private higher education institutions with extensive experiences in the design field.

### B. Materials

There are ten (10) minimalist designs of website interfaces which for verification survey are implemented the three (3) selected minimalist principles. They have to verify each of the design to see if it has fulfilled the minimalist design principles or not by marking in the boxes, below of each design. In addition, the experts also gave their comments for each design. The verification survey is providing ten (10) website design interface for experts to verify because these ten (10) designs is actually two (2) groups of test which is five (5) designs each. By using five (5) designs, the collected data is able to find 80% of the needed information [7]. This study takes a better chance by conducting a verification survey by using ten (10) designs in collecting the data. This initiative is able to avoid the skewed data collection result [7].

Furthermore, the ten (10) designs are the initial design ideas that need to be verify. It is often necessary to verify the design space as much as possible, to consider how they will meet users' needs, rather than immediately settling on one design. This will also facilitate the next stage [11].

There is one page in the survey booklets of the verification survey that shown a table of those three (3) selected minimalist principles in order to be used as the criteria or guidelines by the experts to answers the survey and to ascertain the result. In depth, all those three (3) selected principles brought their own concept of criteria that focus as guidelines to the expert to verify either it minimalist design or not.

Firstly for getting started fast, each design should perform simple and easy to understand by making damaging sacrifices of elements on the user interface (UI) in order to achieve this goal. In other words, providing more white space on each design is better. Secondly for exploiting prior knowledge, each website design should cover the another theory of design such as the Gestalt principles. Each design had shown all or some elements of Gestalt theory as the compulsory criteria that should have on the minimalist design. Thirdly the reasoning and improvising, is the last concept of criteria in performing minimalist web design for this verification survey. It is can covers the elements of text or graphic icon that able to help users understand what kind of information it stands for. In short brief, all the criteria is shown by the arrows and text boxes on each of the design such as showing in Figure 1 through Figure 10, that act as guidelines to the expert to choose the 10 designs either it is minimalist design or not.

The following is the full view of the website's interfaces design that has been proposed using the minimalist design to be verified by three (3) experts.



