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# THE ANALYSIS OF FACTORS MAKING PARTICIPATION OF ELECTRONIC BIDDERS OF CONSTRUCTION PROJECT AND ITS EFFECT ON PROFITABILITY OF COMPANIES IN CENTRAL LOMBOK: A BEHAVIORAL FINANCE PERSPECTIVE

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**Abstract**

*This study aims to (1) identify and analyze the factors of behavioral Finance forming participation offers of participants' auction, and (2) analyze the effects of factors that are formed from the factor analysis on the profitability of the construction company in Central Lombok regency. This research used quantitative methods with a exploratory-descriptive research design. The method of data collection is the census method. The technique of collecting data used an instrument in the form of a questionnaire distributed to 103 respondents who are construction work service providers domiciled in Central Lombok Regency, West Nusa Tenggara, Indonesia, and have submitted auction bidding documents from 2017 to June 2018 in LPSE Central Lombok Regency. The data analysis tool in this study used factor and linear regression analysis. The results showed that (1) factor that decide in the decision-making participation offers auction participants electronically construction project in Central Lombok regency is the time factor of the implementation of auction(availability), the company's experience(overconfidence), fears(regret aversion), the policy of auction without face to*

*face(anchoring) and seasonal conditions(hindsight), and (2) timing factors of the auction(availability) has a positive influence not significant to profitability, the company's experience(overconfidence) has a negative effect no significant effect on profitability, concerns(regret aversion) has no significant negative effect on profitability, auction policy without face-to-face (anchoring) has negative effect non-significant on profitability and hindsight conditions have positive effect no significant on profitability.*

*Keywords: Behavioral Finance, Making Decision of Auction Deals, Procurement of Goods and Services, Profitability*

## INTRODUCTION

Based on the Regulation of the Government Goods / Services Procurement Policy (LKPP) Number 1 of 2015, bidding participation of bidders is one of the elements in the process of procurement of goods / services electronically which has an important role, where the success or failure of a process for the procurement of goods / services depends on the role of decision making carried out by the company managers of auction participants in the submission of bid documents. For companies, the construction service business is a business that is very rational, competitive, negotiative, high mobility and very dynamic, hard and sensitive, requires professionalism, teamwork, requires many relationships, uses resources, across disciplines, regulated by legislation -discipline, bound by work contract (contract), very limited time, there are demands for quality, prone to accidents and work risks, very conditional and situational, influenced by weather and environment, so that it needs to be totally imbued. However, if it is ready to speculate and challenge all business risks with full calculation, this business really has very promising prospects (Malik, 2010).

The advantage of construction services business is one of the goals to be achieved by business people. Business profits are obtained only if there is construction work done. Jobs are obtained by winning tenders or auctions. Winning an auction can only be achieved by taking part in an auction. To be able to take part in the auction, of course, must meet the qualification requirements as an auction participant. Whereas to be able to win the auction must submit an offer that meets all administrative and technical requirements, and offers prices that are favorable to the state, competitive, and *responsible* (Malik, 2010).

Based on data from LPSE Central Lombok Regency during the period of 2011 to June 2018, this showed the instability of the growth in the number of auction packages and the number of bidders bidding participation.

Table 1. Number of Construction Work Auction Packages in 2011 to June 2018 in LPSE Central Lombok Regency

| Description | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Number of Auction Packages | 4 | 105 | 50 | 48 | 68 | 83 | 64 | 51 |
| Number of Bidder Participants | 54 | 3,845 | 1,340 | 1,465 | 2,667 | 3,878 | 2,659 | 2,689 |
| Amount of Bid Auction | 24 | 646 | 282 | 273 | 386 | 575 | 332 | 396 |

Source: Data of LPSE Central Lombok Regency Processed 2019.

Table 1 shows the instability in the number of bidders bidding participation. Even though in terms of training and technical assistance to increase the capacity of Human Resources (HR) bidders to the use of the SPSE application has been carried out, both done by LPSE Central Lombok Regency itself and from the Government Procurement of Goods and Services Policy Institute. Based on LPSE data from Central Lombok Regency, there were 62 entrepreneurs who specifically conducted training on the use of the SPSE Application and 302 entrepreneurs who only requested assistance to LPSE. This indicates that there are causes other than the increase in the capacity of the auction participants' HR that influence the decision making of bidders, such as the existence of psychological factors that influence someone to invest (Fachrudin et al., 2013). Because in principle, following an auction / tender is one way to get a business contract (investment) on a large scale or expand business (Malik, 2010).

Investment analysis that uses psychology and financial sciences is known as *behavioral finance* (Manurung, 2012). This is related to the auction situation in LPSE, Central Lombok Regency, where the number of bidders' bidding participation tends to fluctuate. *Behavioral finance* can help corporate managers to make decisions for investment development (Nofsinger, 2005). *Behavioral finance* can be associated with factors that influence investors in making investment decisions, and ultimately form financial behavior from each investor who will invest funds in the auction package in the district government of Central Lombok.

