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# The Group Potency in Audit Teams and Its Impact on the Accounting Related Task Performance

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**Abstract-** The present study tests the impact of group potency on the auditors' accounting related task performance, by determining the impacts of the drivers affecting the development of group potency in audit teams, for the purpose of making up the deficiency in question. In consequence of the analysis of audit groups constituted of 160 independent auditors from 39 audit firms, through a longitudinal experiment, it was determined that, as a result of the development of the team's group potency, the audit performance is positively affected. Besides, collaboration between team members, previous experiences of group members, group identification of individuals and goal clarity were determined as factors contributing to the development of group potency within the audit team. On the other hand, no relationship could be established between group autonomy and group potency. As for accountability and group side variables, these were determined as factors having an impact in the structural model. In the research, the new model, which was manifested through the use of unique scales and scenario, was put through test, and certain implications and discussions were made addresses towards applicators, managers and researchers, in relation with the findings obtained.

**Keywords:** group potency, task performance, group identification, collaboration, goal clarity.

## 1. INTRODUCTION

The present study deals with the relation between the group potency of the audit team and the audit performance. Audit is a complement of activities, reducing the self-seeking approaches of managements, helping the stakeholders to be protected in a holistic manner and preventing errors and frauds. The activity of audit, typically consists of whole process of transactions, which are challenging, complex, interdependent and demanding. Fulfillment of the performance expected from audit, does not only depend on the individual knowledge and skills of auditors, but also in correlation with the cooperative work of the audit team consisting of external auditors. Therefore, the effectiveness of the audit group directly affects the success of the audit activities. Performance is typically viewed as a function of ability, knowledge, environment and motivation (Libby and Luft, 1993). The Audit tasks are particularities; they require specific knowledge and teamwork. Meanwhile the goal of a structured, facilitated

group process is to follow Standard procedures, maximize efficiency and effectiveness, and reduce the effects of nonproductive interactions among team members (Chang et al., 2003). Audit teams are formed to include the independent auditors, who know about, and use the audit process targeted for audit quality. The standard audit process, including data collection and review, are intended to avoid inefficiencies of work process. Audit teams are more effective when members get to know each other quickly, in particular, when they share information about their expertise, give each other feedback that verifies each auditor's self-concept, and develop interpersonal congruence. At this point, the group potency concept is an important factor affecting the group performance. Group potency is a social-psychological factor that is motivational in nature and important antecedents of group outcomes. Existing explanations of group performance, however, are incomplete and tend to neglect mechanisms inherent in the groups themselves as important determinants of group effectiveness (Cohen et al., 1996; Gully, 2000; Kozlowski and Ilgen, 2006). While group potency is considered as being a developing phenomenon in the field of group behavior, it hasn't been sufficiently accentuated in audit studies. Some researches state that successful audit activities will be possible through the collective efforts of individuals. Business enterprises being subjected to audit by internal or external auditors, is a fairly complex problem solving and decision making process. Effective decision making procedures, in short, may result in decisions that are more likely to achieve intended outcomes. Haphazard procedures, in contrast, could be more likely to lead to outcomes that will be regarded as unsuccessful. Accounting enables the information generated by the information system to be analyzed, evaluated; the auditors to reveal the risk factors accurately, and the business enterprise to act on healthier grounds. Auditors encounter some challenges, arising from the nature of the audit task, during the decision making process. As for overcoming of these challenges and establishment of a solid foundation, these are related with the audit becoming more efficient and effective. In Rupley et al. (2011), it is specified that, concerned persons started to pay more attention to the activities of audit groups and audit teams, and to monitor these activities in a more intense manner during

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the post-SOX period. Specially, the current climate of intense competition and litigation in the auditing profession has resulted in auditors paying more attention to conducting efficient and effective audits (Knechel, 2007). As stated in Reheul et al. (2013), the audit performance being at the desired level has also some effects, such as client satisfaction and client loyalty. On this sense, the effectiveness of the audit is directly related with the service quality (Ismail et al., 2006). It is also obvious that, effective audit groups will enable many benefits for the society and stakeholders, such as better financial reporting, reduced accounting fraud, better management of the time allocated for the audit period, and increased trust towards the company (Abbott et al., 2000; Beasley et al., 2000; Kobbeltvedt et al., 2005; Walczyk and Griffith-Ross, 2006; Cohen et al., 2007; Zhang et al., 2007; DeZort et al., 2008; Cohen et al., 2010).

In Constance and Wright (2011), the most basic characteristic features of auditors displaying a high level of performance, are expressed as predisposition to group works, the ability to share past experiences with team members, the ability to take responsibility, the ability to safeguard the stakeholders' interests and display of efforts in order to keep the group's motivation at a sustainable level. Within this context, team members supporting each other in terms of motivation has a positive impact on the performance. In order for the audit performance to be at the desired level, the auditor should be supported with internal and external motivation factors. Internal motivation is mostly related to the individual himself. As for the external motivation, it is shaped under the influence of environmental factors and group dynamics. From this aspect, group potency is a combination of external motivation factors and internal motivation factors. Recently, in some theoretical models, it is pointed out that group-based works have positive effects on performance in terms of structure, process and output. (Hackman, 1987; Tannebaum et al., 1992; Myers et al., 2004). Jex and Bliese (1999) have determined that group potency contributes to the increase in the satisfaction between members and to the rise in performance. Understanding the importance of group potency and assigning value to the relevant subject in audit works, will lead to benefits in organizational and individual basis. Achievement of budget effectiveness and protection of stakeholders while also fulfillment of client needs' satisfaction, are some of the potential benefits of group potency in audit works. One way of increasing audit effectiveness is to develop the teamwork, cohesiveness, team learning and communication between the auditors. As pointed out in Kelly and Barsade (2001), individuals constituting a team, bring with themselves not only their knowledge and skills, but also their feelings and thoughts. Within this context, group potency has an audit effectiveness-increasing structure. Similarly, in De Dreu and Van

Vianen (2001), the presence of another benefit of group potency is mentioned: reducing the organizational workload. The concept of group potency developed as a key determinant in understanding the effectiveness and performance of the group, and in decision-making (Shea and Guzzo, 1987). Group potency is the collective belief of a team that it can be effective: shared belief of team members as a whole. For, audit works are complex socioeconomic activities, and insufficient works of audit members and their refrainment from collaboration increase the corporate risk. Furthermore, the audit process covers the fulfillment of interdependent tasks, which affect each other directly and/or indirectly, rendering the concernedness of group members an obligation.