Figure 2: The view of Design 2

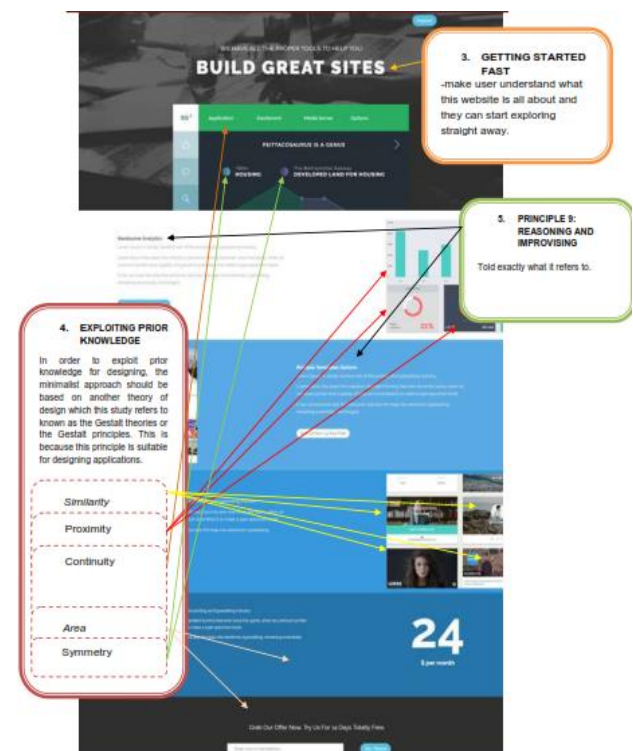


Figure 3: The view of Design 3



Figure 1: The view of Design 1

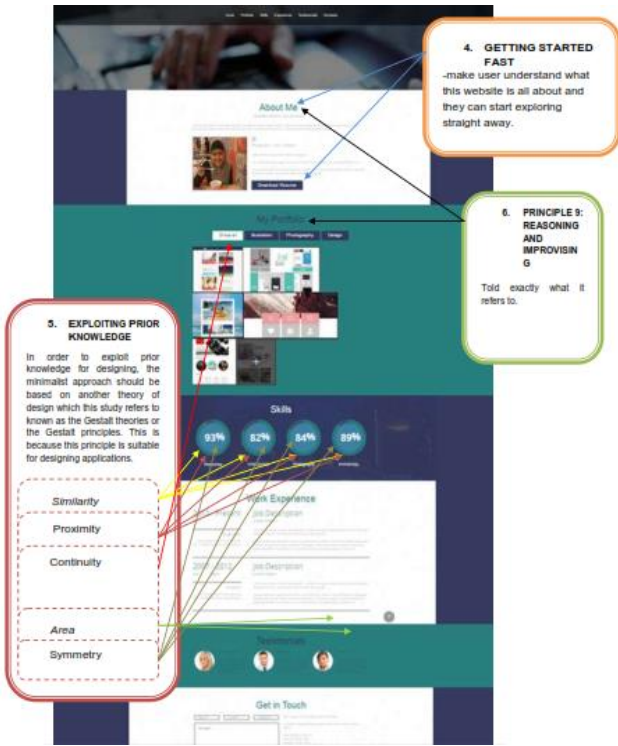


Figure 4: The view of Design 4

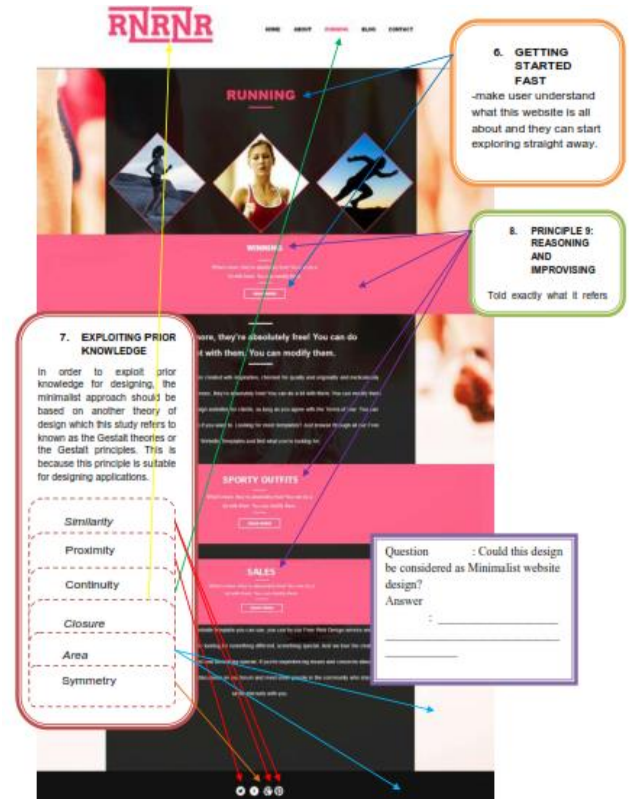


Figure 6: The view of Design 6

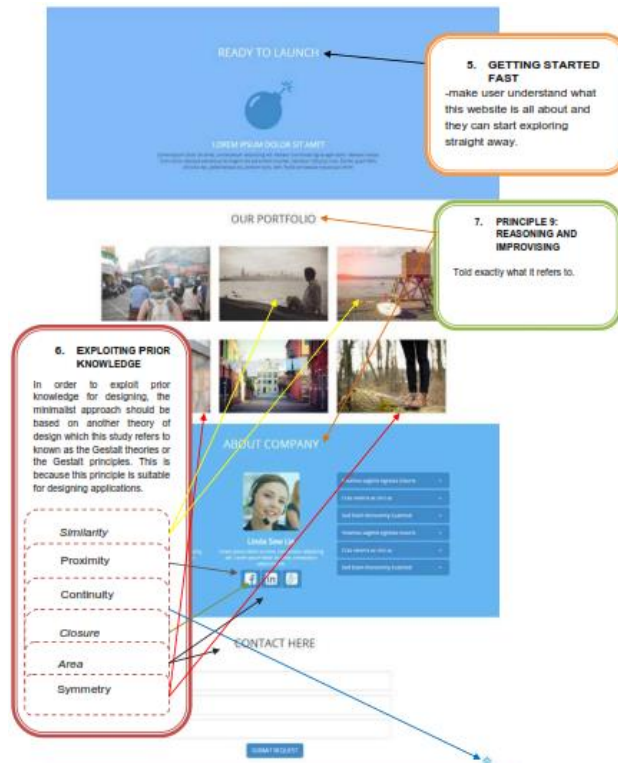


Figure 5: The view of Design 5

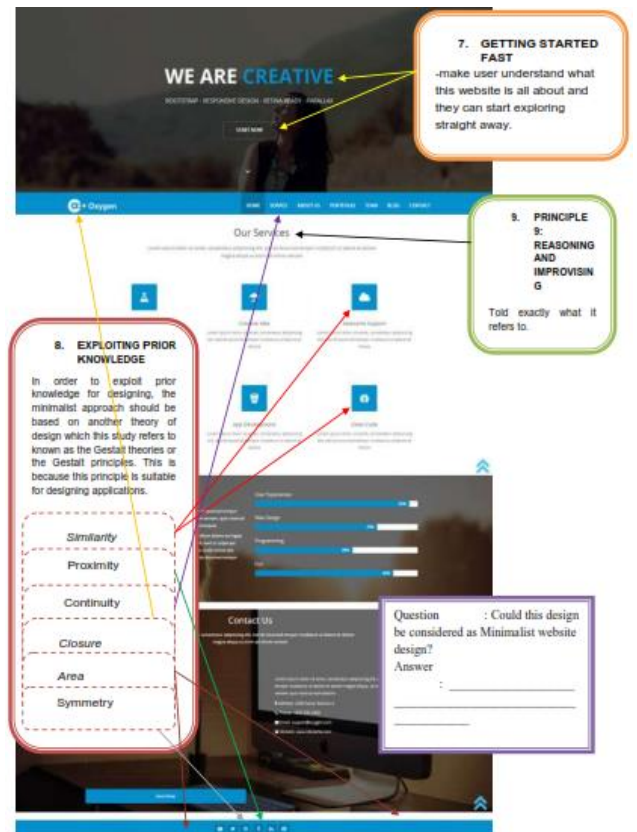


Figure 7: The view of Design 7

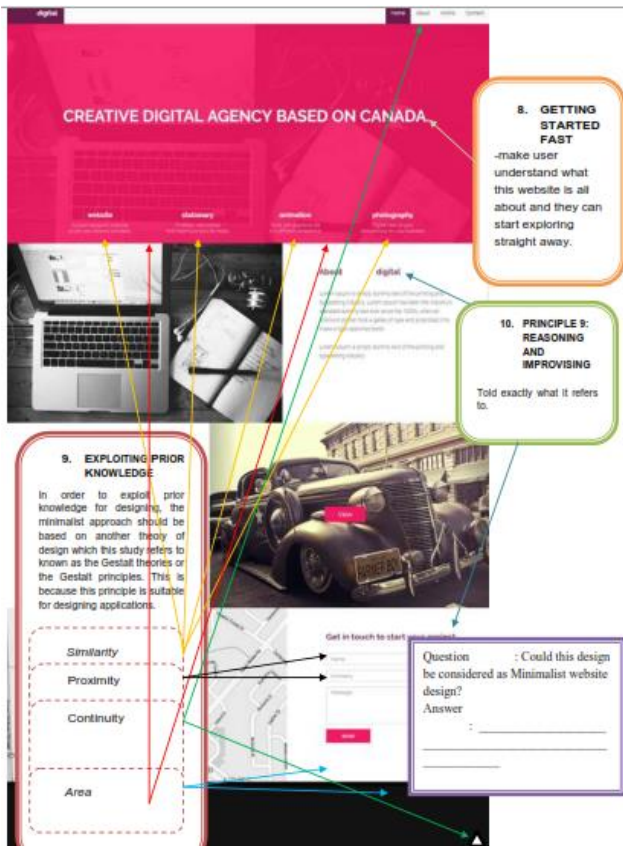


Figure 8: The view of Design 8

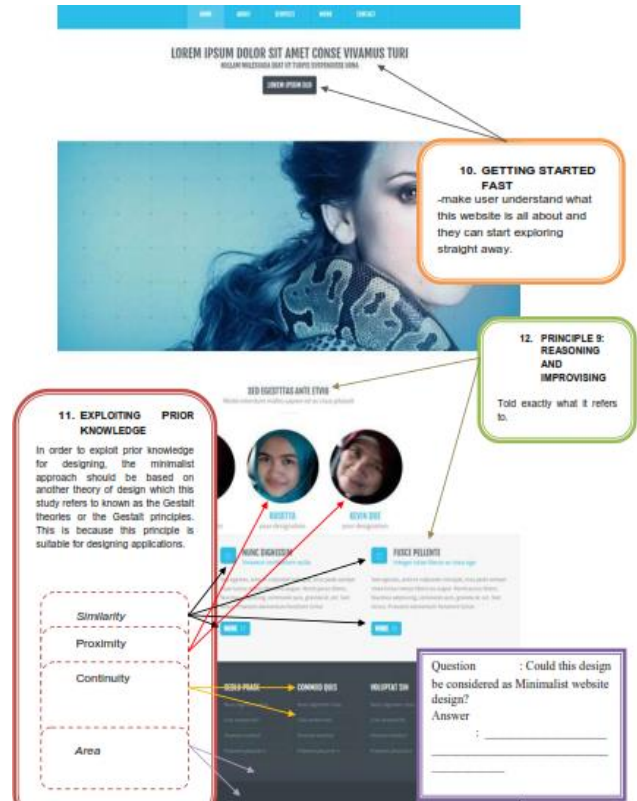


Figure 10: The view of Design 10

## VI. DATA ANALYSIS AND RESULTS

This section discusses the data analysis and findings from verification survey of website designs completed by three (3) experts from the fields under human computer