Previous research related to decision-making factors in the participation of bidders was conducted by Suciptapura et al. (2013), who stated that there were 9 (nine) main factors that influenced the company to participate in the auction electronically, namely: 1) human resources and company confidence; 2) project location and season; 3) contract system and auction system; 4) the level of auction competition; 5) capital and time; 6) experience; 7) government

policies and economic conditions; 8) type and amount of equipment; and 9) construction market conditions. The results of different studies are shown by Sudipta et al. (2015), who found that the most dominant factor in decision making as an auction participant was factor I consisting of ownership of SKA (Expertise Certificate) and SKT (Skill Certificate), reliable availability of labor, capital owned by the company, types of work items offered, similar work experience, project budget ceiling. Furthermore, factor II consists of the ease of getting information, the timing of the auction, the project location to be offered, the level of auction competition, the type and amount of equipment to be used. Next factor III is the contract system that will be used later, administrative requirements on procurement documents and government policies.

The results of other studies that separate between participation as bidders and participation in bidding were conducted by Respawan et al. (2017) found that the most dominant factor in determining decision making as a bidder was the project location, the value of the project / HPS, the project's environmental security, the project approaching the end of the year, without face-to-face minimizing opportunities for collusion, corruption and nepotism. Road to the project location, implementation during the rainy season, ISO certificate requirements, bank financial support requirements and auction organizer variables. The most dominant factor in determining decision making in participating in price quotes is fluctuation in material prices, investment returns, fluctuations in foreign exchange rates (dollars), road access to the project location, opportunities to get bigger projects, risk of investing, inflation rates, lower cost savings without document printing costs and transportation costs and capability variables in the estimated bid.

According to Asri (2013) in Elster (1998), and Hermalin and Isen (2000), ensures that in every process of investment decision making, belongs to any group of investors (educated or not, experienced or not, male or female, old or young, large or small investors), definitely involves emotions in the investment decision making process. Where emotions contain aspects *behavioral*, emotions will affect a person's behavior in attitudes toward information obtained. There are 3 main groups that cause *cognitive bias* in the financial decision making process, namely the first group is a bias *heuristic* consisting of *availability, hindsight* and *representativeness*. The second group is *the bias* reaction towards information consisting of: *overreaction, conservatism, anchoring and adjustment*, and *confirmation bias*. The third group is the *bias of* understanding information and self-adjustment, which consists of: *excessive optimism, overconfidence, framing effects, disposition effects,* and *mental accounting*.

Shefrin (2007) categorizes aspects of *behavioral finance* which play a role in investment decision making, namely *bias, heuristics* and *framing effects.* If it is used as a variable in general, then in *behavioral finance* there are several variables that can be used as

considerations in making investor decisions, including *agency, overconfidence, anchoring, galmbler's fallacy, loss aversion, aversion regret, mental accounting, speed ringing* and so on (Abedini, Jamali, & Ranjbar, 2014). Luong and Ha (2011) found in their research that the variables that most influenced the rating system of an investor are more referring to the prospect theory which consists of *regret aversion, loss aversion* and *mental accounting*. Investment decision-making behavior as found in *behavioral finance*, especially the prospect theory can make investors more alert to losses (Haigh & List, 2005) but Abedini *et al*. (2014) concluded that *regret aversion, loss aversion* and *mental accounting* as a whole had a negative influence on investment performance of investors, while *overconfidence* and *anchoring* were effective factors in investment.

Based on the phenomenon, *research gaps* and auction data of LPSE in Central Lombok regency which tend to fluctuate, and then done the research on decision-making participation of bidders electronically deals construction jobs in Central Lombok regency based on perspective of *behavioral finance,* with its objectives as follows:

1. To identify and analyze factors of *behavioral finances* forming participation in bidding electronically for construction work in Central Lombok Regency.
2. To analyze the influence of factors that form the participation of bidding participants electronically in construction work on the *profitability* of construction service companies in Central Lombok Regency.

## LITERATURE REVIEW

### Previous Research

In the research of Suciptapura *et al*. (2013) obtained the results that the characteristics of the contractor, namely the availability of project human resources equipped with skilled expert certificates and the availability of heavy equipment together can increase project participation and acquisition in the auction. The lack of auction equipment and poor internet connections is an electronic factor that can reduce project participation and acquisition in electronic auctions. Factors affecting the contractor to participate in the auction consist of 9 main factors, among others: human resources and company confidence, project location and season, contract system and auction system, level of auction competition, capital and time, experience, government policies and economic conditions, type and amount of equipment, construction market conditions.