In the present study, I tried to reveal the relation between group potency and audit performance. While predominantly a focus on individual features of the auditors is witnessed in other studies addressed towards understanding and explaining audit performance, the present study is rather focused on the impact of group properties on the audit performance, instead of the individual features. There were no past studies I could determine, which were addressed on the relation between group potency and audit performance, and if there are any, limited number of empirical evidences was produced. For this reason, the purpose of the study consists of the impact of group potency on audit performance, and revealing the relation between these two concepts.

The main contributions of this research can be summarized as follows. Firstly, I add the scarce empirical evidence on the drivers of group potency and its impact on audit performance. Secondly, this is the first study to examine relations between group potency and audit performance. Thirdly, I developed a fully new and original scenario in order for the audit performance to be measured. Also, I produced a new scale for goal clarity, which is group potency's antecedent. I created a new dummy variable for the experience variable, which is also an antecedent of group potency. I also developed a new scale for the accountability variable, which is among the control variables of the research, and I provided support to studies and examinations in this field. In the conceptual framework section of the study, analysis of factors affecting group potency from an interdisciplinary point of view was also made, and the relation between group potency and audit performance was hypothesized a few times. In the subsequent third section, scales prepared for the implementation of the research is explained, along with the experiment study. Analyses and findings were presented in the fourth section. Lastly, discussions and conclusions were tackled and suggestions were developed for managers and researchers.

## II. CONCEPTUAL FRAMEWORK AND HYPOTHESES

It must be mentioned that audit works are chaotic, risky and unpredictable processes, which are exposed to external factors. The complex structure of the audit would also make it feel on the audit effectiveness. Sharing between the auditors and the collaborations of auditors will be influential in reducing the risks, which would occur. Group potency will also constitute a basis for the auditors to be motivated, and will increase the audit success. Van Zomeren et al. (2010), pointing out these two main elements, state that the performances of group elements start to increase after they start to define themselves as parts of the group. Young auditors would particularly be more affected of these motivational factors. It is necessary to specify that, hesitation or disbelief to be experienced by group members on the fulfillment of the task would render the audit ineffective and increase the risk for stakeholders. For this reason, it is a must for the motivational factors to appear in the audit process. Also, individuals being in interaction and sharing knowledge and source with each other, will be helpful in increasing the talent and skills of the group, in ensuring the group to learn faster, in decreasing the budget pressure and in ensuring the audit to bring the expected benefits.

Due to the reasons specified above, group potency will be of great importance for the success of the audit activity. Nevertheless, there aren't many detailed information concerning the external implicit variables and results of group potency. To emphasize these, the external hidden variables (antecedents) of group potency and their impacts on audit performance were tackled in my theoretical model, and the model design of the research was produced.

### a) Drivers of Group Potency

The primary objective of this section is to explain the theoretical basis of group potency and examine its antecedents. In certain studies, it is stated that past experiences are an effective variable in the development of group potency. Past experiences involving knowledge and skill facilitate achievement of goals through increasing group potency (Jung and Sosik, 2003; Watson et al., 2001; Gibson et al., 2000; Vancuover and Kendall, 2006; Gibson and Earley, 2007; Tasa et al., 2007). For past works, performances and experiences strengthen the group's belief towards their capability to perform successfully. Collaborations made in past experience works also make themselves feel in current audit activities and light the way for the works to progress smoothly and for the audit to become effective. In Archambeault and DeZort (2001), it is emphasized that, auditors, who have gone through more audit experience together, would be more successful in the subject of fraud detection. An

experienced team display a more organized, more coordinated behavior, which is more predisposed to teamwork. Besides, it also leads to a development increasing intra-team relations and communication. Past experiences of the audit team, enable during the current audit tax, efficient use of technology, performance of the task, team communication, information exchange of members, and carrying out of more analytic discussions on problems and problematic documents. Within this context, members' sharing of technical knowledge (know-how) with each other prevents the audit failure. For this reason, the evaluations above may be hypothesized as specified below.

*H1: Past experiences of the members of the audit team have a positive impact on the development of group potency.*

As for another factor influential in the development of group potency, it is goal clarity. The goal clarity is an important issue for auditors' roles and responsibilities as well as their task related abilities and work styles (Mathieu and Rapp, 2009). Shafer et al. (2013) express in their research carried out on the audit activities of Asian auditors, that audit tasks have a process-based structure, and the relevant structure consists of goals interdependent on each other (goal interdependence). Goals being each other's successor or antecedent throughout the task, requires each goal to be revealed in an express and clear manner. In an audit team where targets are fully defined, and goals are known and understood by all auditors, group potency would be more developed. Within this context, goal clarity may be defined as the group being fully and in a detailed manner aware of the identity of the goal and of the work for the fulfillment of which efforts are displayed. Therefore, it is possible to explain goal clarity in audit teams as the clear emergence of the benefit expected from the audit in consequence of the efforts. There are many studies indicating the positive impacts of the goal clarity on group performance. Besides, goal clarity has benefits such as regulation of individual roles, the ability to discuss the targets, the opportunity to think it offers on whether the goals are rational. A goal, consisting of determining whether the actual inventory of stocks correspond to their recorded inventory, is a clear goal. Clarity would help the group members to be better coordinated, and also increase the audit effectiveness. The possibility of mutual support and solution of intra-group conflicts would increase with goal clarity. To put it in another way, the goal clarity will facilitate the members to understand why the group exists, and will improve group potency. Goal clarity is in addition important, since it offers the opportunity to think thoroughly on each detail, through tackling the audit activities in a holistic manner. Within this context Hypothesis no. 2, is specified as follows.

H2: Goal clarity level of audit team members has a positive correlation with the development of group potency.