interaction (HCI) sector. The purpose of this survey is to verify the proposed website designs that implemented the theories of three (3) selected minimalist principles. Those three (3) selected minimalist principles been chosen based on the less studies be conducted by previous researchers on the minimalist approaches. Table 1 shows the collected data from the experts' verification process regarding the minimalist website design.

Table 1

Analysis of Minimalist Design based on The Expert Reviews. \*Tick (/) is considered as having achieved the minimalist interface level

Design	Expert 1	Expert 2	Expert 3
Design 1	/	/	/
Design 2	/		
Design 3	/		
Design 4		/	
Design 5	/	/	/
Design 6	/	/	/
Design 7	/	/	/
Design 8	/	/	/
Design 9	/	/	/
Design 10	/	/	/

As can be seen from Table 1, Design 1 successfully achieves the level of minimalist design from all of the three experts. Consequently, Design 1 is considered a minimalist website design. Unfortunately, Design 2 and 3 are only able to achieve one positive response from Expert 1 while the other two experts' response is vice versa. Therefore, Design 2 is not a minimalist website design. It is almost the same

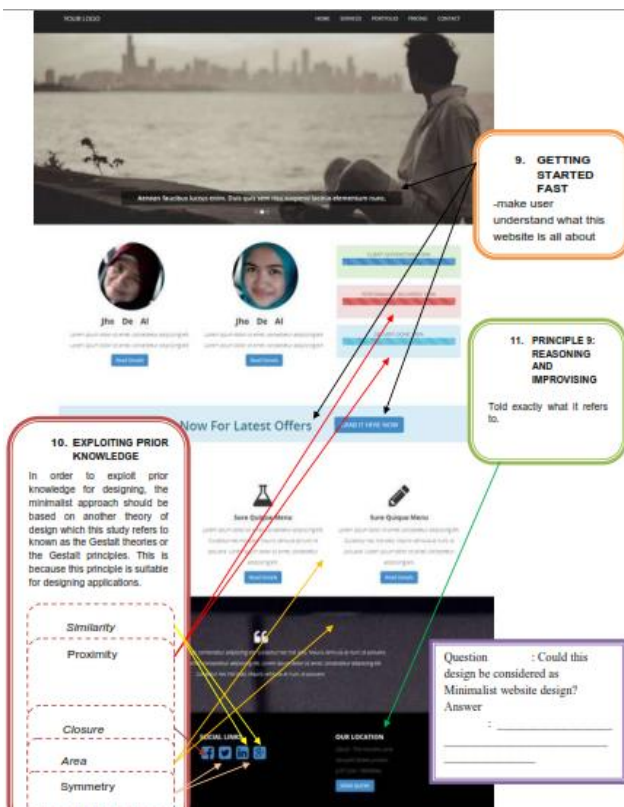


Figure 9: The view of Design 9

situation for Design 4. It has only obtained one response from Expert 2 for minimalist, while the other experts decided that Design 4 is not a minimalist design. It is different for Designs 5 and 6, whose designs obtained the minimalist level from all three experts. Accordingly, both of the designs are considered a minimalist website design.