Furthermore, research by Sudipta *et al*. (2015) obtained the results that there were 3 factors affecting the contractor to participate in the government auction with the system *e-procurement* with *Commulative of Variance* 82.025 percent, which was formed from 14

variables. The factor that has the most dominant influence is factor I with an *eigen value of* 7.152 which is formed by 6 variables, namely ownership of SKA (Expertise Certificate) and SKT (Skill Certificate), reliable labor availability, capital owned by the company, type of work item to be offered, similar work experience, project budget ceiling. The next factor was followed by factor II with an *eigen value of* 2,661 which was formed by 5 variables namely easy to get information, time to conduct the auction, project location to be negotiated, auction competition level, type and amount of equipment to be used, and factor III with *eigen value* 1,671 formed by 3 variables, namely the contract system that will be used later, administrative requirements on procurement documents, government policies.

According to Respawan *et al*. (2017), this obtained results that this was formed 11 new factors that influence the participation of bidders with cumulative *variance of* 79.198%, which was formed from 42 variables. The dominant factor with *Eigen values is* 20.738 and the *variance of* 42.323% is formed by 11 variables, namely, project location, project / HPS value, project environmental security, starting with the project nearing the end of the year, without face-to-face minimizing opportunities for collusion, corruption and nepotism, the period of implementation of road access to the project location, implementation during the rainy season, ISO certificate requirements, bank financial support requirements and auction organizer variables. While the analysis of factors affecting the bidding value of bidders resulted 10 new factors with cumulative variance of 78.925%, which was formed from 43 variables. The dominant factor with *eigen values is* 22.756 and the variance of 47.409% is formed by nine variables, namely, fluctuations in material prices, return on investment, fluctuations in foreign exchange rates.

Subsequent research conducted by Laksmiwati (2017), this obtained results that investment decisions did not have a significant effect on funding decisions; investment decisions have a significant positive effect on *profitability*; investment decisions have a significant positive effect on firm value; and funding decisions are able to become variable intervening that strengthens the relationship of investment decisions to have a negative effect on *profitability*.

Based on previous research described earlier, several indicators can be used in this study, namely the contract system used, the project location bid, the level of auction competition, concerns, reluctance, the time of auction, the period of implementation, experience, the types of work items offered, condition of the season, auction system, auction organizer, auction policy without face to face, human resources, company capital and road access to the project location.

### *Behavioral Finance*

According to Ricciardi (2000), *behavioral finance* is a discipline of science in which there are inherent interactions between various disciplines and continuous integration so that the discussion is not carried out in isolation. Three aspects that influence a *behavioral finance* of someone are psychology, sociology, and finance. Pompian (2006) separated *behavioral finance* into two subtopics; this is done to make it easier to understand the benefits of learning about *behavioral finance*. The first subtopic is *behavioral micro finance* and *macros*. According to Lintner (1998), *behavioral finance* is a science that studies how humans respond to and react to information in an effort to make decisions that can optimize the rate of return by taking into account the risks inherent in it (elements of attitudes and human actions are determinants in investing)

### *Prospect Theory*

*Prospect theory* is a theory developed by Kahneman *and* Twersky (1979), and is a theory that describes how someone individually evaluates their advantages and disadvantages. In addition, according to Pompian (2006) in the prospect theory there are several concepts of bias described, namely *framing, loss aversion, regret aversion, mental accounting* and *self-control.* But in this study, authors used several concepts of *bias*, including *mental accounting* and *regret aversion.*

*Mental accounting* is a psychological factor that can be a person's help in controlling oneself which causes people to think rationally so that they can make good decisions (Thaler & Sunstein, 2008). Investors who have *mental accounting* in decision making when transacting are investors who consider the *costs* and *benefits* of decisions taken (Nofsinger, 2005). Whereas *regret aversion is* described as a term to describe feelings of disappointment after making a decision in uncertain conditions, the decision turns into a bad choice even though the decision is based on correct information (Gazel, 2015). *Regret aversion* seeks to prevent pain from remorse associated with mistakes in decision making (Fachrudin et al., 2013). In the study (Hanopia et al., 2018) stated that the factors of concern and reluctance were the determining factors in making investment decisions.

### *Heuristic*

Heuristic explains how an investor has a belief bias that can influence him in thinking and making decisions (Bondt, Muradoglu, Shefrin, & Staikouras, 2008). Heuristics are also explained as a view where investors make decisions under uncertain situations, this uncertainty can occur due to an active, dynamic and complex environment. In these uncertain conditions

the decisions taken may be wrong, biased or become irrational. According to Asri (2013), there are 3 main groups in the decision making process namely *heuristic* which consists of *availability, hindsight*, *representativeness*. reaction bias towards information consisting of *overreaction, conservatism, anchoring and adjustment*, *confirmation bias* and bias in understanding information and self-adjustment*,* which consists of *excessive optimism and overconfidence, framing effects, disposition effects,* and *mental accounting.* However, in this study we will use several concepts of *bias*, including *availability, hindsight*, *anchoring* and *overconfidence*, because these factors have an important role in making decisions of the goods / services provider to enter the price bidding in the auction process.

*Availability* is a simplification behavior *heuristic* "equipped" with a tendency to use only available information (*availability bias*). There is reluctance, especially because of the limited time to look for additional data or information to strengthen the analysis. Often the available data is seen as sufficient and can be used as it has been done before. Consequently, the possibility of making a mistake is relatively large due to the neglect of other variables (Asri, 2013).