As for another factor having an impact on the development of group potency, it is the collaboration between the group members. Collaborating among group members creates a common appreciation of the opinions and ideas which were apparent and untapped. For example, during audit activities, members are likely to seek out the views, ideas and feelings of others to better understand the problem and then interactively apply them for effective solutions. In the present study, it is hypothesized that interpersonal collaboration would develop group potency by affecting the team spirit. For audit teams and committees consist of people, and collaboration between humans would positively affect the effectiveness. Collaboration can reduce people's fear and increase their openness in sharing their ideas with others, and eliminate the stereotypes and thus synergistically combine their feelings (Garcia-Prieto et al., 2007). Also, collaboration among audit members regulates communication flow, making the team opinions and ideas transparent to enhance group potency. Collaboration would also help the construction of the collaboration and settlement of conflicts. Mutual collaboration and cooperation must be taken into account as a factor, which would facilitate the co-operation of individuals, prevent the efforts displayed from being ignored and strengthen the attachment between individuals. In the light of the explanations, hypothesis no. 3 may be expressed as follows:

H3: Collaboration between audit team members has a positive impact on the development of group potency in audit teams.

An important factor in the development of group potency is the group autonomy. As group members become more autonomous and feel greater control over the processes and procedures. Further group autonomy increases the development of new ideas and opinions and problem solving techniques. Empowerment of persons or support provided to people is an important factor affecting the increase in organizational performance. Particularly, the audit team having an authority and enjoying the power to directly manage and orient itself, are the signs of the autonomy's presence (Kelly and Barsade, 2001; Manz and Sims, 1991). It is observed in studies addressed towards human behavior that, the concept of group potency is built on autonomy. Autonomy becomes cleared in groups displaying the competence of acting independently and self-managing. Autonomy also enables the establishment of intra-group democracy and the ideas to be expressed freely. With its motivational aspect, autonomy contributes to the development of group potency, by reducing the negative feelings and thoughts of auditors and increasing the individuals' control sense, their self-

definition and their feelings of independence. The following hypothesis is offered in the light of these evaluations and determinations.

H4: Group autonomy has a positive impact on the development of group potency in audit teams.

In certain studies, it is expressed that group identification has a significant reflection on group potency. Team identification is the process by which individual members perceive themselves in terms of the values, goals, attitudes, and behavior they share with other team members (Jannsen and Huang, 2008). Group identification is the emotional significance that members of a given group attach to their membership in that group (Van de Vegt and Bunderson, 2005). To identify with a group, individual needs to perceive him or herself as psychologically intertwined with the fate of the group and to see him- or herself as personally experiencing the successes and failures of the group. Further, the individual should have the desire to appease, emulate, or vicariously gain the qualities of the others and, thus, define the self in terms of the people in the group. Since collective beliefs emerge from members confronting collective concerns or task-related issues, collective identification develops from the extent to which these common concerns of team goals and norms are acknowledged and enacted. Audit context that provides structure, norms, and guidance conducive to congruent expectancies regarding appropriate behaviors for group success. Ashforth and Mael (1989); Mael and Ashforth (1992)'de asserted, developing group norms is one way the reinforce group identification since social identification theory suggests that shared goals, interpersonal interaction, or common history may affect the extent to which individuals identify with a group. Researches by Tjosvold and associates (1998, 2004), Kark et al. (2003) and Shamir et al. (2000) have shown that cooperative teams perform better than uncooperative teams. The sense of group identification or oneness motivates individual team members to believe in each other's capability to perform multiple tasks. Thus, audit members should have greater confidence in their team's ability to accomplish the group goals well. In the light of these valuations, hypothesis no. 5 was composed as follows.

H5: Group identifications of audit team members have a positive impact on group potency.

#### *b) Group Potency and Accounting Related Performance*

Auditors' ability to cope with different environments and make quality judgments is dependent on their own efforts to improve performance (Bonner, 1994). In the auditing process, independent auditors represent diverse functions and the task requires members to work interdependently. Group members' feelings of psychological closeness to group affect their

readiness to learn in groups. Group potency is a social-psychological factor that is motivational in nature and important antecedents of group outcomes (Gully et al., 2002; Lester et al., 2002; Gibson, 1999; Gibson et al., 2000; Campion et al., 1993; Goddard, 2001; Iskandar et al. 2012; Pearce et al., 2002). Potency includes auditors feeling they can bring up problems and difficult issue and make a mistake without it being held against them. Potency is the collective belief that the group can be effective. A strong belief in group efficacy may contribute to creating a positive interpersonal climate and greater cooperation among group members. These phenomena may buffer the potential negative effects of task complexity by providing audit members with the necessary strategies to adequately manage their divergences. Compared to groups with low group potency, those with high levels would be likely to cultivate an environment that is more open and tolerant about divergent opinions and interpretations. Researchers have expressed that the performance will improve, when the collaboration, coordination, cohesiveness and communication relevant to the team's works are increased. In Choo (1986), it was determined that job stress has a negative impact on the performance of auditors. In a group involving a high level of collaboration and communication, it must be expected for the average stress per individual to fall. Therefore, an increase to occur in the potency level of the group would increase the performance, through reducing the job stress of auditors. However, the group potency-performance relation specified above was mostly performed in managerial fields however empirical tests were not sufficiently carried out concerning audit activities. The present study aims to reduce the mentioned gap and contribute to the literature from this aspect. Accordingly, in the present study, I am of the opinion that, audit performances of audit teams having higher group potency levels, will be more successful, better and more effective than teams having lower group potency levels or lacking any group potency at all. For, in teams having a high level of group potency, it must be expected for the synthesizing and analyzing of audit findings and documents, sharing of the information, feedback and drawing of conclusions to be faster and more effective. The high potency level will enable the expectations to be fulfilled by contributing to more accurate decision making processes relevant to audit, to audit reports' involving more accurate determinations and orienting the stakeholders in a more accurate manner. Also, development in the ability to deal with time pressure of management or client origin will be observed in teams enjoying a high level of group potency. In an examination made by Tasa and Whyte (2005) on the decision-making processes of the groups, it was determined that group potency increases the analytic thinking and decision-making skills and has a positive impact on the performance. In the examination

carried out by Lee et al. (2011) on 71 groups, the presence of positive impact of group potency on performance was proven. In the study, I also envisage that teams with higher levels of group potency would perform more cost-efficient activities. In a team, consisting of individuals having rational confidence in themselves and their team, and where a high-level of communication and collaboration is enjoyed, the problem solving skill would be at a higher level, and the sources allocated to such a team will be used in a more efficient and appropriate manner. As for the reduction in the audit errors, it would decrease the risk of works' recurrence and enable the efficient usage of the time. In the light of all these evaluations, Hypothesis no. 6 is shaped as follows.