Designs 6 and 8 gained the minimalist level from two (2) experts who are Experts 1 and 3. Thus, Design 6 and 8 are considered using a minimalist website design because it gets two positive feedbacks out of three. Similarly, fully positive responses were given by all three experts for Designs 9 and 10. Hence, both of the designs are considered minimalist designs.

In simple brief, out of ten designs, there are seven (7) designs which been decided as minimalist design. The experts had chosen those seven (7) design because all of it had achieve the levels of performing all the criteria from the selected minimalist principles in well doing and achieving the minimalism concept.

Overall, as a result of the experts' verification, there are seven Designs which are able to be considered as a minimalist website design, namely Designs 1, 5, 6, 7, 8, 9, and 10. These seven (7) Designs will be applied as interfaces in the entrepreneur's website. In addition, these designs could become the guidelines in developing website templates for entrepreneurs.

## VII. CONCLUSION

This paper is focusing on the investigation survey among experts in order to verify the business website design that follows the selected minimalist principles. The current study applied three minimalist principles, namely Principle 1: getting started fast, Principle 4: exploiting prior knowledge,

and Principle 9: reasoning and improving in designing the minimalist interfaces for entrepreneurs' websites. In conclusion, the results from this study could act as guidelines for developers to design a simple and practical interface for entrepreneurs' websites.

## REFERENCES

- [1] A. Shaouf, K. Lu, and X. Li, "The effect of web advertising visual design on online purchase intention: an examination across gender," *Computers in Human Behavior*, vol. 6, pp. 622-634, 2016.
- [2] J. Hering, *Grammar Construction In The Minimalist Program*, Department of Linguistic, Indiana University, 2016.
- [3] M. Picha, "A minimalist framework for thought experiment analysis," *Organon F.* vol. 23, no. 4, pp. 503-524, 2016.
- [4] C. C. Guey, "Translation from gestalt perspectives," *Asian Journal of Social Sciences, Art, and Humanities*, vol. 4, no. 4, pp. 68-80, 2016.
- [5] K. Korpela, "The art of data visualization: A gift or a skill?, Part 2," *ISACA Journal*, vol. 2, 2016.
- [6] K. Meyer, "Towards a definition of minimalism: Principles of minimal visual design in web interfaces," 2015.
- [7] B. Sneiderman, "Usability testing," in *Software Interfaces, ITNP43:Interface Design and the WWW*, 2014, Ch. 4.
- [8] A. N. Tuch, E. E. Presslauer, M. Stöcklin, K. Opwis, and J. A. B. Avila, "The role of visual complexity and prototypicality regarding first impression of websites: Working towards understanding aesthetic judgments," *International Journal of Human-Computer Studies*, vol. 70, no.11, pp. 794-811, 2012.
- [9] N. U. Bhaskar, "General principles of user interface design and websites," *International Journal of Software Engineering (IJSE)*, vol. 2, no. 3, pp. 45-60, 2011.
- [10] G. Lee, C. M. Eastman, T. Taunk and C.-H. Ho, "Usability principles and best practices for the user interface design of complex 3D architectural design and engineering tools," *International Journal of Human-Computer Studies*, vol. 68, no. 1-2, pp. 90-104, 2010.
- [11] H. Petrie, and N. Bevan, "The evaluation of accessibility, usability and user experience," in *The Universal Access Handbook*, C. Stephanidis, Ed. CRC Press, 2009, Ch. 20.
- [12] J. Brophy, and D. Bawden, "Is Google enough? Comparison of an internet search engine with academic library resources," *Aslib Journal of Information Management*, vol. 57, no. 6, pp. 498-512, 2005.