*Hindsight* is a behavior of simplifying the decision making process that is related to past experience known as *hindsight.* People often see the experience they have, although it is limited as the easiest reference to understand. Even when an event occurs, he feels (as if) already knew beforehand that the event would occur. This behavior often makes people reluctant to make predictions based on realistic methods, so that the reaction to information is *biased*.

*Anchoring* is behavior that refers to the decision-making process when quantitative assessments are needed and this assessment is affected by investors' personal suggestions (Johnsson, Henrik, Lindblom, Peter, & Platan, 2002). In addition Pompian (2006) states that *anchoring* and *adjustment can* occur when an investor is needed to estimate something that is not known beforehand, so that investors make a *default number* or *anchor* as the basis for their estimation. In Shefrin (2007) it is stated that *anchoring* is a condition where an investor makes a prediction of the initial number as a reference. And according to Bondt *et al*. (2008) *anchoring* is a form of bias that only believes in one piece of information, so the investment decision is based on only one particular information.

Whereas o*verification* according to (Nofsinger, 2005) is a feeling of excessive self-confidence and can create an nature *overestimate* of the knowledge possessed by investors themselves and *underestimate the* predictions of other investors or what has been done, because it is more trusting in the knowledge of investors themselves.

### Investment Decision Making

Decision making is defined as a comprehensive process, not just a simple action that only chooses between the numbers of *alternatives* (Coulter & Robbins, 2007). While Handoko (2011) defines decision making is as determining a series of activities to achieve the desired results and to solve a problem.

### Electronic Procurement of Goods / Services and *e-Tendering*

Based on Regulation of Head of Government Goods / Services Procurement Policy Agency (LKPP) Number 1 of 2015, procurement of goods / services electronically is the procurement of goods / services carried out using information technology and electronic transactions in accordance with statutory provisions, the procedures for selecting goods / services providers are carried out by *e-tendering* procedures, namely procedures for selecting goods / services that are openly conducted and can be followed by all providers of goods / services registered in the procurement system electronically by submitting one offer within a specified time.

### *Profitability*

*Profitability* is the company's ability to generate profits and measure the level of operational efficiency and efficiency in using its assets. Therefore the company's profitability must be seen as a driving factor and in the long run, the company must generate sufficient profits from its business so that it can pay its obligations (Rodoni & Ali, 2014).

*Profitability* can be calculated by *return on equity* (ROE). ROE reflects the level of return on investment for shareholders. High profitability reflects the company's ability to generate profits for shareholders. ROE from accounting side is a measure of actual performance outcomes (Ross et al., 2009).

## RESEARCH METHODS

This research is a quantitative study with type of research *exploratory-descriptive* type (Silalahi, 2010). The populations in this study were all construction service providers with criteria domiciled in Central Lombok Regency and had participated in submitting bidding documents in electronic auctions 2017 to June 2018 in LPSE Central Lombok Regency as many as 103 respondents. The data collection method used in this study is the method *census*.

Data collection techniques used was questionnaire techniques with questionnaires as a data collection tool. The analytical tool used was factor analysis and multiple linear regression analysis. Factor analysis was a technique used to look for factors that were able to explain the relationship or correlation between various independent indicators observed (Widarjono, 2010).

Multiple linear regression analysis is a technique used to test the effect of several independent variables on the dependent variable (Sekaran, 2006), namely by testing the interaction that occurs between the *scores* factor formed with the variable *profitability.*

This study used sixteen factors derived from six variables (*mental accounting, aversion, availability, hindsight regrets, anchoring* and *overconfidence)*. Sixteen of these factors are the contract system used, the project location (*mental accounting*), the level of auction competition, concerns, aversion *proposed*, the time of auction, the time period (*availability*), experience, the type of work item being offered, season conditions*(hindsight),* the system of auction, the auctioneer, the auction policy without face to face*(anchoring),* human resources, capital companies and the access road to the project site(overconfidence).

## RESEARCH RESULTS

### Description of Respondents Characteristics

This research used several characteristics of respondents, both consisting of the type of gender, recent education, company qualifications, experience in participating in the auction of construction work and the choice of Skills Certificate (SKT). This study found 79% (81 respondents) were male respondents, and 21% (22 respondents) were female respondents. The majority of respondents have high school / vocational education which are 64% (64 respondents) and with the majority of respondents experienced between 6 to 10 years, 37% (37 respondents). While the majority of respondents have skills and skills certificates that are 89% (92 respondents). The majority of respondents are companies with small qualifications which are 98% (101 respondents). The characteristics of the respondents also showed that 67 companies managed to win the tender and 36 companies failed to win the tender.

### Kaiser Meyer Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity

Testing of sample adequacy was through the index *Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Spericity significance*. The KMO value obtained in this study was 0.806 and the significance value of *Bartlett's Test of Spericity* was 0,000, meaning that there is a relationship between the indicators examined in this study, so that factor analysis can be used in this study.