*H6: Group potency level of audit teams has a positive impact on the audit performance of audit teams.*

When the hypothesis produced above are taken into account, it would be observed that factors building the group potency, and outputs obtained in consequence of a high-level of group potency, are subjected to test. Within this context, it is necessary to design the collaboration factor, past experiences factor, goal clarity factor, group identification and group autonomy factor as antecedent factors having an impact on group potency. As for the audit performance, it is a factor produced in consequence of a high level of group potency, and is included in the model as a result of group potency. Within this context, the model produced in the hypotheses of the research is provided in figure 1. While it does not constitute the focus point of the research, accountability and group size variables were defined as control variables and included to the model, in order to improve and expand the findings and results produced by the research. The model displays a fully unique structure, aiming to reveal the relation between group potency and audit performance.



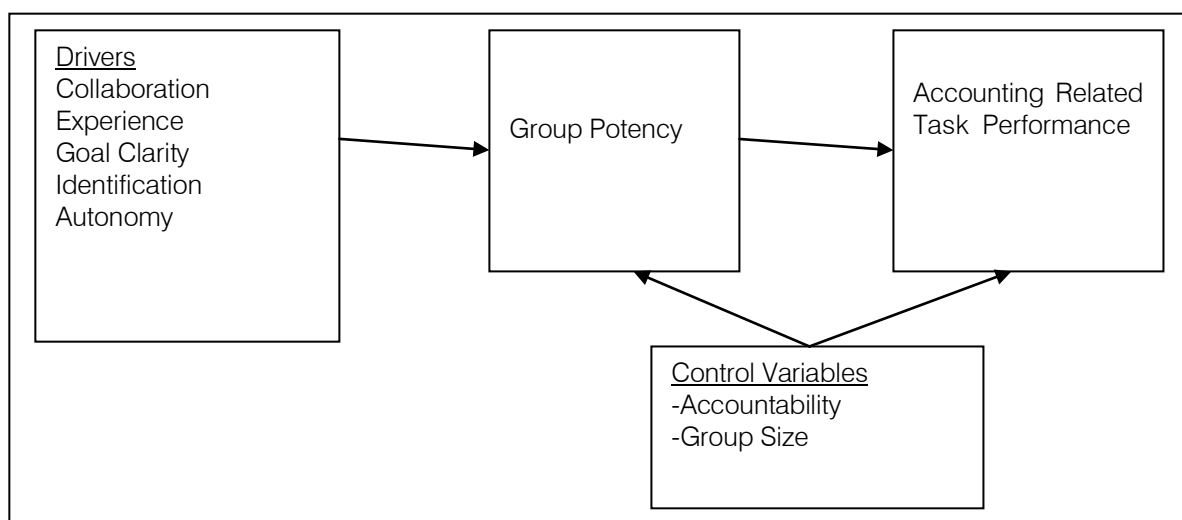


Figure 1 : Proposed Research Model Above

### III. DESIGN AND METHOD

#### a) Phase 1- Measures

Two-staged and a fairly extensive design and experiment was carried out to test the hypotheses pointed out above and to determine the presence of the structural model. The method to measure the audit performance and to determine the audit success is a fairly controversial grey subject. In literature examinations, it is known that different researchers used different techniques and measurement instruments. At the same time, I developed a fully new, original and unique measurement instrument in the light of past studies, in order to contribute to studies addressed towards measurement of audit performance. In the scenario, I also have taken into consideration the changes occurring in internet technologies and social media (social network). For this purpose, I prepared a scenario containing approximately 50 accounting and finance data pertaining to a hypothetical firm. I included real events and data, which may be encountered by audit teams during their ordinary audits, in the scenario. I also received opinions and suggestions from professionals of the sector and academicians in the preparation of the scenario. Of the 50 accounting and finance data pertaining to the firm, 20 consist of suspicious, fraudulent or erroneous accounting and finance transactions and records. The number of suspicious, fraudulent or erroneous transaction / event, which could be determined by the participants, constituted each participant's individual performance score, and the average of the individuals constituting the group, constituted the audit task performance score. The scores obtained were converted to scientific findings, through being subjected to statistical analysis during the subsequent stages.

In addition to the scenario prepared concerning the measurement of the audit performance, measurement instruments whose reliability and validity are proven were also involved in order to carry out the determination and measurement of the group potency factor, and of other factors, which are the drivers of group potency. The group potency scale consists of seven items and it is taken from Guzzo et al. (1993). Group identification scale was computed using items from Allen and Meyer's affective commitment scale (1990). Goal clarity scale consists of four items and was developed by myself. The group experience scale was produced by myself as dummy variable, and was expressed with 1 if the group members previously have worked together in any audit activity, and with 0 if they didn't. The collaboration scale between the group members consists of six items, and was adapted by myself to audit activities, upon being taken from Kahn (1996). The group autonomy variable, consisting of two items, was adapted by me to the audit subject, upon being taken from Sethi (2000).

Although not the focus of the study, some variables need to be controlled for because they were shown to affect key variables in the model. Previous research suggests that group size and accountability can have significant influence on the group potency and audit performance. Group size, measured as number of persons in the team, affects group potency development and audit performance. For instance, the group potency level may be more intense in smaller groups than larger groups due to less hierarchical approval and bureaucracy. These studies found that the size of audit group is significant factor in the fraud detection (Moyes and Hasan, 1996; Moyes, 1996; Owusu-Ansah et al., 2002). In Tan et al., (2002), it is stated that accountability has impacts on the audit

performance. Similarly, in Leung and Trotman (2005) and Bowrin and King (2010), it is proven that accountability pressure has a positive correlation with the audit performance. Schlenker (1997) and Mohd-Sanusi and Iskandar (2007) also support these findings. Accountability pressure on individuals makes them answerable to others for performing up to prescribed standards in fulfilling obligations, duties, expectations and other charges (Schlenker, 1997). Several studies on audit performance have examined the effect of accountability on audit performance (Chang et al., 1997; Peecher, 1996; Tan and Kao, 1999; DeZort et al., 2006). In order to measure the accountability variable, a scale was developed for the present study, determined through 4 questions produced by myself. The multi-item scales in question were modified in the light and under the guidance of previous studies, addressed towards audit studies, and were added certain items by myself to introduce novelty to science. Seven-level Likert scale was used to be able to measure the factors, and the end-points of the range were (1) strongly disagree and (7) strongly agree. The measurement instrument was produced in consequence of all these preparations. In the first section of the measurement instrument, participants were informed through short definitions and explanations concerning group potency and other variables. In the second section, multi-item questions concerning group potency and its antecedents were asked, along with the questions addressed towards determining personal demographic information pertaining to participants. As for the third section, scenarios measuring the audit performance of auditors and audit report composition page were included. After the preparation of the measurement instruments, the second phase, the experiment phase, was initiated. In the relevant phase, the produced measurement instruments were directed towards participants and the study was carried out.