From the results of testing using factor analysis of sixteen *components* that represent the number of factors of the variables used in the study, five factors were formed. The formed factor group is based on the value *eigenvalue*, that is, if the value is *eigenvalue* ≥ 1 then the

indicator is included in the formation of factors, but if the value *eigenvalue*<1 then the indicator cannot be included in the formation of factors (Widarjono, 2010).

**The Factor Rotation**

Next factor is rotated using the rotation method *varimax*, so that the results as shown in Table 2 are obtained.

Table 2 Factors Formed After Turnover

| Indicators | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Contract Systems | 0.574 | -0.001 | 0.455 | 0.154 | 0.186 |
| Project Locations | 0.655 | 0.247 | -0.340 | 0.082 | 0.222 |
| Auction Competition | 0.555 | 0.258 | 0.028 | 0.165 | 0.207 |
| Concerns | 0.115 | 0.277 | **0.800** | -0.040 | 0.136 |
| Reluctance | -0.091 | -0.035 | 0.401 | 0.528 | 0.346 |
| Implementation of Auction | **0.807** | 0.072 | 0.170 | 0.064 | 0.029 |
| Duration | 0.759 | 0.227 | 0.099 | -0.147 | 0.028 |
| Experience | 0.073 | **0.776** | -0.033 | 0.072 | 0.051 |
| Job Items | 0.411 | 0.628 | 0.147 | 0.008 | 0.068 |
| Season Conditions | 0.200 | 0.055 | 0.154 | -0.024 | **0.877** |
| Auction Systems | 0.540 | 0.463 | 0.326 | 0.298 | 0.103 |
| Auction Operator | 0.331 | 0.367 | 0.504 | 0.470 | -0.115 |
| Auction Policy | 0.089 | 0.097 | -0.065 | **0.900** | -0.002 |
| Human Resources | 0.310 | 0.719 | 0.311 | -0.039 | -0.091 |
| Company Capital | 0.069 | 0.622 | 0.188 | 0.166 | 0.358 |
| Access to Location | 0.272 | 0.387 | -0.109 | 0.309 | 0.474 |

Source: Results of SPSS data processing, 2019

From Table 2, It can be seen that the *availability time*, company experience (*overconfidence*), concern (*regret aversion*), auction policy without *anchoring* and sational conditions (*hindsight*) has the biggest factor *loading*, so these factors are very decisive factors in making decisions in participating bidding electronically for construction work in Central Lombok Regency.

**Test Results of Multiple Linear Regression**

Multiple linear regression analysis was used to explain the relationship between the dependent variable*(profitability)* with several independent variables, factors that were formed in earlier tests which consisted of factors period of implementation of the work*(availability),*the company's experience*(overconfidence),* concerns (*regret aversion*), auction policy without *anchoring* and *hindsight*.

**Feasibility Test Model (F-Test)**

F test is a model feasibility test that must be done in linear regression analysis. The F test is used to assess the feasibility of the formed regression model. If a significant value is less than *alpha* (5%), then the independent variable can be used to predict the dependent variable. In multiple linear regression analysis, significant F test equals significant in t test (Ghozali, 2012).

Table 3. F Statistic Test Results

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 189.157 | 5 | 37.831 | 0.379 | 0.862[b] |
| | Residual | 9681.486 | 97 | 99.809 | | |
| | Total | 9870.643 | 102 | | | |

Source: Results of SPSS data processing, 2019

Based on Table 3. Anova test results or F test above, obtained $F_{count}$ of 0.379 with a significance level 0.862. This value is far greater than the value of the significance level of 0.05. This means that five factors formed from the result factor analysis test simultantly influenced positively but not significant to *profitability*.

**Partial Test (t-Test)**

The next step is to do a t-test by comparing $t_{count}$ with $t_{table}$ at 5% confidence level.

Table 4. T-Test Results

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 16.377 | 0.984 | | 16.637 | 0.000 |
| | Availability, | 0.032 | 0.989 | **0.003** | 0.033 | 0.974 |

Table 4...

| | | | | | |
|---|---|---|---|---|---|
| Overconfidence | -0.370 | 0.989 | **-0.038** | -0.374 | 0.709 |
| Regret aversion | -0.916 | 0.989 | **-0.093** | -0.926 | 0.357 |
| Anchoring | -0.847 | 0.989 | **-0.086** | -0.856 | 0.394 |
| Hindsight | 0.400 | 0.989 | **0.041** | 0.405 | 0.687 |

Source: Results of SPSS data processing, 2019

Based on the results of the t-test as shown in Table 4 above, this is obtained results as follows:

1. There is a significant value of the *availability* period of 0.974. The significance value is greater than 0.05, or the value of 0.974> 0.05, it can be concluded that the timing of the auction (*availability*) has a positive and not significant effect on *profitability*.
2. There is a significant value of the factor of company experience (*overconfidence*) of 0.709. The significance value is greater than 0.05, or the value of 0.709> 0.05, it can be concluded that the factor of corporate experience (*overconfidence*) has a negative and not significant effect on *profitability*.
3. There is a significant value of the *regret aversion* of 0.357. The significant value is greater than 0.05, or the value of 0.357> 0.05, it can be concluded that the concern factor (*regret aversion*) has a negative and not significant effect on *profitability*.
4. There is a significant value of the auction policy factor without *anchoring* of 0.394. The significance value is greater than 0.05, or the value of 0.394> 0.05, it can be concluded that the auction policy factor without *anchoring* has a negative and not significant effect on *profitability*.
5. While the significant value of the season condition factor (*hindsight) is* 0.687. The significant value is greater than 0.05, or the value of 0.687> 0.05, so it can be concluded that the season condition factor (*hindsight)* has a positive and not significant effect on *profitability*.

## DISCUSSION OF RESEARCH RESULTS

This research uses six variables consisting of sixteen factors. These are *mental accounting* which consists of factors, namely the contract system to be used and the location of the project. Variable of *regret aversion* is consisted of factors, namely the level of auction competition, concern and reluctance. Variable of *Availability* is consisted of factors, namely the time of the auction and the period of execution of the work. The variable of *hindsight* is consisted of factors, namely the type of work item to be offered and policy without face to face. The variable *anchoring* is consisted of factors, namely the auction system, auction organizer and face-to-face

auction policy. And the variable of *overconfidence* is consisted of factors, namely human resources, company capital, company experience and road access to the project location.

**The Determining Factors in Taking Decision to Participate in Bidder Bidding**

The results of the test using factor analysis show that there are five factors that are very decisive in making a decision to participate electronically bidding participants for construction work in Central Lombok Regency. These factors are the factor of the time of the auction (*availability*), company experience (*overconfidence*), concern (*regret aversion*), and auction policy without face-to-face (*anchoring*) and season conditions (*hindsight*).

Based on the results of this study, most respondents made the timing of the auction process (*availability*) an important part of the decision making process participating in the submission of bidding bid documents. The timing of the auction is an auction stage where work package information begins to be displayed by the Procurement Service Unit Working Group (Pokja ULP) on in *the website* LPSE Central Lombok Regency. The information emerges suddenly and sometimes by companies is never suspected at all. Usually companies can only predict that according to the habits of previous years, the auction / tender package will air on this month. *Availability heuristic* illustrates that in someone's eyes, the chance of something happening is determined by how closely the event is similar in memory (Kahneman & Twersky, 1979). At this time, the company is required to think quickly, whether to decide to participate in the work package that is being aired by the ULP Working Group or not. In the situation of limited time to look for data and information, often available data (*availability bias*) is seen as sufficient and can be used as previously done (Asri, 2013). Consequently, the possibility of making a mistake is relatively large due to the neglect of other variables.

Heuristic Theory also explains that investors can make decisions under uncertain situations, where this uncertainty can occur due to an active, dynamic and complex environment. In these uncertain conditions the decisions taken may be wrong, biased or become irrational.

The results of this study are also supported by previous research conducted by Suciptapura et al. (2013), that the timing of the auction is a major factor affecting companies in participating in auctions electronically. Whereas according to the results of research by Sudipta et al. (2015), the timing of the auction is a factor II in making a decision to become an auction participant.

Factor of company experience (*overconfidence*), according to most respondents is a very decisive factor in making decisions to participate bidding electronically by bidders. With the

company's experience in accordance with the package offered by the ULP Working Group, *over confidence* will arise. So the hope of winning the auction / tender is much greater.

*Overconfidence* is a feeling of excessive self-confidence which raises the nature *overestimate* of the knowledge possessed by the investor himself and *underestimates the* predictions of other investors or what he has done, because he believes more in the knowledge of the investor itself. *Overconfidence* comes from two psychological sources, namely illusion *of knowledge* and illusion *of control*. Illusion *of knowledge* is a condition in which investors feel confident about their predictions because they feel they have all the information, the more information that is obtained, the more investors feel they have control over the results they will get. While illusion *of control* is a condition in which an investor feels that trusting the results obtained is the influence of the investor on uncontrolled conditions. This attitude of *overconfidence* can influence investors in behaving when taking a risk, such as a rational investor trying to maximize profits and minimize the amount of risk taken (Nofsinger, 2005).

The results of this study are supported by previous research conducted by Suciptapura *et al*. (2013) that company experience is a major factor influencing companies in participating in auctions electronically, and research conducted by Sudipta *et al*. (2015), that the dominant factor in making a decision as a bidder is the experience of handling similar work.

Concern factor (*regret aversion*) according to most respondents is a very important part of determining the decision to participate in entering the bid document. The feeling of worry may arise as a result of the frequent information circulating in the news media regarding the number of corruption cases handled by the Corruption Eradication Commission (KPK) related to the process of procurement of government goods / services (Meilisa-DetikNews, 2019). Fraud practices in the process of procurement of goods / services, will have a negative influence on the company. Companies feel that with a lot of cheating, the chances of winning tenders / auctions are getting smaller, and the feeling of worrying about losing will be even greater. Feelings of fear of losing a lot of company profits will have a direct or indirect influence on a person's attitude or behavior (Gazel, 2015).