#### b) Phase 2 – Experiment

In order for the experiment to be carried out, audit firms displaying activity in Turkey were selected as sample, and the firms were first reached through e-mail. 48 of the 287 firms reached, stated they may participate to the study through the face-to-face interview method. In the first section of measurement instruments, the purpose of the research and the relevant concepts were briefly mentioned. As for the second section, it included multi-item questions concerning group potency and other factors. As for the third section, it consisted of scenario concerning the audit performance of the audit report. Experiment pertaining to the scenario was carried out in a period of approximately 3 months, as longitudinal study. The experiment was distributed into a two-staged timeframe. Each firm, to which a survey was distributed, was asked to form groups of various member numbers, determined in a random manner,

which was fulfilled. Individuals constituting these groups evaluated and answered the scenarios fully independent from each other during the first stage (at the T1 time point). An approximate period of 3 months was afterwards given to these individuals, and they were asked to think jointly on the firm included in the scenario, and to make collective analysis, to discuss the firm, to exchange ideas and to cooperate, throughout the relevant period of time. Eventually, they were asked to prepare an audit report was once again at the T2 time point (end of the three months). Besides, multi-item scales included in the survey in form of questions, were answered by the members at the T2 point, as a member of an audit team. At the end of the experiment in question, two different audit performances pertaining to two different timeframe were obtained from the participants. At the first timeframe (T1), the group members evaluated the forms completely independent from each other and prepared the audit report. At the second timeframe (T2), the members prepared the audit report at the end of an examination and analysis period of three months, through cooperating, discussing and exchanging ideas. While audit reports prepared completely individually at the starting point (T1) were displaying individual audit task performance, the audit reports prepared at (T2) time point revealed the audit performance of each group. The purpose in the experiment is to reveal the impact of group potency on audit performance. The experiment required quite a lot of effort, and unwilling participants and forms partially unfilled forms were eliminated. Eventually, full and adequate data were obtained from 160 auditors employed at 39 firms. Scales and scenario used in the research, and the list of fraudulent, erroneous and suspicious transactions in the scenario are enclosed. Information concerning the participants may be found in

Table 1 : Characteristics of The Sample

Characteristic	Mean	Standard Deviation	Range
Age	31.70	2.7	24-61
Position tenure (years)	5.8	0.9	0-26
Firm tenure (years)	5.2	0.7	1-13
Audit Experience	9.7	1.2	1-29
Group Size	4.1	0.2	3-7
Percent of Total Sample			
Gender:			
Male	86.3		
Female	13.7		
Education:			
Graduate	77.2		
Post-graduate	18.5		
Ph.D.	4.5		
Position:			
Manager	9.4		
Chief Auditor	18.3		
Auditor	72.3		

c) *Analyses and Findings*

I first conducted confirmatory factor analysis (CFA) at the group member level to examine the factorial structure of the subscales for measuring group potency, group autonomy, identification, collaboration, goal clarity, accountability. An a priori factor structure fits the data reasonably well,  $\chi^2 = 167.39$ ,  $p < 0.01$ ; RMSEA=0.08; GFI=0.92; NNFI=0.93; CFI=0.94. All items loaded significantly on their designated latent variables. Before performing the analysis, I calculated the mean of the scenario score for each experiment group and the group score of each question item were aggregated. In this respect, the interrater agreement (rwg) on group level measures needed to be demonstrated. All rwg values ranged .73 to .88 well above the 0.60 benchmark indicating an acceptable level of interrater agreement for each aggregate measure in an audit group.

The reliabilities of items are assessed by examining their loadings on their respective latent constructs; higher loading of 0.70 or greater indicate that more variance is shared between the measures and its latent variable (Hair et al., 2006). Also, composite

reliability and Cronbach's alpha were used to evaluate the reliability of scales; the findings showed that the scales were highly adequate. In assessing the convergent validity of latent variables, Fornell and Larcker's average variance extracted (AVE) criterion was chosen. AVE exceeded the 0.50 cutoff value. An AVE value of 0.50 is logically a satisfactory point as it indicates that latent construct is able to explain more than half of the variance of its indicators on average. According to Fornell and Larcker (1981), discriminant validity is assured when the following two conditions are met: (1) the value of the AVE is above the threshold value 0.50, (2) the square root of AVE of all latents should be larger than all other cross-correlations. Information on composite reliability, Cronbach's alpha, the interrater agreement (rwg), AVE and the square root of AVE are presented in Table 2. Consequently, the measurement items used for this research demonstrate good reliability, convergent and discriminant validities. As audit performance, group size and group experience were assessed with one each score, these scores were excluded from the factor analysis.

Table 2 : Reliability and Validity Scores

Variables	Composite Reliability (CR)	Cronbach's Alpha ( $\alpha$ )	Interrater Agreement(rwg)	AVE	$\sqrt{AVE}$
Group Potency	0.83	0.84	0.88	0.66	0.81
Collaboration	0.81	0.78	0.83	0.72	0.84
Experience	0.77	0.75	0.73	0.64	0.80
Identification	0.73	0.71	0.76	0.61	0.78
Goal Clarity	0.80	0.75	0.81	0.74	0.86
Autonomy	0.78	0.76	0.77	0.68	0.82
Accountability	0.75	0.78	0.74	0.59	0.77

Table 3 shows descriptive statistics and correlation matrix. According to the table, there is a strong positive correlation between group potency and audit performance ( $r=0.72$ ). Besides group potency's relations are determined being as the follow values: experience ( $r=0.53$ ), identification ( $r=0.37$ ), collaboration ( $r=0.57$ ) and goal clarity ( $r=0.39$ ). However no relation could be determined between group autonomy and group potency. Another interesting point is the presence of a significant and negative correlation between group autonomy and accountability variables ( $r= -0.26$ ). Relations between group potency and its antecedents have the characteristics to verify the ideas stated in the research hypotheses. As for the strong relation between group potency and audit performance, it strengthens the basic hypothesis of the research. Some relations were also determined between control variables included in the correlation matrix and other variables. For example, there is a relation of medium strength between group size and audit performance ( $r=0.23$ ). However, no correlation was determined between group size and group potency, in

the light of data included in the correlation matrix. As for another point necessary to specify concerning the matrix, it is the individual audit performance variable, which appears in the last line. The mean and standard deviation concerning the relevant variable were determined respectively as 12.25 and 0.82.