Prospect Theory *(Prospect Theory)* describes how someone individually evaluate the advantages and disadvantages (Kahneman & Twersky, 1979). This is a very strong reason for companies to make decisions to participate in bidding bidders. The results of this study are also reinforced by the results of previous studies conducted by Hanopia et al. (2018) that the concern factor is the determining factor in making investment decisions.

Factors in auction policy without face-to-face (*anchoring*) play an important role in the internal company, especially in taking the decision to participate in entering bidding document. Most respondents stated that government policy in terms of electronic auctions (*e-procurement*)

through LPSE was very appropriate, because it could indirectly minimize auction participants from fraudulent acts, and practices of collusion, corruption and nepotism (KKN) (Fat –Law Online, 2011). Because with an auction *online* (*e-procurement*) through LPSE, every auction participant and auction organizer cannot influence or intimidate each other as when the auction policy is manually implemented. So this policy will provide equal opportunities between bidders.

Electronic auction policies make it easier for companies to estimate something that is not yet known, so the company makes a *default number* or *anchor* as a basis for its estimation (Pompian, 2006). Even sometimes people are too fixated on their anchors and are reluctant to make too much adjustment. As a result, this behavior also has the potential to cause bias or error because there is a tendency to overestimate anchor information and not care about other information (Kahneman & Twersky, 1979).

The results of this study are supported by research conducted by Respawan *et al*. (2017) found that auction policy without face-to-face minimizes the opportunities for Collusion, Corruption and Nepotism (KKN) in making decisions as bidders.

The factor *hindsight*, according to the results of this study shows that the majority of respondents made it as a reference for the company in making a decision to participate in entering the bidding document. Past experience tends to make someone feel that an event can be predicted in advance just by seeing the last event (*hindsight bias*). The impact, someone will feel excessive trust in the ability to predict an event. People will be too risky to take risks. People will delay making important decisions when according to their predictions; bad events will occur (Asri, 2013). The results of this study are also supported by previous research conducted by Respawan *et al*. (2017) that the implementation of work during the rainy season is the most dominant factor in determining decision making as an auction participant.

**The Influence of Factors Formed on the Level of *Firm Profitability***

Based on the f-test results on five factors formed from the results of factor analysis, namely that are time factor (*availability*), company experience (*overconfidence*), concern (*regret aversion*), face-to-face auction policy (*anchoring*) and season conditions (*hindsight*) indicate that the five factors together (simultaneous) have a positive but not significant effect on *profitability*.

After testing with the t-test, the results show that the timing of the auction (*availability*) and the season condition factor (*hindsight*) have a not significant positive effect on *profitability*. While *overconfidence*, *regret aversion*, and auction policy without *anchoring* have no significant negative effect on *profitability*.

The time factor for the implementation of the auction (*availability*) and the season condition factor (*hindsight*) have no significant positive effect on *profitability*. The company's

ability to analyze events in situations of limited time to look for data and information, which only rely on previous experience of events, often creates the possibility of making a relatively large mistake (Asri, 2013). This can result in the company failing to win the auction / tender.

The results of this study are supported and in line with the thinking stated by Malik (2010) that participating in an auction / tender is only one way to get a business contract (investment) to expand the business. Because to be able to win the auction, the company must submit an offer that meets all administrative and technical requirements, and offers prices that are favorable to the state, competitive, and *responsible*. This means that if the company that takes the decision to participate in submitting the bidding document is not certain to win the tender, so the investment that the company plans may not necessarily be realized. As a result, the profits that the company plans also cannot be obtained. Therefore decision making to participate in entering bidding documents does not necessarily affect the level of *profitability of the* company. (2016)

Based on LPSE data from Central Lombok Regency, there were 67 companies that had won the tender / auction and 36 companies that had not won the tender / auction. From these data, there are 36 companies that have not succeeded in winning the tender, meaning that the ROE (*Return On Equity*) value obtained from the research respondents' income statement balance sheet is not purely ROE data produced solely from the auction of goods / services procurement, but also sourced from other business income of companies other than procurement of goods / services. This also supports the results of the study that participating decision-making in submitting bid documents has a positive but not significant effect on *profitability*.

Companies' experience factors *(overconfidence),* factor concerns *(regret aversion)* and auction policies without face to face *(anchoring)* have no significant negative effect on *profitability.* Company experience should make the company's self-confidence increase, but this can lead to failure to win the auction / tender, if the company ignores other variables (Asri, 2013).