The mean value of 12.25 in question is the value obtained from the participants in the survey distributed during the beginning of the study, at T1 time point. Audit performance scores of the participants were measured individually at the T1 point, and was determined as 12.25 per auditor. As for the group audit performance variable appearing in the second line of the matrix, it indicates the mean value ( $M=18.61$ ) and standard deviation pertaining to the audit performance score obtained at the T2 time point from the audit reports prepared by group members together upon jointly evaluating the audit scenarios. In the evaluation made between two timeframes, a significant increase was experienced in terms of audit performance scores. Individuals acting as a group in the study carried out at T2 point has an impact on the increase in question. In

performing the hypothesis tests of the research, only the audit performance (group) variable, obtained from the T2 point and, which displays the performance of the

audit group as a whole, was used. As for the value determined at the T1 point, it is only given in order for a comparison to be made through providing information.

**Table 3 :** Means, standard deviations and correlations of the measured variables

Variables	M	SD	1	2	3	4	5	6	7	8
1. Group potency	5.17	0.39	-							
2. Audit performance (group)	18.61	1.12	0.72***	-						
3. Experience	0.67	0.04	0.53***	0.64***	-					
4. Autonomy	2.91	0.51	0.13	0.14	0.23*	-				
5. Identification	4.28	0.21	0.37**	0.20*	0.21*	0.22*	-			
6. Collaboration	5.22	0.72	0.57***	0.39**	0.38**	0.09	0.43**	-		
7. Goal Clarity	4.45	0.38	0.39**	0.34**	0.25*	0.12	0.22*	0.33**	-	
8. Group Size	4.10	0.20	0.15	0.23*	0.10	0.32**	0.12	0.17	0.27*	-
9. Accountability	5.22	0.86	0.44**	0.37**	0.28*	-0.26*	0.13	0.21*	0.36**	0.14
10. Audit Performance (Individual)	12.25	0.82								

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < 0.01$

To test the hypotheses The Partial Least Squares (PLS) technique was used as it is suitable for validating predictive models. Compared to the covariance-based structural equation modeling, the PLS is less restrictive on sample sizes (Gefen and Straub, 2005; Chin, 1998). PLS allow for explicit estimation of latent variable scores. PLS with bootstrap estimates of Standard errors was used due to the characteristics of sample size. The models with 1000 bootstrapping runs demonstrate good explanatory power.

#### d) Test of Hypotheses

The structural model presents information on the path coefficients ( $\beta$ ) and the R2. The strength of the relationship is indicated by  $\beta$  and R2 highlights the percentage of variance in the model to give an indication of its predictive power. Also, T-statistics were calculated for all coefficients, based on their stability across the subsamples, indicating which links were statistically significant. Data necessary to take the measure of hypothesis tests and results of the hypotheses are provided in Table 4.

**Table 4 :** The PLS results

Hypothesis	Path	$\beta$	T-Values	Results
H1	Experience $\rightarrow$ Group Potency	0.27**	2.234	Supported
H2	Goal Clarity $\rightarrow$ Group Potency	0.31**	2.548	Supported
H3	Collaboration $\rightarrow$ Group Potency	0.34***	3.092	Supported
H4	Autonomy $\rightarrow$ Group Potency	0.09	0.703	Not supported
H5	Identification $\rightarrow$ Group Potency	0.22*	1.844	Supported
H6	Group Potency $\rightarrow$ Audit Performance	0.43***	4.781	Supported
Control Variables	Accountability $\rightarrow$ Group Potency	0.19*	1.295	
	Accountability $\rightarrow$ Audit Performance	0.23**	2.087	
	Group Size $\rightarrow$ Group Potency	0.11	0.866	
	Group Size $\rightarrow$ Audit Performance	0.20*	1.843	

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < 0.01$

In Hypothesis 1, the impact of group experience on group potency is tested. Accordingly, it was determined that the past experiences of individuals constituting the audit group, and them having conducted works together during the previous periods, have a positive effect on the development of group potency, with the values of ( $\beta=0.27$ ;  $T= 2.234$ ;  $p<0.05$ ). Hypothesis 1 was supported in line with these findings

obtained. Team experience is a significant driver, antecedent, having impact on the development of group potency in audit works. Hypotheses 2, which tries to determine the correlation between goal clarity and group potency, was found as being supported by parameters ( $\beta=0.31$ ;  $T= 2.548$ ;  $p<0.05$ ). Accordingly, as the knowledge levels and awareness of auditors participating to audit activities on the purpose of the

work and relevant expectations increase, the intra-group sensitivity also increases, and this progress contributes to the development of group potency. Hypothesis 3 emphasizes the correlation between the collaboration amongst group members and group potency. The suggested path ( $\beta=0.34$ ;  $T=3.092$ ;  $p<0.01$ ) was found significant by statistical data. Hypothesis 3 was supported. As the collaboration, cooperation and behaviors of goodwill between the members constituting the team increase, the commitment of individuals to each other also increases, leading to the group potency being impacted in a positive manner. The obtained ( $\beta=0.34$ ;  $T=3.092$ ;  $p<0.01$ ) values, express the collaboration variable being positioned as the most important factor among the antecedent of group potency. Among the group potency drivers involved in the research, the most effective variable is collaboration. In other words, building group potency in the audit team is strongly impacted from the collaboration between the members, in a positive manner. Hypothesis 4, which tests the thesis "group potency develops as autonomy is gained", was found insignificant according to the obtained ( $\beta=0.09$ ;  $T=0.703$ ) data and was rejected. Contrary to the works conducted in other disciplines, no significant relation between group autonomy and group potency could be established in the present work. To put it differently group autonomy does not have an important impact on group potency. Hypothesis 5, which seeks the answer to the question "Is there a correlation between members seeing themselves as parts of the audit group in a holistic manner and group potency?", was supported by the findings ( $\beta=0.22$ ;  $T=1.844$ ;  $p<0.05$ ) and accepted. As the group identification of the auditors increased, the group potency was positively affected, and displayed a development. The acceptance of Hypothesis 5 is relevant with the acceptance of Hypothesis 3. Auditors, defining themselves as belonging to a group, displaying more devoted behavior in order for the development and success of the relevant group, and developing cooperating and collaborating behaviors between the group members, would have an impact leading to the development of group potency. Therefore, the opinion, whose presence between group identification and group potency is expressed, was found significant and important in consequence of the findings. Hypothesis 6, which builds the main structure of the research, the Group Potency  $\rightarrow$  Audit Performance relation, was scientifically accepted according to the values ( $\beta=0.43$ ;  $T=4.781$ ;  $p<0.01$ ). As group potency develops in an audit team, a significant development was also determined, first in the performance of the auditors, and in consequence of it, in the performance of the audit team, as a reflection of the former development. To put it simply, group potency has a positive impact on audit performance. This obtained finding is also in parallel

and consistent with results produced in the correlation matrix. The mediating role of group potency displays itself in a significant manner ( $\beta=0.43$ ) and it raises the audit performance significantly to a more successful level.

While it doesn't constitute the focal point of the research, the impacts of control variables, the research of whose presence is required, on group potency and audit performance are also notable. Accordingly, the accountability control variable has a positive impact on group potency ( $\beta=0.19$ ;  $T=1.295$ ,  $p<0.1$ ). As the accountability and responsibility center concept develops between the group members, it positively affects the development of group potency. The relevant determination may be a reflection of the negative relation between accountability and group autonomy. As for the impact of accountability on audit performance, these were observed as being significant and positive, according to the values ( $\beta=0.23$ ,  $T=2.087$ ,  $p<0.05$ ). As the accountability tendency of the group increases, the performance pressure makes itself feel and audit performance displays development. The impact of group size, another control variable, on the group potency, was determined as the values ( $\beta=0.11$ ,  $T=0.866$ ). According to these values, group size doesn't have a direct impact on group potency. However, the presence of indirect impacts may be researched in other works.

As for the impact of group size on audit performance, it was determined by the values ( $\beta=0.20$ ,  $T=1.843$ ,  $p<0.1$ ). Accordingly, audit performance is positively impacted by the size of the audit group. There is a point to be emphasized here. Group size does not affect group potency significantly, however it has a significantly positive impact on audit performance. While a direct relation of group size with group potency, which is perceptual and motivational, was not determined, its relation with audit performance, which can be determined in a more concrete manner, can be observed as significant. In order to understand the rates of the impact of factors involved in the work with mediator group potency variable, on the dependent audit performance, the variance results are needed. Table 5, prepared for this purpose, indicates the variance explained by variables.

Table 5 : R2 Results

Path	$\beta$	Contribution to R2 (%)
Experience → Group Potency	0.27**	0.14
Goal Clarity → Group Potency	0.31**	0.17
Collaboration → Group Potency	0.34***	0.22
Autonomy → Group Potency	0.09	0.04
Identification → Group Potency	0.22*	0.13
Group Potency → Audit Performance	0.43***	0.39
Accountability → Group Potency	0.19*	0.08
Accountability → Audit Performance	0.23**	0.10
Group Size → Group Potency	0.11	0.05
Group Size → Audit Performance	0.20*	0.09

According to Table 5, the most important change caused by the antecedents providing the development of group potency, is caused by the group collaboration variable with 22%. It is followed by goal clarity with a modification power of 17% and experience and identification factors, each with a modification power of 14%. As for the total variance of five factors, which are the drivers of group potency, it is determined as  $R^2=0.68$ . The value  $R^2=0.68$  reached, points the height of the of dissection power of the model as a whole. In addition, the fit indices obtained concerning the model,  $\chi^2=178.59$ ,  $p<0.01$ ;  $RMSEA=0.08$ ;  $GFI=0.91$ ;  $NNFI=0.94$ ;  $CFI=0.92$ , verifies that the model has a significantly high dissection power and structure as a whole. The group potency variable explains 39% of the change occurring in the audit performance. It is a fairly high value. The total impact of control variables on group potency is 13% and their total impact on audit performance is 19%. As for the remaining variance values, these are explained through factors non-included to the present work.

#### IV. CONCLUSION

The present study aimed to bring a new and original model to the audit-accounting literature for applicators, managers and researchers, from an interdisciplinary point of view, by testing it within group dynamics and audit performance. A few of the contributions made by the study should be expressed as follows. First of all, the present study verified the presence of a strong and positive correlation between group potency and audit performance. Secondly, it determined in an empirical manner that some factors (identification, experience, collaboration, goal clarity) have important impacts on the development of group potency. Thirdly, it is potential for the developed scales and audit scenario to have a positive impact on the point of view of future researches. Fourthly, the new model produced designed in detail the group potency and audit performance in the field of audit. The activity of audit consists of a whole process of transactions, which are challenging, complex and demanding.

Important findings were obtained between group behavior and audit performance in consequence of extensive examinations and tests carried out. The obtaining findings indicate that, an audit team with a developed group potency succeeds in rendering the challenging, complex and demanding structure of audit more simple and performing more effective audit works. Measuring instruments and scenarios developed specific to the research have an impact in the production of the findings in question. In the research, the drivers of group potency were tackled first and a relevant elaboration was made, in order for the group behavior to be better understood. Accordingly shaping of the group behavior of independent auditors in audit activities, and the process of these behaviors becoming effective, display development with group potency. In audit teams, it is positively affected from group potency, group experience, group collaboration, group identification and goal clarity factors. The relevant data obtained is in parallel with the results of studies carried out by (Bartel and Saveedra, 2000; Mathieu and Kohler, 1990) on different non-audit fields. However, no significant correlation could be established between group autonomy and group potency. Issues pointed out by the findings should be elaborated a little bit. First of all, it was determined that the collaboration and cooperation between group members develop group potency. Cooperation and collaboration facilitate the knowledge exchange between the auditors, the ability of co-thinking, team intelligence, co-learning and time management. The possibility of auditors who cooperate with each other and who collaborate relevant to their tasks, to make the energy to be spent on problems and details effective, would show increase. In fact, performance of audit activity carried out at the beginning of the research and the performance of the audit activity carried out at the end of the research are quite different in terms of scores and averages, and a significant improvement is in question. From this aspect, collaboration is an important factor in increasing the effectiveness of audit mechanism and in the development of group potency. Individuals constituting