Concerns and excessive trust in fraudulent behavior and auction policies for the procurement of goods / services can eliminate the opportunity to win tenders / tenders. This behavior also has the potential to cause bias or error because there is a tendency to overestimate established information and not care about other information (Kahneman & Twersky, 1979)

The results of different studies are shown by Laksmiwati (2017), who states that investment decisions are influential significant positive effect on *profitability*. This happens because of differences in the use of research samples, where the sample used is a sample of

companies registered in the *Jakarta Islamic Index* (JII) with annual data for 3 years, from 2013 to 2015. These results are also supported by research conducted by Maulana et al. (2016) that investment decision variables have a significant influence on firm value, because the research population used is a company included in the LQ 45 index during 2011-2015.

## IMPLICATIONS OF RESEARCH

**The theoretical implications** of this research imply that there are several factors of *behavioral finance* that need to be considered, namely the timing of the auction (*availability*), company experience (*overconfidence*), concern (*regret aversion*), auction policy without face-to-face (*anchoring*) and season conditions (*hindsight*) who determines the decision making process of participating bidding electronically for construction work in LPSE, Central Lombok Regency.
The results of this study confirm that in making a decision to participate, the inclusion of e-bidding documents electronically involves knowledge in the field of *behavioral finance,* especially with *Prospect Theory* and *Heuristic Theory*, so that knowledge in this field can be developed.

**The practical implications of the** results of this study have implications for *stakeholders internal*, namely employees and regional leaders of the Central Lombok Regency Government in particular to be able to improve the performance of government procurement of goods / services by understanding the needs and capabilities of local entrepreneurs so as to increase their participation in regional development.

For *external stakeholders,* that are local entrepreneurs in order to be able to provide social control and inputs to local governments on the implementation of government goods / services procurement so that they can improve the performance of government procurement of goods / services. This can be done by utilizing existing information technology, namely through *e-procurement* with easy and affordable access so as to ensure transparency and accountability in government procurement of goods / services.

**The policy implications of** this research are intended as material input and consideration for regional governments in formulating regional policies related to the procurement of government goods / services. The Regional Government through the Procurement of Goods and Services Procurement Section, in order to further simplify the auction requirements, but does not violate existing goods / services procurement regulations and more consider the ability of local providers who on average are still small entrepreneurs.

Simplification of auction / tender requirements is expected to increase opportunities for local providers to win tenders / tenders. Thus the auction of work packages, especially

construction work packages, attracted more attention and increased the number of local providers to participate in the submission of bid documents.

By winning the auction / tender, it is expected that the goods / services provider can obtain a large-scale business (investment) contract to expand its business, so that it can affect the profitability of local companies.

Regional Governments through the Development Administration Section and LPSE can further enhance the capacity of human resources of local entrepreneurs, both in terms of mastering information technology and in terms of technical guidance in making bidding documents, in order to compete with entrepreneurs from other regions.

## CONCLUSION

Based on the research conducted, it can be made several conclusions as follows:

1. The factors that are crucial in the decision-making offers of bidders participating electronically LPSE construction work in Central Lombok is a factor auction execution time *(availability),* experience company (*overconfidence*), concern (*regret aversion*), auction policy without face-to-face (*anchoring*) and season conditions (*hindsight*).
2. Factors in the timing of the auction (*availability*) and season conditions (*hindsight*) have a positive effect not significant on *profitability*. While *overconfidence*, *regret aversion* and auction policies without *anchoring* have negative effect no significant on the *profitability* of construction service companies in Central Lombok Regency.

## SUGGESTIONS

The results of the research suggest practical improvements related to the procurement process of government goods / services that are:

1. Government needs to continue to improve the development of human resources of local entrepreneurs, especially the level of understanding of information from election documents (procurement documents), including increasing information technology through application use Electronic Procurement System (SPSE). This can further increase the company's confidence in following the competition, so that company managers are better able to analyze each incoming information, to strengthen decision-making analysis.
2. The government can take strategic policy steps in terms of simplifying auction / tender requirements for local entrepreneurs, without violating existing goods / services procurement regulations. Simplification of auction / tender requirements is expected to increase opportunities for local providers to win tenders / tenders, so that the investment passion that grows rapidly can increase the *profitability* company's.

## RESEARCH LIMITATIONS

This study has several limitations that are expected to be developed in future research, namely:

1. Researchers who conduct an analysis of the forming factors of bidding bidder participation electronically with a perspective *behavioral finance* do not yet exist at all, so researchers are only able to use relevant previous research with research, even though from a different scientific perspective.
2. Researchers who examine the relationship between factors *behavioral finance* and *profitability are* very rare; therefore in this study researchers are only able to interpret investment decision making factors with factors *behavioral finance*.

## FUTURE RESEARCH DIRECTIONS

Based on the limitations of the research as described earlier, the directions for future research are:

1. Further research is expected to be able to further examine the factors that form electronic participation of bidders in depth in the field of *behavioral finance* to strengthen the company's decision-making analysis.
2. This research only uses research samples of goods / services providers or construction service companies domiciled in Central Lombok Regency. For future research to take a broader group of respondents with other variables of *behavioral finance* in different areas of the company.

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