the audit team having worked together during previous works, is another factor developing group potency. Sharing of past knowledge, having spent time in the past, mutual sharing of experiences reduce the difficulty and complexity degree of the task and contribute positively to the development of group potency. Experience being open to share, increases the possibility of auditors determining accounting frauds, fraudulence elements and errors during their tasks. Having worked together in the past also develops group potency through increasing the auditors' ability to better know each other's characteristics and personalities, and their ability to act in a flexible manner. As for another element developing group potency, it is goal clarity. Auditors having adequate information on their tasks, makes the task strategy clearer. By this way, auditors are able to create the strategy suitable for each audit task in an easier manner. Audit goals being clear and distinct develops group potency of the audit team, by strengthening the goal congruence and coordination between the auditors. Goals being understood by and known to by all members of the audit team, also makes a facilitating impact to a more accurate time planning by reducing the wasted time and unnecessary efforts. As another driver having an impact on group potency, identification takes on important tasks. Auditors seeing themselves as a part of work groups, feeling that they belong to the group, increase the motivation and develop group potency. However, the relevant determination may also have some disputed consequences. The possibility to experience a performance decrease, of an auditor defining himself as belonging to a group and who develops a commitment, increases, in case of a rotation or an institution change. The impact of identification revealed in Van Zomeren et al. (2010) following the study carried out university students, corresponds to the findings of the present study. For this reason, the professional aspect of identification must be more distinct than its emotional aspect. In an audit team consisting of individuals with a high level of identification, individuals displaying more wholehearted efforts, in order to prevent the group from getting harmed, would carry with it development of group potency. Contrary to Manz and Sims (1991) and some previous studies, no relation could be found in the present study between group autonomy and group potency. This may have a few reasons. First of all, it is possible for the results obtained from different studies made on different fields concerning group potency, to arise from the characteristics of the fields in question. As for audit, it is a field having distinct rules within itself and where it is mandatory to strictly comply with these rules. Due to this reason, audit's nature may have rejected the presence of such a relation. Secondly, the concept of accountability is more dominant in audit teams, when compared with the autonomy. This may be the reason why no correlation could be established. A fairly strong

and positive relation was determined between group potency and audit performance. This obtained result displays similarity with (Tasa and Whyte, 2005; Gully et al. 2002). Therefore, acting collectively increases the performance. Group potency produced by its antecedents, has a positive impact on the task performances of auditors. Within this context, group potency is an important factor, positively affecting the audit performance. The research has clearly shown that there is very big difference between the individual audit performance at the T1 time point and the group audit performance at the T2 time point. The difference in question proves the positive impact of group potency on performance. Among the control variables, accountability has a positive impact on both mediator variable group potency and dependent variable audit performance. As for group size, it had a positive impact on audit performance. Behind the rise in the audit performance, lies the auditors approaching the audit task with a group consciousness instead of individually and obtaining the opportunity to examine the events in a more analytic and profound manner. These evaluations and the judgments obtained have a characteristic to support the argument of "Collective behavior, while increasing intra-group unity, decreases intra-group conflict", emphasized in Goncalo et al. (2010). Group behavior creates a psychological environment decreasing the possibility of individuals making intentional mistakes. An auditor, which is prone to make intentional or unintentional mistakes when by himself, starts to act under the supervision and control of his other friends when in a group, and the audit risk decreases. Therefore, audits performed by a group give a more effective result, when compared with audits performed by an individual.

## APPENDIX

### A. Measures

Standardized factor loadings are in parentheses

Accountability Scale (I developed for this study)

Q1: Informing my superiors concerning the audit efforts I did has an impact on my task performance (0.71)

Q2: I feel responsibility against the stakeholders concerning the results of the audit activities I carried out (0.78)

Q3: Knowing that my audit works will be reviewed by others, has an impact on my task behaviors. (0.69)

Q4: Criticisms of manager and clients concerning my audit works ensure me to be more careful in my task behaviors. (0.73)

Auditing Specific Goal Clarity Scale (I developed for this study)

Q5: All of the group member auditors have an adequate level of knowledge concerning the goal of the audit task (0.77)

Q6: The audit group has adequate awareness concerning the needs and wants of the client and stakeholders, and goals of the audit. (0.70)

Q7: Audit group members have adequate information on the targets of the task undertaken and special purpose of each transaction. (0.73)

Q8: Audit goals are clear and are adopted by the members (0.65)

Q9: Audit goal(s) is/are clearly explained by managers to superiors. (0.74)

Group Experience item (I produced for this study)

Q10: I had worked with the members of my current audit group before, together, as part of the same team 1 (yes), 0 (no).

Auditing Specific Group potency Scale (adapted from Guzzo et al.1993)

Q11: Our audit group has confidence in itself (0.77)

Q12: Our audit group believes it can become unusually good by producing high quality audit report (0.69)

Q13: Our audit group expects to be known as a high-performing group (0.71)

Q14: Our group feels it can solve any problem it encounters (0.82)

Q15: Our audit team believes it can be very effective (0.70)

Q16: Our team can get a lot done when it works hard (0.66)

Q17: No task is too tough for our group (0.79)

Auditing Specific Group Identification Scale (Adapted from Allen and Meyer, 1990)

Q18: I have a sense of belonging towards the audit task and work group. (0.73)

Q19: I am proud of being part of this audit group. (0.77)

Q20: I feel responsibility concerning my group sustaining its works (0.64)

Q21: I would feel guilt, in case I leave the audit group. (0.70)

Auditing Specific Group Collaboration Scale (Adapted from Kahn, 1996)

Q22: There was an emphasis in our audit group to achieve goals collectively (0.78)

Q23: There was an emphasis in our audit group to have a mutual understanding (0.60)

Q24: There was an emphasis in our audit group to informally work together (0.72)

Q25: There was an emphasis in our audit group to share ideas, information, documents and problem solving techniques in audit task. (0.78)

Q26: There was an emphasis in our audit group to share the same vision for the group (0.62)

Q27: There was an emphasis in our audit group to work as an audit group. (0.73)

Auditing Specific Group Autonomy Scale (Adapted from Sethi, 2000)

Q28: The audit group had a major role in making critical decisions about audit task. (0.74)

Q29: The audit group was allowed to do the audit task as it deemed fit. (0.76)

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